Rogers Terminal & Shipping Co.
Internal Memo

03 March 2005

To: File

From: C. Buswell

Re: HazCom Book, Gearlocker

This HazCom book has been review and discussed with Marlon Horton. He is familiar with its contents.

C. Buswell, Safety Superintendent

M. Horton, Gearlockerman

874553
CARG003723

Table of Contents

1) Introduction

2) Policy's & Procedures

3) Monthly Gearlocker Inspection Forms

4) State Fire Marshal's *Hazardous Substance Information Survey*

5) MSDS Review Log

6) MSDS's

Introduction

CARG003725

Introduction

This MSDS Binder contains all pertinent MSDS sheets for materials used at this facility.

The MSDS' are subdivided into logical categories and are alphabetized within those categories. Prominent label names are used for correlation.

Users are encouraged to spend a few minutes familiarizing themselves with the layout and contents of this binder.

Also, this binder contains other Gearlocker related information as shown in the Table of Contents.

Policy's

CARG003727

Policy's and Procedures

- Gearlocker Safety & Inspection Program
- Hazard Communication Program
- PPE Program
- Waste Disposal – Spill Prevention and Response Plan

Rogers Terminal & Shipping Co.
Internal Memo

03 June 2005

To: Superintendent's Manual

From: Corby Buswell

RE: **Gearlocker Safety and Inspection Program**

As described in the Comprehensive Safety and Loss Control Prevention Program (Loss Prevention Section, Superintendent's Manual), the Gearlocker has certain standards, which are particular to it. The Portland Safety Superintendent will maintain these program policies.

1) The Portland Safety Superintendent will inspect the gearlocker once per month, using a check off list, which will be kept on file. The inspection is meant to ensure good housekeeping practices, proper use of safety equipment and lockout procedures, and up-to-date written procedures, hazardous communication program, and safety program.

2) Hydraulic and waste oil will be segregated and disposed by ORRCO (Oil Re-Refining Co.) @ 503-286-8352. ORRCO will provide Rogers with a receipt for all waste oils taken. The receipts will be kept on file in the MSDS binder at the gearlocker.

3) Gearman will wear OSHA approved footwear at all times. Goggles will be worn during cutting, welding, or other operations that pose special risks. Hearing protection will be worn when appropriate. Coveralls and gloves are provided. Hardhats will be worn whenever an overhead hazard exists and on all vessel job sites.

4) All Material Safety Data Sheets (MSDS) sent to the gearlocker by vendors will be kept in the MSDS book and are to be reviewed and updated by the Portland Safety Superintendent. New vendors will be told that all product deliveries must be accompanied by an MSDS.

5) The gearlocker will be prepared for an OSHA inspection at all times.

Rogers Terminal and Shipping Co.
Internal Memo

HAZARD COMUNICATION PROGRAM

02 June 2005

Rogers Terminal & Shipping Co.
1750 N.W. Naito Pkwy. Suite 120
Portland, OR 97209
503-221-7901

Rogers Terminal & Shipping Co.
955 Alaskan Way West
Seattle, WA 98119
206-284-1855

Rogers Terminal & Shipping Co.
11 Schuster Parkway
Tacoma, WA 98402
253-572-0146

General Information

Rogers Terminal & Shipping Company is to comply with federal and state regulations and has implemented this Hazard Communication program. The program is available for review at the following locations:

- Portland Office
- Seattle Office
- Tacoma Office
- Job site Superintendent
- Portland Gearlocker

Container Labeling Policy

All containers of hazardous substances entering company premises will be labeled. Each label will include:

- Indentification of the contents
- Appropriate hazard warnings
- Manufacturer's name and address

CARG003730

Secondary storage containers of hazardous substances not intended for immediate use will also be labeled. However, these labels need not include the manufacturer name and address.

Material Safety Data Sheets (MSDS)

We will inventory the hazardous chemicals used by our employees. MSDS' will be obtained for each substance identified by these inventories. The MSDS will then be labeled with an index number, copied, and made available to all employees. The binder containing the MSDS is located in the Gearlocker.

The Manager, Loss Prevention and Claime, or his designee will be responsible for obtaining and maintaining the data sheets.

MSDS files will be updated as new MSDS' are received. All vendors have been instructed to send MSDS' with their products.

MSDS files will be kept at the same location as the HazCom Program. (The Gearlocker)!

MSDS' will be available for review by all interested employees, during all working hours. Contact your immediate supervisor if any of the chemical substances are not labeled or current MSDS' are not on file.

Employee Training and Information

The Pacific Maritime Association provides information and training on hazardous communication for its member companies. All longshorepersons have been issued information pamphlets on relevant ahzardous communication issues.

These pamphlets are available through the hiring hall or by asking the superintendent for a copy.

- Program Coordinator; K.C. Bacon, Tacoma, Washington
- Alternate Coordinator: Corby Buswell, Portland, Oregon
- Location Manager: Arthur Hayes, Portland, OR
- Program Origination date: April 5, 1989
  - Updated November 10, 1994; November 6, 2001; January 6, 2003; **June 2, 2005.**

Rogers Terminal
and Shipping Co.
Internal Memo

02 June 2005

To: Superintendent's Manual

From: Corby Buswell

Re: Personal Protective Equipment Program

Most of the provisions of Cargill Grain Division's Manual specifically address problems posed by plant personnel working under provisions of OSHA general standards (CFR 1910). Our policies and procedures, while acknowledging the Policy Manual's requirements, follow the specific OSHA standards for longshoring operations. In this respect, we are in line with the accepted workplace standards of the longshoring industry. As regards the wearing of Personal Protective equipment, our written program states, "Hardhats and Appropiate Footwear Shall Be Worn by All Employees. Dust Masks, Goggles, and Ear Plugs Shall Be Made Available at All Jobsites." A separate memo detailing gearlocker requirements requires the wearing of appropiate eye protection for ". . . Cutting, Welding, and Other Operations That Pose Special Risks."

Longshore employees are instructed in the use of PPE prior to being dispatched to any Rogers job as part of their industrial safety training provided by Pacific Maritime Association (PMA).

1) **Eye Protection** As per OSHA 1910.132, a "hazard assessment" of our worksites has been done and it is determined that eye hazards are not present on vessels to such a degree as to necessitate eye protection as described by the statute. ANSI approved goggles are made available for use "*when there are exposures to eye or face.*"

2) **Head Protection** ANSI approved hardhats are required to be worn on all jobs.

3) **Foot Protection** Appropiate footwear, as provided by PMA, is required to be worn on all jobs. Our employees are not exposed to impact, falling objects, or puncture hazards. All cargo superintendents and gearmen are required to wear ANSI approved safety shoes.

4) **Respiratory Protection** As with the Eye Protection Program, a hazard assessment survey indicated that dust masks approved by ANSI against nuisance dusts are made available at each jobsite. In the event a special cargo or operation is conducted which requires specialized respiratory protection, employees shall be instructed in their proper use.

5) **Hand Protection** No Hazard dectected. Gloves are provided to employees engaged in separation operations on grain vessels. Gloves will be provided to any employee requesting them.

6) **Hearing Protection** Decibel level does not exceed OSHA standard for having a hearing protection program. ANSI approved ear plugs are available on each jobsite and their use is encouraged.

Rogers Terminal & Shipping Co.
Internal Memo

02 March 2005

To: Marlon Horton

From: Corby Buswell

Re: **Waste Disposal – Spill Prevention and Response Plan**

The only hazardous waste that Rogers' gearlocker generates is used motor oil. ORRCO (Oil Re-Refining Company) @ 503-286-8352 disposes of this. Other hazardous materials are stored in retail containers (MSDS sheets on file.) If any of these materials is spilled on the ground, commercial clean-up materials (Grab & Go Emergency Spill Clean-up Kits) are provided to contain and mop it up. These clean-up materials will be stored in an empty container and hauled away by our disposal company, ChemCare @ 503-222-6233.

Also, Waste Management @ 503-249-8078 disposes of all other non-hazardous wastes, including completely expended cans of propellant or paint. It is extremely important that Waste Management disposes of no hazardous wastes. Any cans of propellant, paint, or other hazardous materials, which are not completely empty, should be stored until such time as sufficient quantities are collected to support the cost of pick-up and disposal by ChemCare.

A COPY OF THIS MEMO WILL BE PLACED IN THE HAZCOM BOOK IN THE GEARLOCKER AND IN THE SUPERINTENDENT'S MANUAL

Cc: A. Hayes
K.C. Bacon
Operations Staff, Portland

Monthly Inspection

CARG003735

Monthly Gearlocker Inspection Forms

Gearlocker Inspection

Date 02 Sept 2008

Performed By C. Buswell

	Yes	No	Remarks/Action required	Date Corrected
Housekeeping - Clean, orderly, no slip/trip hazards, no clutter atop benches, clear exits. Clear in front of, and around, electrical breaker panels.	✓			
Welding Equipment - Components of equipment appear in good order, Oxy/Acetylene cylinders are chained and properly capped.	✓			
Power Equipment/Tools - Protective guards in place and serviceable. Cords secure in tool and plug end, no fraying. **All tools, both hand and power, to be removed from service if not in safe condition.**	✓			
Emergency/First Aid Supplies - Inventory at level to restock boxes at all elevators. A first aid box stowage diagram available.	✓			
Personal Protective Equipment available	✓			
Posted Numbers for Emergencies	✓			
Posted Number for Used Oil Disposal and Copy of the Spill Prevention and Response Plan kept in M.S.D.S. binder.	✓			
M.S.D.S. Binder is Up to Date. Shop foreman knows location of binder.	✓			
Fire Extinguishers in position, charged, and valid inspection endorsement.	✓			
Electrical Plug Receptacles, Light Switches and Fixtures in Good Condition. Any doubt, item to be Red-Tagged and P.O.P. Electricians to be called to make repairs.	✓			
Extension cords ARE NOT to be used in place of permanant wiring. Move item needing electircity closer to plug outlet, or have P.O.P. install plug outlet where needed.	✓			
Proper Restricting Device on Air Hoses	✓			

Comments:

Gearlocker Inspection

Date 8-4-2008

Performed By C. Buswell

	Yes	No	Remarks/Action required	Date Corrected
Housekeeping - Clean, orderly, no slip/trip hazards, no clutter atop benches, clear exits. Clear in front of, and around, electrical breaker panels.	✓			
Welding Equipment - Components of equipment appear in good order, Oxy/Acetylene cylinders are chained and properly capped.	✓			
Power Equipment/Tools - Protective guards in place and serviceable. Cords secure in tool and plug end, no fraying. **All tools, both hand and power, to be removed from service if not in safe condition.**	✓			
Emergency/First Aid Supplies - Inventory at level to restock boxes at all elevators. A first aid box stowage diagram available.	✓			
Personal Protective Equipment available	✓			
Posted Numbers for Emergencies	✓			
Posted Number for Used Oil Disposal and Copy of the Spill Prevention and Response Plan kept in M.S.D.S. binder.	✓			
M.S.D.S. Binder is Up to Date. Shop foreman knows location of binder.	✓			
Fire Extinguishers in position, charged, and valid inspection endorsement.	✓			
Electrical Plug Receptacles, Light Switches and Fixtures in Good Condition. Any doubt, item to be Red-Tagged and P.O.P. Electricians to be called to make repairs.	✓			
Extension cords ARE NOT to be used in place of permanant wiring. Move item needing electircity closer to plug outlet, or have P.O.P. install plug outlet where needed.	✓			
Proper Restricting Device on Air Hoses	✓			

Comments:

Gearlocker Inspection

Date 7-1-08

Performed By C. Buswell

	Yes	No	Remarks/Action required	Date Corrected
Housekeeping - Clean, orderly, no slip/trip hazards, no clutter atop benches, clear exits. Clear in front of, and around, electrical breaker panels.	✓			
Welding Equipment - Components of equipment appear in good order, Oxy/Acetylene cylinders are chained and properly capped.	✓			
Power Equipment/Tools - Protective guards in place and serviceable. Cords secure in tool and plug end, no fraying. **All tools, both hand and power, to be removed from service if not in safe condition.**	✓			
Emergency/First Aid Supplies - Inventory at level to restock boxes at all elevators. A first aid box stowage diagram available.	✓			
Personal Protective Equipment available	✓			
Posted Numbers for Emergencies	✓			
Posted Number for Used Oil Disposal and Copy of the Spill Prevention and Response Plan kept in M.S.D.S. binder.	✓			
M.S.D.S. Binder is Up to Date. Shop foreman knows location of binder.	✓			
Fire Extinguishers in position, charged, and valid inspection endorsement.	✓		updated in June	
Electrical Plug Receptacles, Light Switches and Fixtures in Good Condition. Any doubt, item to be Red-Tagged and P.O.P. Electricians to be called to make repairs.	✓			
Extension cords ARE NOT to be used in place of permanant wiring. Move item needing electircity closer to plug outlet, or have P.O.P. install plug outlet where needed.	✓			
Proper Restricting Device on Air Hoses	✓			

Comments:

Gearlocker Inspection

Date Sept 30 2008 (Oct 1 inspection)

Performed By C. Buswell

	Yes	No	Remarks/Action required	Date Corrected
Housekeeping - Clean, orderly, no slip/trip hazards, no clutter atop benches, clear exits. Clear in front of, and around, electrical breaker panels.	X			
Welding Equipment - Components of equipment appear in good order, Oxy/Acetylene cylinders are chained and properly capped.	X			
Power Equipment/Tools - Protective guards in place and serviceable. Cords secure in tool and plug end, no fraying. **All tools, both hand and power, to be removed from service if not in safe condition.**	X			
Emergency/First Aid Supplies - Inventory at level to restock boxes at all elevators. A first aid box stowage diagram available.	X			
Personal Protective Equipment available	X			
Posted Numbers for Emergencies	X			
Posted Number for Used Oil Disposal and Copy of the Spill Prevention and Response Plan kept in M.S.D.S. binder.	X			
M.S.D.S. Binder is Up to Date. Shop foreman knows location of binder.	X			
Fire Extinguishers in position, charged, and valid inspection endorsement.	X			
Electrical Plug Receptacles, Light Switches and Fixtures in Good Condition. Any doubt, item to be Red-Tagged and P.O.P. Electricians to be called to make repairs.	X			
Extension cords ARE NOT to be used in place of permanant wiring. Move item needing electircity closer to plug outlet, or have P.O.P. install plug outlet where needed.	X			
Proper Restricting Device on Air Hoses	X			

Comments: Check supply of rock-salt for icy weather possible in a few weeks!

Gearlocker Inspection

Date June 2, 2008

Performed By C. Buswell

	Yes	No	Remarks/Action required	Date Corrected
Housekeeping - Clean, orderly, no slip/trip hazards, no clutter atop benches, clear exits. Clear in front of, and around, electrical breaker panels.	✓			
Welding Equipment - Components of equipment appear in good order, Oxy/Acetylene cylinders are chained and properly capped.	✓			
Power Equipment/Tools - Protective guards in place and serviceable. Cords secure in tool and plug end, no fraying. **All tools, both hand and power, to be removed from service if not in safe condition.**	✓			
Emergency/First Aid Supplies - Inventory at level to restock boxes at all elevators. A first aid box stowage diagram available.	✓			
Personal Protective Equipment available	✓			
Posted Numbers for Emergencies	✓			
Posted Number for Used Oil Disposal and Copy of the Spill Prevention and Response Plan kept in M.S.D.S. binder.	✓			
M.S.D.S. Binder is Up to Date. Shop foreman knows location of binder.	✓			
Fire Extinguishers in position, charged, and valid inspection endorsement.	✓			
Electrical Plug Receptacles, Light Switches and Fixtures in Good Condition. Any doubt, item to be Red-Tagged and P.O.P. Electricians to be called to make repairs.	✓			
Extension cords ARE NOT to be used in place of permanant wiring. Move item needing electircity closer to plug outlet, or have P.O.P. install plug outlet where needed.	✓			
Proper Restricting Device on Air Hoses	✓			

Comments:

Gearlocker Inspection

Date May 5, 2008

Performed By C. Buswell

	Yes	No	Remarks/Action required	Date Corrected
Housekeeping - Clean, orderly, no slip/trip hazards, no clutter atop benches, clear exits. Clear in front of, and around, electrical breaker panels.	✓			
Welding Equipment - Components of equipment appear in good order, Oxy/Acetylene cylinders are chained and properly capped.	✓			
Power Equipment/Tools - Protective guards in place and serviceable. Cords secure in tool and plug end, no fraying. **All tools, both hand and power, to be removed from service if not in safe condition.**	✓			
Emergency/First Aid Supplies - Inventory at level to restock boxes at all elevators. A first aid box stowage diagram available.	✓			
Personal Protective Equipment available	✓			
Posted Numbers for Emergencies	✓			
Posted Number for Used Oil Disposal and Copy of the Spill Prevention and Response Plan kept in M.S.D.S. binder.	✓			
M.S.D.S. Binder is Up to Date. Shop foreman knows location of binder.	✓			
Fire Extinguishers in position, charged, and valid inspection endorsement.	✓			
Electrical Plug Receptacles, Light Switches and Fixtures in Good Condition. Any doubt, item to be Red-Tagged and P.O.P. Electricians to be called to make repairs.	✓			
Extension cords ARE NOT to be used in place of permanant wiring. Move item needing electircity closer to plug outlet, or have P.O.P. install plug outlet where needed.	✓			
Proper Restricting Device on Air Hoses	✓			

Comments:

Gearlocker Inspection

Date April 1, 2008

Performed By C. Buswell

	Yes	No	Remarks/Action required	Date Corrected
Housekeeping - Clean, orderly, no slip/trip hazards, no clutter atop benches, clear exits. Clear in front of, and around, electrical breaker panels.	X			
Welding Equipment - Components of equipment appear in good order, Oxy/Acetylene cylinders are chained and properly capped.	X			
Power Equipment/Tools - Protective guards in place and serviceable. Cords secure in tool and plug end, no fraying. **All tools, both hand and power, to be removed from service if not in safe condition.**	X			
Emergency/First Aid Supplies - Inventory at level to restock boxes at all elevators. A first aid box stowage diagram available.	X			
Personal Protective Equipment available	X			
Posted Numbers for Emergencies	X			
Posted Number for Used Oil Disposal and Copy of the Spill Prevention and Response Plan kept in M.S.D.S. binder.	X			
M.S.D.S. Binder is Up to Date. Shop foreman knows location of binder.	X			
Fire Extinguishers in position, charged, and valid inspection endorsement.	X			
Electrical Plug Receptacles, Light Switches and Fixtures in Good Condition. Any doubt, item to be Red-Tagged and P.O.P. Electricians to be called to make repairs.	X			
Extension cords ARE NOT to be used in place of permanant wiring. Move item needing electircity closer to plug outlet, or have P.O.P. install plug outlet where needed.	X			
Proper Restricting Device on Air Hoses	X			

Comments:

Gearlocker Inspection

Date March 3, 2008

Performed By C. Buswell

	Yes	No	Remarks/Action required	Date Corrected
Housekeeping - Clean, orderly, no slip/trip hazards, no clutter atop benches, clear exits. Clear in front of, and around, electrical breaker panels.	X			
Welding Equipment - Components of equipment appear in good order, Oxy/Acetylene cylinders are chained and properly capped.	X			
Power Equipment/Tools - Protective guards in place and serviceable. Cords secure in tool and plug end, no fraying. **All tools, both hand and power, to be removed from service if not in safe condition.**	X			
Emergency/First Aid Supplies - Inventory at level to restock boxes at all elevators. A first aid box stowage diagram available.	X			
Personal Protective Equipment available	X			
Posted Numbers for Emergencies	X			
Posted Number for Used Oil Disposal and Copy of the Spill Prevention and Response Plan kept in M.S.D.S. binder.	X			
M.S.D.S. Binder is Up to Date. Shop foreman knows location of binder.	X			
Fire Extinguishers in position, charged, and valid inspection endorsement.	X			
Electrical Plug Receptacles, Light Switches and Fixtures in Good Condition. Any doubt, item to be Red-Tagged and P.O.P. Electricians to be called to make repairs.	X			
Extension cords ARE NOT to be used in place of permanant wiring. Move item needing electircity closer to plug outlet, or have P.O.P. install plug outlet where needed.	X			
Proper Restricting Device on Air Hoses	X			

Comments:

Gearlocker Inspection

Date Feb 4-2008

Performed By C. Buswell / M. Horton

	Yes	No	Remarks/Action required	Date Corrected
Housekeeping - Clean, orderly, no slip/trip hazards, no clutter atop benches, clear exits. Clear in front of, and around, electrical breaker panels.	✓			
Welding Equipment - Components of equipment appear in good order, Oxy/Acetylene cylinders are chained and properly capped.	✓			
Power Equipment/Tools - Protective guards in place and serviceable. Cords secure in tool and plug end, no fraying. **All tools, both hand and power, to be removed from service if not in safe condition.**	✓			
Emergency/First Aid Supplies - Inventory at level to restock boxes at all elevators. A first aid box stowage diagram available.	✓			
Personal Protective Equipment available	✓			
Posted Numbers for Emergencies	✓			
Posted Number for Used Oil Disposal and Copy of the Spill Prevention and Response Plan kept in M.S.D.S. binder.	✓			
M.S.D.S. Binder is Up to Date. Shop foreman knows location of binder.	✓			
Fire Extinguishers in position, charged, and valid inspection endorsement.	✓			
Electrical Plug Receptacles, Light Switches and Fixtures in Good Condition. Any doubt, item to be Red-Tagged and P.O.P. Electricians to be called to make repairs.	✓			
Extension cords ARE NOT to be used in place of permanant wiring. Move item needing electircity closer to plug outlet, or have P.O.P. install plug outlet where needed.	✓			
Proper Restricting Device on Air Hoses	✓			

Comments:

Gearlocker Inspection

Date Jan 5, 2008

Performed By C. Buswell - D. Ellett

	Yes	No	Remarks/Action required	Date Corrected
Housekeeping - Clean, orderly, no slip/trip hazards, no clutter atop benches, clear exits. Clear in front of, and around, electrical breaker panels.	✓			
Welding Equipment - Components of equipment appear in good order, Oxy/Acetylene cylinders are chained and properly capped.	✓			
Power Equipment/Tools - Protective guards in place and serviceable. Cords secure in tool and plug end, no fraying. **All tools, both hand and power, to be removed from service if not in safe condition.**	✓			
Emergency/First Aid Supplies - Inventory at level to restock boxes at all elevators. A first aid box stowage diagram available.	✓			
Personal Protective Equipment available	✓			
Posted Numbers for Emergencies	✓			
Posted Number for Used Oil Disposal and Copy of the Spill Prevention and Response Plan kept in M.S.D.S. binder.	✓			
M.S.D.S. Binder is Up to Date. Shop foreman knows location of binder.	✓			
Fire Extinguishers in position, charged, and valid inspection endorsement.	✓			
Electrical Plug Receptacles, Light Switches and Fixtures in Good Condition. Any doubt, item to be Red-Tagged and P.O.P. Electricians to be called to make repairs.	✓			
Extension cords ARE NOT to be used in place of permanant wiring. Move item needing electircity closer to plug outlet, or have P.O.P. install plug outlet where needed.	✓			
Proper Restricting Device on Air Hoses	✓			

Comments:

State Fire Marshal

Oregon State Fire Marshal's

Hazardous Substance Information Survey

CITY OF

PORTLAND, OREGON

PORTLAND FIRE & RESCUE

Erik Sten, Commissioner of Public Works
David S. Sprando, Chief
1300 SE Gideon Street
Portland, Oregon 97202-2419
(503) 823-3700
FAX (503) 823-3969

August 22, 2007

ROGERS TERMINAL & SHIPPING
11040 N LOMBARD ST
PORTLAND, OR 97203

Re: **11040 N LOMBARD ST -- ROGERS TERMINAL & SHIPPING**
Facility ID: **37333 37352 42538**

On August 21, 2007, an inspector from this office conducted a fire prevention inspection at the above address. Your copy of the inspection report is enclosed.

If you have any questions regarding this matter, please contact me, weekdays at (503) 823-3780.

Sincerely,

/s/Raymond Pratt
Raymond Pratt
Fire Inspector

RP

Enclosure: Inspection Report

CITY OF PORTLAND
BUREAU OF FIRE, RESCUE AND EMERGENCY SERVICES
FIRE PREVENTION DIVISION
1300 SE GIDEON STREET
PORTLAND, OREGON 97202-2419
PHONE (503) 823-3700 FAX (503) 823-3969 BILLING (503) 823-4415

FIRE INSPECTION REPORT

Facility #: 37333

Building Name: ROGERS TERMINAL & SHIPPING/BLDG # 310

Business Name: ROGERS TERMINAL & SHIPPING

Business Address: 11040 N LOMBARD ST

VIOLATION(S) MUST BE CORRECTED **IMMEDIATELY**. A $20 FINE WILL BE ASSESSED FOR EACH COMMON VIOLATION* FOUND DURING THE INITIAL INSPECTION.

Type	Date	Viol Code	Description	Abate Date	Comments
R	08/21/2007				NO HAZARDS NOTED ON THIS DATE.

Facility #: 42538

Building Name: ROGERS TERMINAL & SHIPPING/PLYWOOD STORAGE

Business Name: ROGERS TERMINAL & SHIPPING

Business Address: 11040 N LOMBARD ST

Type	Date	Viol Code	Description	Abate Date	Comments
R	08/21/2007				NO HAZARDS NOTED ON THIS DATE.

A Reinspection will be made **on or after** 09/30/2007 to determine compliance. If uncorrected violations remain at the first reinspection you will be assessed a fine of $100 plus $100.00 per violation. If uncorrected violations remain at the second reinspection, you will be assessed a fine of $200 plus $100.00 per violation. If violations remain at the third and subsequent reinspections you will be assessed a fine of $400 plus $100.00 per violation and your case will be referred to the Code Hearings Officer. **Each Building with unabated hazards is considered an inspection.**

to ROGERS TERMINAL & SHIPPING / (503) 285-1479

BUS. OWNER/AGENT NAME & PHONE

by PRATT, RAYMOND / (503) 823-3780

FIRE INSPECTOR

A bill summarizing the fees associated with this inspection will be mailed to you.

08/22/2007

CARG003751

Due Date: November 01, 2008

Facility ID Number: 021286

2008
OREGON STATE FIRE MARSHAL
HAZARDOUS SUBSTANCE INFORMATION SURVEY

Mailed - 9-22-2008 p.m.

SECTION A **HAZARDOUS SUBSTANCE PRESENCE** Check the correct box to the left.

- ❑ YES ❑ NO 1. Were hazardous substances present at this site in reportable quantities during this survey period?
- ❑ YES ❑ NO 2. Were Extremely Hazardous Substances (EHS) present at this site at or above the threshold planning quantities during this survey period?
- ❑ YES ❑ NO 3. Is this facility subject to the reporting requirements of Section 112(r) of the Clean Air Act?
- ❑ YES ❑ NO 4. Is this facility subject to the Process Safety Management (PSM) substance requirements of OR-OSHA?

SECTION B **DEMOGRAPHIC DATA** Cross off the old or incorrect information and type or print changes or additions in the shaded areas.

1. NAICS CODE 1: **488320** DEFINITION: **MARINE CARGO HANDLING**
2. NAICS CODE 2: DEFINITION:
3. BUSINESS ACTIVITY AT THIS SITE: **STEVEDORING**
4. BUSINESS NAME: **ROGERS TERMINAL & SHIPPING**
5. DEPT OR DIV: **DIV OF CARGILL**
6. OWNER/CEO/REG AGENT: **ARTHUR HAYES SENIOR VP**
7. SEND TO ATTENTION OF: **CORBY BUSWELL**
8. E-MAIL ADDRESS: **CORBY_BUSWELL@ROGERSTERMINAL.COM**
9. SITE ADDRESS: **TERM 4 FT OF N LOMBAR**

   CITY: **PORTLAND**
   COUNTY: **MULTNOMAH**
   STATE: **OR** ZIP CODE: **97217**

10. MAILING ADDRESS: **1750 NW NAITO PKWY STE 120**

    CITY: **PORTLAND**
    STATE: **OR** ZIP CODE: **97209**

11. BUSINESS PHONE: **503-285-1479**
12. DUN & BRADSTREET #:
13. NUMBER OF EMPLOYEES AT THIS SITE: **1**
14. EMERGENCY CONTACT PERSON: **CORBY BUSWELL**
15. EMERGENCY CONTACT PHONES: DAY: **503-221-7960** NIGHT: **503-236-4971**
16. RESPONSIBLE FIRE DEPARTMENT: **PORTLAND BUREAU OF F&R&EMS**
17. WRITTEN EMERGENCY PLAN? IF YES, WHERE AT SITE: ❑ YES ☒ NO
18. AUTOMATIC FIRE SUPPRESSION SYSTEM PRESENT? ☒ YES ❑ NO
19. ARE STORAGE BUILDINGS/TANKS/AREAS PLACARDED ACCORDING TO NFPA 704? ❑ YES ☒ NO
20. ARE OTHER TYPES OF PLACARDS USED? ❑ YES ☒ NO

CORBY BUSWELL
ROGERS TERMINAL & SHIPPING
DIV OF CARGILL
1750 NW NAITO PKWY STE 120
PORTLAND, OR 97209

SECTION C **PERSON COMPLETING FORM**

Signature Required:
I certify that the information provided is true and accurate to the best of my knowledge. This person will be contacted to answer any questions needing clarification.

1. PRINT NAME: Corby Buswell
2. SIGNATURE (required): Corby C. Buswell
3. DATE: 9-22-08 PHONE: 503-221-7960 EXT: —

For office use only: R F DE C

Retain a copy of this survey at this facility for 3 years.

Return survey to: OSFM Survey Processing Unit, 4760 Portland Rd NE, Salem, OR 97305

3284

CARG003752

Chemical Form

2008

OREGON STATE FIRE MARSHAL

Hazardous Substance Information Survey

Facility ID Numbe 021286

SECTION D Cross off the old or incorrect information and type or print changes or additions in the [bracketed] area.

Common Name or Trade Name: **ACETYLENE**

Hazardous Ingredient: **ACETYLENE**

No Longer Reportable	112R	EHS	PSM	1-Pure 2-Mixture	Physical State Use Table I	Units of Measure Use Table II	Avg Amt Code Use Table III	Max Amt Code Use Table III	Amt IN Code Use Table III	Amt OUT Code Use Table III	Days On Site 3 digits	Storage Code Use Table IV & V	Hazard Class Table VI	UN/NA if known	EPA Pesticide Registration No:	CAS No. if known
					3	3	04	10	04	00	365	L 2 4	2.1 / 6.3	1001		74862

LOCATION

Delete	In/Out	Building	Floor	Area	Room	Quadrant	Loc Max Use Table II
	I	MAIN GEAR LOCKR	1	MAIN SHOP	SHOP	SW	10

Common Name or Trade Name: **ARGON**

Hazardous Ingredient: **ARGON**

No Longer Reportable	112R	EHS	PSM	1-Pure 2-Mixture	Physical State Use Table I	Units of Measure Use Table II	Avg Amt Code Use Table III	Max Amt Code Use Table III	Amt IN Code Use Table III	Amt OUT Code Use Table III	Days On Site 3 digits	Storage Code Use Table IV & V	Hazard Class Table VI	UN/NA if known	EPA Pesticide Registration No:	CAS No. if known
					3	3	04	04	04	00	365	L 2 4	6.3 / 2.2	1006		7440371

ATION

Delete	In/Out	Building	Floor	Area	Room	Quadrant	Loc Max Use Table III
	I	MAIN GEAR LOCKR	1	MAIN SHOP	SHOP	SW	04

Common Name or Trade Name: **ARGON/CARBON DIOXIDE MIXTURE**

Hazardous Ingredient: **ARGON**

No Longer Reportable	112R	EHS	PSM	1-Pure 2-Mixture	Physical State Use Table I	Units of Measure Use Table II	Avg Amt Code Use Table III	Max Amt Code Use Table III	Amt IN Code Use Table III	Amt OUT Code Use Table III	Days On Site 3 digits	Storage Code Use Table IV & V	Hazard Class Table VI	UN/NA if known	EPA Pesticide Registration No:	CAS No. if known
				2	3	3	04	04	04	00	365	L 2 4	2.2 / 6.3	1956		7440371

LOCATION

Delete	In/Out	Building	Floor	Area	Room	Quadrant	Loc Max Use Table III
	I	MAIN GEAR LOCKR	1	MAIN SHOP	SHOP	SW	04

3285

CARG003753

Chemical Form

2008
OREGON STATE FIRE MARSHAL
Hazardous Substance Information Survey

Facility ID Number 021286

SECTION D Cross off the old or incorrect information and type or print changes or additions in the [bracketed] area.

Common Name or Trade Name: **MOTOR OIL**

Hazardous Ingredient: **PETROLEUM HYDROCARBONS**

☐ No Longer Reportable
☐ 112R
☐ EHS
☐ PSM
☒ 1-Pure 2-Mixture

Physical State Use Table I	Units of Measure Use Table II	Avg Amt Code Use Table III	Max Amt Code Use Table III	Amt IN Code Use Table III	Amt OUT Code Use Table III	Days On Site 3 digits	Storage Code Use Table IV & V	Hazard Class Table VI	UN/NA if known	EPA Pesticide Registration No: / CAS No. if known
							D 1 4	4.5		
2	2	01	01	01	00	365	E 1 4	6.4	1270	64742547

LOCATION

Delete	In/Out	Building	Floor	Area	Room	Quadrant	Loc Max Use Table III
☐	I	MAIN GEAR LOCKR	1	MAIN SHOP	SHOP	SE	01
☐							
☐							

Common Name or Trade Name: **OXYGEN**

Hazardous Ingredient: **OXYGEN**

☐ No Longer Reportable
☐ 112R
☐ EHS
☐ PSM
☒ 1-Pure 2-Mixture

Physical State Use Table I	Units of Measure Use Table II	Avg Amt Code Use Table III	Max Amt Code Use Table III	Amt IN Code Use Table III	Amt OUT Code Use Table III	Days On Site 3 digits	Storage Code Use Table IV & V	Hazard Class Table VI	UN/NA if known	EPA Pesticide Registration No: / CAS No. if known
							L 2 4	5.1		
3	3	20	20	20	00	365		2.2	1072	7782447

LOCATION

Delete	In/Out	Building	Floor	Area	Room	Quadrant	Loc Max Use Table III
☐	I	MAIN GEAR LOCKR	1	MAIN SHOP	SHOP	SW	20
☐							
☐							

Common Name or Trade Name: **PROPANE**

Hazardous Ingredient: **PROPANE**

☐ No Longer Reportable
☐ 112R
☐ EHS
☐ PSM
☒ 1-Pure 2-Mixture

Physical State Use Table I	Units of Measure Use Table II	Avg Amt Code Use Table III	Max Amt Code Use Table III	Amt IN Code Use Table III	Amt OUT Code Use Table III	Days On Site 3 digits	Storage Code Use Table IV & V	Hazard Class Table VI	UN/NA if known	EPA Pesticide Registration No: / CAS No. if known
							L 2 4	6.3		
2	2	01	01	01	00	365		2.1	1075	74986

LOCATION

Delete	In/Out	Building	Floor	Area	Room	Quadrant	Loc Max Use Table III
☐	I	MAIN GEAR LOCKR	1	MAIN SHOP	SHOP	SW	01
☐							

RETAIN A COPY OF THIS SURVEY FOR 3 YEARS AT THIS FACILITY

Due Date: November 03, 2007

2007

Facility ID Number: 021286

OREGON STATE FIRE MARSHAL
HAZARDOUS SUBSTANCE INFORMATION SURVEY

Cross off the old or incorrect information and type or print changes or additions in the [bracketed] areas.

SECTION A HAZARDOUS SUBSTANCE PRESENCE Check the correct box to the left.

- ☐ YES ☒ NO 1. Were there hazardous substances present at this site in reportable quantities during this survey period?
- ☐ YES ☒ NO 2. Were Extremely Hazardous Substances (EHS) present at this site at or above the threshold planning quantities during this survey period?
- ☐ YES ☒ NO 3. Is this facility subject to the reporting requirements of Section 112(r) of the Clean Air Act?
- ☐ YES ☒ NO 4. Is this facility subject to the Process Safety Management (PSM) requirements of OR-OSHA?

SECTION B DEMOGRAPHIC DATA Complete, correct or add information in the [bracketed] areas.

Mailed 08-06-2007 pmc

1. NAICS CODE 1: 488320 DEFINITION: MARINE CARGO HANDLING
2. NAICS CODE 2: DEFINITION:
3. BUSINESS ACTIVITY AT THIS SITE: STEVEDORING
4. DUN & BRADSTREET #:
5. OWNER/CEO/REG AGENT: ARTHUR HAYES SENIOR VP
6. SEND TO ATTENTION OF: CORBY BUSWELL
7. E-MAIL ADDRESS: corby_buswell@rogersterminal.com
8. BUSINESS NAME: ROGERS TERMINAL & SHIPPING
9. DEPT OR DIV: DIV OF CARGILL
10. SITE ADDRESS: TERM 4 FT OF N LOMBAR
    CITY: PORTLAND
    COUNTY: MULTNOMAH
    STATE: OR ZIP CODE: 97217
11. MAILING ADDRESS: 1750 NW NAITO PKWY STE 120
    CITY: PORTLAND
    COUNTY: MULTNOMAH
    STATE: OR ZIP CODE: 97209
12. BUSINESS PHONE: 503-285-1479
13. NUMBER OF EMPLOYEES AT THIS SITE: 1
14. EMERGENCY ASSISTANCE CONTACT PERSON FOR THIS SITE: CORBY BUSWELL
15. EMERGENCY CONTACT PHONES: DAY: 503-221-7960 NIGHT: 503-236-4971
16. RESPONSIBLE FIRE DEPARTMENT: PORTLAND BUREAU OF F&R&EMS

SPECIAL FIRE DEPARTMENT INFORMATION This section is for information the fire service needs to know in case of an emergency.

- 17. ☐ YES ☒ NO WRITTEN EMERGENCY PLAN. IF YES, WHERE AT SITE: _____
- 18. ☐ YES ☒ NO AUTOMATIC FIRE SUPPRESSION SYSTEM PRESENT; e.g., sprinklered, halon system, etc.
- 19. ☐ YES ☒ NO ARE STORAGE BUILDINGS/TANKS/AREAS PLACARDED ACCORDING TO NFPA 704?
- 20. ☐ YES ☒ NO ARE OTHER TYPES OF PLACARDS USED?

SECTION C PERSON COMPLETING FORM

Signature required: I certify that the information provided is true and accurate to the best of my knowledge. This person will be contacted to answer any questions needing clarification.

1. PRINT NAME: Corby Buswell
2. SIGNATURE: Corby Buswell
3. Date: 06 Sept 07 Phone: 503-221-7960 Ext: _____

CORBY BUSWELL
ROGERS TERMINAL & SHIPPING
DIV OF CARGILL
1750 NW NAITO PKWY STE 120
PORTLAND, OR 97209

For Office Use Only

CARG003755

Chemical Form

2007
OREGON STATE FIRE MARSHAL
Hazardous Substance Information Survey

Facility ID Number 021286

SECTION D Cross off the old or incorrect information and type or print changes or additions in the [bracketed] area.

Common Name or Trade Name: **ACETYLENE**

Hazardous Ingredient: **ACETYLENE**

No Longer Reportable	Physical State Use Table I	Units of Measure Use Table II	Avg Amt Code Use Table III	Max Amt Code Use Table III	Amt IN Code Use Table III	Amt OUT Code Use Table III	Days On Site 3 digits	Storage Code Use Table IV & V	Hazard Class Table VI	UN/NA if known	EPA Pesticide Registration No:
112R								L 2 4	2.1		
EHS											CAS No. if known
PSM	3	3	04	10	04	00	365		6.3	1001	74862
[1] 1-Pure 2-Mixture											

LOCATION

Delete	In/Out	Building	Floor	Area	Room	Quadrant	Loc Max Use Table III
	I	MAIN GEAR LOCKR	1	MAIN SHOP	SHOP	SW	10

Common Name or Trade Name: **ARGON**

Hazardous Ingredient: **ARGON**

No Longer Reportable	Physical State Use Table I	Units of Measure Use Table II	Avg Amt Code Use Table III	Max Amt Code Use Table III	Amt IN Code Use Table III	Amt OUT Code Use Table III	Days On Site 3 digits	Storage Code Use Table IV & V	Hazard Class Table VI	UN/NA if known	EPA Pesticide Registration No:
112R								L 2 4	2.2		
EHS											CAS No. if known
PSM	3	3	04	04	04	00	365		6.3	1006	7440371
[1] 1-Pure 2-Mixture											

LOCATION

Delete	In/Out	Building	Floor	Area	Room	Quadrant	Loc Max Use Table III
	I	MAIN GEAR LOCKR	1	MAIN SHOP	SHOP	SW	04

Common Name or Trade Name: **ARGON/CARBON DIOXIDE MIXTURE**

Hazardous Ingredient: **ARGON**

No Longer Reportable	Physical State Use Table I	Units of Measure Use Table II	Avg Amt Code Use Table III	Max Amt Code Use Table III	Amt IN Code Use Table III	Amt OUT Code Use Table III	Days On Site 3 digits	Storage Code Use Table IV & V	Hazard Class Table VI	UN/NA if known	EPA Pesticide Registration No:
112R								L 2 4	2.2		
EHS											CAS No. if known
PSM	3	3	04	04	04	00	365		6.3	1956	7440371
[2] 1-Pure 2-Mixture											

LOCATION

Delete	In/Out	Building	Floor	Area	Room	Quadrant	Loc Max Use Table III
	I	MAIN GEAR LOCKR	1	MAIN SHOP	SHOP	SW	04

Chemical Form

2007
OREGON STATE FIRE MARSHAL
Hazardous Substance Information Survey

Facility ID Number 021286

SECTION D Cross off the old or incorrect information and type or print changes or additions in the [bracketed] area.

Common Name or Trade Name: **MOTOR OIL**

Hazardous Ingredient: **PETROLEUM HYDROCARBONS**

	Physical State Use Table I	Units of Measure Use Table II	Avg Amt Code Use Table III	Max Amt Code Use Table III	Amt IN Code Use Table III	Amt OUT Code Use Table III	Days On Site 3 digits	Storage Code Use Table IV & V	Hazard Class Table VI	UN/NA if known	EPA Pesticide Registration No: / CAS No. if known
								D 1 4	4.5		
☐ No Longer Reportable ☐ 112R ☐ EHS ☐ PSM [2] 1-Pure 2-Mixture	2	2	~~03~~ 01	~~03~~ 01	~~03~~ 01	~~03~~ 0	365	E 1 4	6.4	1270	64742547

LOCATION

Delete	In/Out	Building	Floor	Area	Room	Quadrant	Loc Max Use Table III
☐	I	MAIN GEAR LOCKR	1	MAIN SHOP	SHOP	SE	03
☐							
☐							

Common Name or Trade Name: **OXYGEN**

Hazardous Ingredient: **OXYGEN**

	Physical State Use Table I	Units of Measure Use Table II	Avg Amt Code Use Table III	Max Amt Code Use Table III	Amt IN Code Use Table III	Amt OUT Code Use Table III	Days On Site 3 digits	Storage Code Use Table IV & V	Hazard Class Table VI	UN/NA if known	EPA Pesticide Registration No: / CAS No. if known
								L 2 4	5.1		
☐ No Longer Reportable ☐ 112R ☐ EHS ☐ PSM [1] 1-Pure 2-Mixture	3	3	20	20	20	00	365		2.2	1072	7782447

LOCATION

Delete	In/Out	Building	Floor	Area	Room	Quadrant	Loc Max Use Table III
☐	I	MAIN GEAR LOCKR	1	MAIN SHOP	SHOP	SW	20
☐							
☐							

Common Name or Trade Name: **PROPANE**

Hazardous Ingredient: **PROPANE**

	Physical State Use Table I	Units of Measure Use Table II	Avg Amt Code Use Table III	Max Amt Code Use Table III	Amt IN Code Use Table III	Amt OUT Code Use Table III	Days On Site 3 digits	Storage Code Use Table IV & V	Hazard Class Table VI	UN/NA if known	EPA Pesticide Registration No: / CAS No. if known
								L 2 4	2.1		
☐ No Longer Reportable ☐ 112R ☐ EHS ☐ PSM [1] 1-Pure 2-Mixture	2	2	01	01	01	00	365		6.3	1075	74986

LOCATION

Delete	In/Out	Building	Floor	Area	Room	Quadrant	Loc Max Use Table III
☐	I	MAIN GEAR LOCKR	1	MAIN SHOP	SHOP	SW	01
☐							
☐							

RETAIN A COPY OF THIS SURVEY FOR 3 YEARS AT THIS FACILITY

Due Date: October 31, 20[illegible]

2006

Facility ID Number: 021286

OREGON STATE FIRE MARSHAL
HAZARDOUS SUBSTANCE INFORMATION SURVEY

Cross off the old or incorrect information and type or print changes or additions in the [bracketed] areas.

SECTION A HAZARDOUS SUBSTANCE PRESENCE Check the correct box to the left.

☐ YES ☐ NO 1. Were there hazardous substances present at this site in reportable quantities during this survey period?
☐ YES ☐ NO 2. Were Extremely Hazardous Substances (EHS) present at this site at or above the threshold planning quantities during this survey period?
☐ YES ☐ NO 3. Is this facility subject to the reporting requirements of Section 112(r) of the Clean Air Act?
☐ YES ☐ NO 4. Is this facility subject to the Process Safety Management (PSM) requirements of OR-OSHA?

mailed- 10-27-2006 pm.

SECTION B DEMOGRAPHIC DATA Complete, correct or add information in the [bracketed] areas.

1. NAICS CODE 1: 488320 DEFINITION: MARINE CARGO HANDLING
2. NAICS CODE 2: DEFINITION:
3. BUSINESS ACTIVITY AT THIS SITE: STEVEDORING
4. DUN & BRADSTREET #:
5. OWNER/CEO/REG AGENT: ARTHUR HAYES SENIOR VP
6. SEND TO ATTENTION OF: CORBY BUSWELL
7. E-MAIL ADDRESS: corby_buswell@rogersterminal.com
8. BUSINESS NAME: ROGERS TERMINAL & SHIPPING
9. DEPT OR DIV: DIV OF CARGILL
10. SITE ADDRESS: TERM 4 FT OF N LOMBAR
PORTLAND
COUNTY: MULTNOMAH
STATE: OR ZIP CODE: 97217
11. MAILING ADDRESS: 1750 NW NAITO PKWY STE 120
CITY: PORTLAND
COUNTY: MULTNOMAH
STATE: OR ZIP CODE: 97209
12. BUSINESS PHONE: 503-285-1479
13. NUMBER OF EMPLOYEES AT THIS SITE: 1
14. EMERGENCY ASSISTANCE CONTACT PERSON FOR THIS SITE: CORBY BUSWELL
15. EMERGENCY CONTACT PHONES: DAY: 503-221-7960 NIGHT: 503-236-4971
16. RESPONSIBLE FIRE DEPARTMENT: PORTLAND BUREAU OF F&R&EMS

SPECIAL FIRE DEPARTMENT INFORMATION This section is for information the fire service needs to know in case of an emergency.

17. ☐ YES ☒ NO WRITTEN EMERGENCY PLAN. IF YES, WHERE AT SITE: _____
18. ☐ YES ☒ NO AUTOMATIC FIRE SUPPRESSION SYSTEM PRESENT; e.g., sprinklered, halon system, etc.
19. ☐ YES ☒ NO ARE STORAGE BUILDINGS/TANKS/AREAS PLACARDED ACCORDING TO NFPA 704?
20. ☐ YES ☒ NO ARE OTHER TYPES OF PLACARDS USED?

SECTION C PERSON COMPLETING FORM

Signature required: I certify that the information provided is true and accurate to the best of my knowledge. This person will be contacted to answer any questions needing clarification.

1. PRINT NAME: Corby Buswell
2. SIGNATURE: Corby Buswell
3. Date: 10/27/2006 Phone: 503-221-7960 Ext: —

CORBY BUSWELL
ROGERS TERMINAL & SHIPPING
DIV OF CARGILL
1750 NW NAITO PKWY STE 120
PORTLAND, OR 97209

CARG003758

Chemical Form

2006
OREGON STATE FIRE MARSHAL
Hazardous Substance Information Survey

Facility ID Number 021286

SECTION D Cross off the old or incorrect information and type or print changes or additions in the [bracketed] area.

ion Name or Trade Name: **ACETYLENE**

Hazardous Ingredient: **ACETYLENE**

No Longer Reportable	Physical State Use Table I	Units of Measure Use Table II	Avg Amt Code Use Table III	Max Amt Code Use Table III	Amt IN Code Use Table III	Amt OUT Code Use Table III	No Days On Site 3 digits	Storage Code Use Table IV & V	Hazard Class Table VI	UN/NA if known	EPA Pesticide Registration No:	CAS No. if known
112R								L 2 4	2.1			
EHS												
PSM	3	3	04	10	04	00	365		6.3	1001		74862
1 1-Pure 2-Mixture												

LOCATION

Delete	In/Out	Building	Floor	Area	Room	Quadrant	Loc Max Use Table III
	I	MAIN GEAR LOCKR	1	MAIN SHOP	SHOP	SW	10
Delete							
Delete							

Common Name or Trade Name: **ARGON**

Hazardous Ingredient: **ARGON**

No Longer Reportable	Physical State Use Table I	Units of Measure Use Table II	Avg Amt Code Use Table III	Max Amt Code Use Table III	Amt IN Code Use Table III	Amt OUT Code Use Table III	No Days On Site 3 digits	Storage Code Use Table IV & V	Hazard Class Table VI	UN/NA if known	EPA Pesticide Registration No:	CAS No. if known
112R								L 2 4	2.2			
EHS												
PSM	3	3	04	04	04	00	365		6.3	1006		7440371
1-Pure 2-Mixture												

LOCATION

Delete	In/Out	Building	Floor	Area	Room	Quadrant	Loc Max Use Table III
	I	MAIN GEAR LOCKR	1	MAIN SHOP	SHOP	SW	04
Delete							
Delete							

Common Name or Trade Name: **ARGON/CARBON DIOXIDE MIXTURE**

Hazardous Ingredient: **ARGON**

No Longer Reportable	Physical State Use Table I	Units of Measure Use Table II	Avg Amt Code Use Table III	Max Amt Code Use Table III	Amt IN Code Use Table III	Amt OUT Code Use Table III	No Days On Site 3 digits	Storage Code Use Table IV & V	Hazard Class Table VI	UN/NA if known	EPA Pesticide Registration No:	CAS No. if known
112R								L 2 4	2.2			
EHS												
PSM	3	3	04	04	04	00	365			1956		7440371
2 1-Pure 2-Mixture												

LOCATION

elete	In/Out	Building	Floor	Area	Room	Quadrant	Loc Max Use Table III
	I	MAIN GEAR LOCKR	1	MAIN SHOP	SHOP	SW	04
elete							

CARG003759

Chemical Form

2006
OREGON STATE FIRE MARSHAL
Hazardous Substance Information Survey

Facility ID Number 021286

SECTION D Cross off the old or incorrect information and type or print changes or additions in the [bracketed] area.

on Name or Trade Name: **MOTOR OIL**

Hazardous Ingredient: **PETROLEUM HYDROCARBONS**

	Physical State Use Table I	Units of Measure Use Table II	Avg Amt Code Use Table III	Max Amt Code Use Table III	Amt IN Code Use Table III	Amt OUT Code Use Table III	No Days On Site 3 digits	Storage Code Use Table IV & V	Hazard Class Table VI	UN/NA if known	EPA Pesticide Registration No:	CAS No. if known
☐ No Longer Reportable								D 1 4	4.5			
☐ 112R												
☐ EHS												
☐ PSM												
☒ 1-Pure 2-Mixture	2	2	03	03	03	03	365	E 1 4	6.4	1270		64742547

LOCATION

	In/Out	Building	Floor	Area	Room	Quadrant	Loc Max Use Table III
Delete ☐	I	MAIN GEAR LOCKR	1	MAIN SHOP	SHOP	SE	03
Delete ☐							
Delete ☐							

+/- 4 Tanks Per Year x 250 Cu ft. = 1000 cu ft.
Code 20 is correct

Common Name or Trade Name: **OXYGEN**

Hazardous Ingredient: **OXYGEN**

Oxygen

	Physical State Use Table I	Units of Measure Use Table II	Avg Amt Code Use Table III	Max Amt Code Use Table III	Amt IN Code Use Table III	Amt OUT Code Use Table III	No Days On Site 3 digits	Storage Code Use Table IV & V	Hazard Class Table VI	UN/NA if known	EPA Pesticide Registration No:	CAS No. if known
☐ No Longer Reportable								L 2 4	5.1			
☐ 112R												
☐ EHS												
☐ PSM												
☐ 1-Pure 2-Mixture	3	3	20	20	20	00	365		2.2	1072		7782447

LOCATION

	In/Out	Building	Floor	Area	Room	Quadrant	Loc Max Use Table III
Delete ☐	I	MAIN GEAR LOCKR	1	MAIN SHOP	SHOP	SW	20
Delete ☐							
Delete ☐							

Common Name or Trade Name: **PROPANE**

Hazardous Ingredient: **PROPANE**

	Physical State Use Table I	Units of Measure Use Table II	Avg Amt Code Use Table III	Max Amt Code Use Table III	Amt IN Code Use Table III	Amt OUT Code Use Table III	No Days On Site 3 digits	Storage Code Use Table IV & V	Hazard Class Table VI	UN/NA if known	EPA Pesticide Registration No:	CAS No. if known
☐ No Longer Reportable								L 2 4	2.1			
☐ 112R												
☐ EHS												
☐ PSM												
☐ 1-Pure 2-Mixture	2	2	01	01	01	00	365		6.3	1075		74986

LOCATION

	In/Out	Building	Floor	Area	Room	Quadrant	Loc Max Use Table III
Delete ☐	I	MAIN GEAR LOCKR	1	MAIN SHOP	SHOP	SW	01
Delete ☐							
☐							

RETAIN A COPY OF THIS SURVEY FOR 3 YEARS Gearlocker

Due Date: October 31, 200

Facility ID Number: 021286

2005
OREGON STATE FIRE MARSHAL
HAZARDOUS SUBSTANCE INFORMATION SURVEY

Cross off the old or incorrect information and type or print changes or additions in the [bracketed] areas.

SECTION A HAZARDOUS SUBSTANCE PRESENCE Check the correct box to the left.

- ☐ YES ☒ NO 1. Were there hazardous substances present at this site in reportable quantities during this survey period?
- ☐ YES ☒ NO 2. Were Extremely Hazardous Substances (EHS) present at this site at or above the threshold planning quantities during this survey period
- ☐ YES ☒ NO 3. Is this facility subject to the reporting requirements of Section 112(r) of the Clean Air Act?
- ☐ YES ☒ NO 4. Is this facility subject to the Process Safety Management (PSM) requirements of OR-OSHA?

SECTION B DEMOGRAPHIC DATA Complete, correct or add information in the [bracketed] areas.

1. NAICS CODE 1: 488320 DEFINITION: MARINE CARGO HANDLING
2. NAICS CODE 2: DEFINITION:
3. BUSINESS ACTIVITY AT THIS SITE: STEVEDORING
4. DUN & BRADSTREET #:
5. OWNER/CEO/REG AGENT: ARTHUR HAYES SENIOR VP
6. SEND TO ATTENTION OF: CORBY BUSWELL
7. E-MAIL ADDRESS: corby_buswell@rogersterminal.com
8. BUSINESS NAME: ROGERS TERMINAL & SHIPPING
9. DEPT OR DIV: DIV OF CARGILL
10. SITE ADDRESS: TERM 4 FT OF N LOMBAR
    CITY: PORTLAND
    COUNTY: MULTNOMAH
    STATE: OR ZIP CODE: 97217
11. MAILING ADDRESS: 1750 NW NAITO PKWY STE 12
    CITY: PORTLAND
    COUNTY: MULTNOMAH
    STATE: OR ZIP CODE: 97209
12. BUSINESS PHONE: 503-285-1479
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14. EMERGENCY ASSISTANCE CONTACT PERSON FOR THIS SITE: CORBY BUSWELL
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19. ☐ YES ☒ NO ARE STORAGE BUILDINGS/TANKS/AREAS PLACARDED ACCORDING TO NFPA 704?
20. ☐ YES ☒ NO ARE OTHER TYPES OF PLACARDS USED?

SECTION C PERSON COMPLETING FORM

Signature required: I certify that the information provided is true and accurate to the best of my knowledge. This person will be contacted to answer any questions needing clarification.

1. PRINT NAME: Corby Buswell
2. SIGNATURE: Corby Buswell
3. Date: 9/20/05 Phone: 503-221-7960 Ext: —

CORBY BUSWELL
ROGERS TERMINAL & SHIPPING
DIV OF CARGILL
1750 NW NAITO PKWY STE 120
PORTLAND, OR 97209

For office use only: R____ F____ DE____/____ C____

CARG003761

Chemical Form

2005
REGON STATE FIRE MARSHAL
Hazardous Substance Information Survey

Facility ID Number
021286

SECTION D Cross off the old or incorrect information and type or print changes or additions in the [bracketed] area.

Common Name or Trade Name: **ACETYLENE**

Hazardous Ingredient: **ACETYLENE**

No Longer Reportable	Physical State Use Table I	Units of Measure Use Table II	Avg Amt Code Use Table III	Max Amt Code Use Table III	Amt IN Code Use Table III	Amt OUT Code Use Table III	No Days On Site 3 digits	Storage Code Use Table IV & V	Hazard Class Table VI	UN/NA if known	EPA Pesticide Registration No:
☐ 112R								L ~~1~~ 4	2.1		
☐ EHS								[ ][2][ ]	[ ]		CAS No. if known
☐ PSM	3	3	04	10	04	00	365		6.3	1001	74862
☑ 1-Pure 2-Mixture [ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ][ ][ ]	[ ]	[ ]	[ ]

LOCATION

Delete	In/Out	Building	Floor	Area	Room	Quadrant	Loc Max Use Table III
☐	I	MAIN GEAR LOCKR	1	MAIN SHOP	SHOP	SW	~~04~~ 10
Delete ☐							
Delete ☐							

Common Name or Trade Name: **ARGON**

Hazardous Ingredient: **ARGON**

+/- 4 Tanks Per Year x 250 Cu ft. = 1000 cu ft.
Code 20 is correct
Oxygen

No Longer Reportable	Physical State Use Table I	Units of Measure Use Table II	Avg Amt Code Use Table III	Max Amt Code Use Table III	Amt IN Code Use Table III	Amt OUT Code Use Table III	No Days On Site	Storage Code	Hazard Class	UN/NA	EPA Pesticide Registration No:
☐ 112R											
☐ EHS											CAS No. if known
☐ PSM	3	3	04	04	~~10~~ 04	00				006	7440371
☐ 1-Pure 2-Mixture [ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]				[ ]	[ ]

LOCATION

Delete	In/Out	Building	Floor	Area	Room	Quadrant	Loc Max Use Table III
☐	I	MAIN GEAR LOCKR	1	MAIN SHOP	SHOP	SW	04
Delete ☐							
Delete ☐							

Common Name or Trade Name: **ARGON/CARBON DIOXIDE MIXTURE**

Hazardous Ingredient: **ARGON**

No Longer Reportable	Physical State Use Table I	Units of Measure Use Table II	Avg Amt Code Use Table III	Max Amt Code Use Table III	Amt IN Code Use Table III	Amt OUT Code Use Table III	No Days On Site 3 digits	Storage Code Use Table IV & V	Hazard Class Table VI	UN/NA if known	EPA Pesticide Registration No:
☐ 112R								L ~~1~~ 4	2.2		
☐ EHS								[ ][2][ ]	[ ]		CAS No. if known
☐ PSM	3	3	04	04	04	00	365			1956	7440371
☑ 1-Pure 2-Mixture [ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ][ ][ ]	[ ]	[ ]	[ ]

LOCATION

Delete	In/Out	Building	Floor	Area	Room	Quadrant	Loc Max Use Table III
☐	I	MAIN GEAR LOCKR	1	MAIN SHOP	SHOP	SW	04
Delete ☐							

Chemical Form

2005
REGON STATE FIRE MARSHAL
Hazardous Substance Information Survey

Facility ID Number 021286

SECTION D Cross off the old or incorrect information and type or print changes or additions in the [bracketed] area.

Common Name or Trade Name: **MOTOR OIL**

Hazardous Ingredient: **PETROLEUM HYDROCARBONS**

No Longer Reportable / 112R / EHS / PSM / 1-Pure 2-Mixture	Physical State Use Table I	Units of Measure Use Table II	Avg Amt Code Use Table III	Max Amt Code Use Table III	Amt IN Code Use Table III	Amt OUT Code Use Table III	No Days On Site 3 digits	Storage Code Use Table IV & V	Hazard Class Table VI	UN/NA if known	EPA Pesticide Registration No:	CAS No. if known
[ ]	2	2	~~04~~ 03	~~04~~ 03	~~04~~ 03	~~04~~ 03	365	D 1 4	4.5	1270		64742547
2								E 1 4	6.4			

LOCATION

Delete	In/Out	Building	Floor	Area	Room	Quadrant	Loc Max Use Table III
[ ]	I	MAIN GEAR LOCKR	1	MAIN SHOP	SHOP	SE	~~04~~ 03
[ ]							
[ ]							

Common Name or Trade Name: **OXYGEN**

Hazardous Ingredient: **OXYGEN**

No Longer Reportable / 112R / EHS / PSM / Pure Mixture	Physical State Use Table I	Units of Measure Use Table II	Avg Amt Code Use Table III	Max Amt Code Use Table III	Amt IN Code Use Table III	Amt OUT Code Use Table III	No Days On Site 3 digits	Storage Code Use Table IV & V	Hazard Class Table VI	UN/NA if known	EPA Pesticide Registration No:	CAS No. if known
[ ]	3	3	20	20	20	00	365	L ~~1~~ 4	2.2	1072		7782447
								2	5.1			

LOCATION

Delete	In/Out	Building	Floor	Area	Room	Quadrant	Loc Max Use Table III
[ ]	I	MAIN GEAR LOCKR	1	MAIN SHOP	SHOP	SW	20
[ ]							
[ ]							

Common Name or Trade Name: **PROPANE**

Hazardous Ingredient: **PROPANE**

No Longer Reportable / 112R / EHS / PSM / 1-Pure 2-Mixture	Physical State Use Table I	Units of Measure Use Table II	Avg Amt Code Use Table III	Max Amt Code Use Table III	Amt IN Code Use Table III	Amt OUT Code Use Table III	No Days On Site 3 digits	Storage Code Use Table IV & V	Hazard Class Table VI	UN/NA if known	EPA Pesticide Registration No:	CAS No. if known
[ ]	2	2	01	01	01	00	365	L ~~1~~ 4	2.1	1075		74986
1								2	6.3			

LOCATION

Delete	In/Out	Building	Floor	Area	Room	Quadrant	Loc Max Use Table III
[ ]	I	MAIN GEAR LOCKR	1	MAIN SHOP	SHOP	SW	01
[ ]							
[ ]							

DEPARTMENT OF STATE POLICE
OFFICE OF STATE FIRE MARSHAL

FACILITY NAME Rogers General Shipping

DATE 9-21-05 FACILITY I.D. 021286 INITIALS DB

SURVEY YEAR 2005 HAZARDOUS SUBSTANCE INFORMATION SURVEY

The enclosed Hazardous Substance Information Survey is being returned for missing required information. **Please complete ALL highlighted areas on the survey or it will be returned to you.**

PLEASE REPLY PROMPTLY

The due date for this information is located in the upper left hand corner of the enclosed survey. Please provide the information and re-submit the survey by that due date. *If this due date has passed*, complete and submit the survey immediately to minimize compliance actions.

Refer to the instruction booklet you received with the original survey mailing to identify what information is needed. Survey tables are provided on the back of this page to assist you. For additional assistance, call the Hazardous Substance Information Hotline at 503-378-6835.

IMPORTANT NOTICE: Failure to return the COMPLETED survey by the date indicated on the survey may result in the issuance of a "Notice of Non-Compliance" and possible penalty assessment.

INFORMATION MISSING FROM SURVEY ✓

Section A ☐ Are Hazardous Substances Present ☐ Are Extremely Hazardous Substances Present

☐ Are 112R Substances Present ☐ Are PSM Substances Present

You answered **NO** to #1 & **YES** to #2, 3 or 4. If the correct answer to #2, 3 or 4 is **YES**, the answer to #1 must also be **YES**. Refer to the Instruction Booklet or call the Hazardous Substance Information Hotline - 503-378-6835.

☐ You have indicated in Section A, #1, there are hazardous substances present at this site. If there are reportable quantities present, Section D (enclosed) must be completed. If there are no reportable quantities, please correct Section A, #1.

Section B
- ☐ NAICS Code
- ☐ Business Activity (type of business)
- ☐ Owner/CEO/Reg Agent Name
- ☐ Email Address (or write NONE)
- ☐ Business Name
- ☐ Site Address
- ☐ Business Phone
- ☐ Number of Employees
- ☐ Emergency Assistance Contact Persons Name
- ☐ Emergency Contact Phone Numbers ☐ Day ☐ Night
- ☐ Responsible Fire Department
- ☐ Special Fire Department Information ☐#17 ☐#18 ☐#19 ☐#20

Section C ☐ Signature ☐ Date ☐ Phone # ☐ Ext. (if applicable)

Section D
- ☐ Common Name or Trade Name
- ☐ Hazardous Ingredient
- ☐ Physical State
- ☐ Unit of Measure
- ☐ Average Amount
- ☑ Maximum Amount
- ☐ Amount In
- ☐ Amount Out
- ☐ Number of Days On Site
- ☐ Storage Codes
- ☑ The "Avg Amt Code" and "Loc Max" code can not exceed the "Max Amt Code."

☐ Storage Location **(NOTE: At least one location must be provided for each substance. See example on reverse)**

☐ In/Out ☐ Building ☐ Floor ☐ Area ☐ Room ☐ Quadrant ☑ Loc Max Amt

Comments: **Highlighted information on the survey is required**

For assistance, call the Hazardous Substance Information Hotline at 503-378-6835

COMPANY COPY

CARG003764

RETAIN A COPY OF THIS SURVEY FOR 3 YEARS

Due Date: October 31, 200

Facility ID Number: 021286

2004
OREGON STATE FIRE MARSHAL
HAZARDOUS SUBSTANCE INFORMATION SURVEY

Cross off the old or incorrect information and type or print changes or additions in the [bracketed] areas.

SECTION A HAZARDOUS SUBSTANCE PRESENCE Check the correct box to the left.

- ☐ YES ☒ NO 1. Were there hazardous substances present at this site in reportable quantities during this survey period?
- ☐ YES ☒ NO 2. Were Extremely Hazardous Substances (EHS) present at this site at or above the threshold planning quantities during this survey period?
- ☐ YES ☒ NO 3. Is this facility subject to the reporting requirements of Section 112(r) of the Clean Air Act?
- ☐ YES ☒ NO 4. Is this facility subject to the Process Safety Management (PSM) requirements of OR-OSHA?

Mailed Thurs Oct 7, 2004

SECTION B DEMOGRAPHIC DATA Complete, correct or add information in the [bracketed] areas.

Changes highlighted on this copy.

1. NAICS CODE 1: 488320 DEFINITION: MARINE CARGO HANDLING
2. NAICS CODE 2: DEFINITION:
3. BUSINESS ACTIVITY AT THIS SITE: STEVEDORING
4. DUN & BRADSTREET #:
5. OWNER/CEO/REG AGENT: Arthur Hayes, Senior V.P.
6. SEND TO ATTENTION OF: CORBY BUSWELL
7. E-MAIL ADDRESS: CORBY_BUSWELL@ROGERSTERMINAL.COM → use Lower case letters on all
8. BUSINESS NAME: ROGERS TERMINAL & SHIPPING
9. DEPT OR DIV: DIV OF CARGILL
10. SITE ADDRESS: TERM 4 FT OF N LOMBAR
    CITY: PORTLAND
    COUNTY: MULTNOMAH
    STATE: OR ZIP CODE: 97217
11. MAILING ADDRESS: ~~1650~~ NW NAITO PKWY STE 120
    1750
    CITY: PORTLAND
    COUNTY: MULTNOMAH
    STATE: OR ZIP CODE: 97209
12. BUSINESS PHONE: 503-285-1479
13. NUMBER OF EMPLOYEES AT THIS SITE: 1
14. EMERGENCY ASSISTANCE CONTACT PERSON FOR THIS SITE: CORBY BUSWELL
15. EMERGENCY CONTACT PHONES: DAY: 503-221-7960 NIGHT: 503-236-4971
16. RESPONSIBLE FIRE DEPARTMENT: PORTLAND FIRE BUREAU

SPECIAL FIRE DEPARTMENT INFORMATION This section is for information the fire service needs to know in case of an emergency.

7. ☐ YES ☒ NO WRITTEN EMERGENCY PLAN. IF YES, WHERE AT SITE: _____
8. ☐ YES ☒ NO AUTOMATIC FIRE SUPPRESSION SYSTEM PRESENT; e.g., sprinklered, halon system, etc.
9. ☐ YES ☒ NO ARE STORAGE BUILDINGS/TANKS/AREAS PLACARDED ACCORDING TO NFPA 704?
10. ☐ YES ☒ NO ARE OTHER TYPES OF PLACARDS USED?

SECTION C PERSON COMPLETING FORM

Signature required: I certify that the information provided is true and accurate to the best of my knowledge. This person will be contacted to answer any questions needing clarification.

1. PRINT NAME: Corby C. Buswell
2. SIGNATURE: Corby C. Buswell
3. Date: 07 Oct 04 Phone: 503-221-7960 Ext: —

CORBY BUSWELL
ROGERS TERMINAL & SHIPPING
DIV OF CARGILL
1650 NW NAITO PKWY STE 120
PORTLAND, OR 97209

For office use only: R DE

CARG003765

Chemical Form

2004 OREGON STATE FIRE MARSHAL
Hazardous Substance Information Survey

Facility ID Number 021286

SECTION D Cross off the old or incorrect information and type or print changes or additions in the [bracketed] area.

Common Name or Trade Name: **MOTOR OIL** [ ]

Hazardous Ingredient: **PETROLEUM HYDROCARBONS** [ ]

☐ No Longer Reportable
☐ 112R
☐ EHS
☐ PSM
☒ 1-Pure 2-Mixture [ ]

Physical State Use Table I	Units of Measure Use Table II	Avg Amt Code Use Table III	Max Amt Code Use Table III	Amt IN Code Use Table III	Amt OUT Code Use Table III	No Days On Site 3 digits	Storage Code Use Table IV & V	Hazard Class Table VI	UN/NA if known	EPA Pesticide Registration No:	CAS No. if known
2	2	04	04	04	04	365	D 1 4	4.5 / 6.4	1270		64742547

LOCATION

Delete	In/Out	Building	Floor	Area	Room	Quadrant	Loc Max Use Table III
☐	I	MAINGEARLCKRSHP	1	MAIN SHOP	SHOP	SE	04
Delete ☐							
Delete ☐							

Common Name or Trade Name: **OXYGEN** [ ]

Hazardous Ingredient: **OXYGEN** [ ]

+/- 4 Tanks Per Year x 250 Cu ft. = 1000 cu ft.
Code 20 is correct
Oxygen

☐ No Longer Reportable
☐ 112R
☐ EHS
☐ PSM
☒ 1-Pure [ ]

Physical State Use Table I	Units of Measure Use Table II	Avg Amt Code Use Table III	Max Amt Code Use Table III	Amt IN Code Use Table III	Amt OUT Code Use Table III	No Days On Site 3 digits	PA Pesticide Registration No:	CAS No. if known
3	3	~~20~~	~~20~~	20	00	365		7782447

Quantity less but still Code 20

LOCATION

Delete	In/Out	Building	Floor	Area	Room	Quadrant	Loc Max Use Table III
☐	I	MAINGEARLCKRSHP	1	MAIN SHOP	SHOP	SW	10 ~~20~~
☒	I	~~WEST WHSE~~	~~1~~	~~MAIN~~	~~STORAGE~~	~~C~~	~~11~~
Delete ☐							
Delete ☐							

Common Name or Trade Name: **PROPANE** [ ]

Hazardous Ingredient: **PROPANE** [ ]

☐ No Longer Reportable
☐ 112R
☐ EHS
☐ PSM
☒ 1-Pure 2-Mixture [ ]

Physical State Use Table I	Units of Measure Use Table II	Avg Amt Code Use Table III	Max Amt Code Use Table III	Amt IN Code Use Table III	Amt OUT Code Use Table III	No Days On Site 3 digits	Storage Code Use Table IV & V	Hazard Class Table VI	UN/NA if known	EPA Pesticide Registration No:	CAS No. if known
2	2	~~04~~ 01	~~04~~ 01	~~04~~ 01	00	365	L 1 4	2.1 / 6.3	1075		74986

LOCATION

Delete	In/Out	Building	Floor	Area	Room	Quadrant	Loc Max Use Table III
☐	I	MAINGEARLCKRSHP	1	MAIN SHOP	SHOP	SW	~~04~~ 01
Delete							
Delete ☐							

Chemical Form

2004 OREGON STATE FIRE MARSHAL
Hazardous Substance Information Survey

Facility ID Number 021286

SECTION D Cross off the old or incorrect information and type or print changes or additions in the [bracketed] area.

Common Name or Trade Name: **ACETYLENE** [ ]

Hazardous Ingredient: **ACETYLENE** [ ]

	Physical State Use Table I	Units of Measure Use Table II	Avg Amt Code Use Table III	Max Amt Code Use Table III	Amt IN Code Use Table III	Amt OUT Code Use Table III	No Days On Site 3 digits	Storage Code Use Table IV & V	Hazard Class Table VI	UN/NA if known	EPA Pesticide Registration No:	CAS No. if known
☐ No Longer Reportable								L 1 4	2.1			
☐ 112R												
☐ EHS												
☐ PSM												
1 1-Pure 2-Mixture	3	3	~~10~~ 04	~~10~~ 04	10	00	365		6.3	1001		74862

LOCATION ↳ Per Bob at 503-373-1540 x297 · 11-17-04 1115 hrs.

Delete	In/Out	Building	Floor	Area	Room	Quadrant	Loc Max Use Table III
☐	I	MAINGEARLCKRSHP	1	MAIN SHOP	SHOP	SW	04
☒	I	~~WEST WHSE~~	~~1~~	~~MAIN~~	~~STORAGE~~	C	04
☐							
☐							

Common Name or Trade Name: **ARGON** [ ]

Hazardous Ingredient: **ARGON** [ ]

	Physical State Use Table I	Units of Measure Use Table II	Avg Amt Code Use Table III	Max Amt Code Use Table III	Amt IN Code Use Table III	Amt OUT Code Use Table III	No Days On Site 3 digits	Storage Code Use Table IV & V	Hazard Class Table VI	UN/NA if known	EPA Pesticide Registration No:	CAS No. if known
☐ No Longer Reportable								L 1 4	2.2			
☐ 112R												
☐ EHS												
1-Pure 2-Mixture	3	3	~~10~~ 04	~~10~~ 04	10	00	365			1006		7440371

LOCATION

Delete	In/Out	Building	Floor	Area	Room	Quadrant	Loc Max Use Table III
☐	I	MAINGEARLCKRSHP	1	MAIN SHOP	SHOP	SW	04
☐							
☐							

Common Name or Trade Name: **ARGON/CARBON DIOXIDE MIXTURE** [ ]

Hazardous Ingredient: **ARGON** [ ]

	Physical State Use Table I	Units of Measure Use Table II	Avg Amt Code Use Table III	Max Amt Code Use Table III	Amt IN Code Use Table III	Amt OUT Code Use Table III	No Days On Site 3 digits	Storage Code Use Table IV & V	Hazard Class Table VI	UN/NA if known	EPA Pesticide Registration No:	CAS No. if known
☐ No Longer Reportable								L 1 4	2.2			
☐ 112R												
☐ EHS												
☐ PSM												
2 1-Pure 2-Mixture	3	3	04	04	04	00	365			1956		7440371

LOCATION

Delete	In/Out	Building	Floor	Area	Room	Quadrant	Loc Max Use Table III
☐	I	MAINGEARLCKRSHP	1	MAIN SHOP	SHOP	SW	04
☐							
☐							

MSDS Review Log

MSDS Review Log

MSDS Review Log

Review Date	By	Additions/Deletions?
14 April 05	C. Buswell	All Current!
05 May 06	C. Buswell	Great!
08 Aug 06	C. Buswell	No additions.
02 Nov 2006	C. Buswell	OK
Jan 2007	C. Buswell	OK
June 4, 2007	C. Buswell	All Well!
Jan. 4, 2008	C. Buswell	All OK!
Mar 3, 2008	C. Buswell	No Additions.
June 2, 2008	C. Buswell	No Add ins
Sept 2 2008	C. Buswell	Nothing New

MSDS Review Log

Review Date	By	Additions/Deletions?

MSDS's

MSDS's

- Automotive
- Fuels – Gas & Diesel
- Lubricants – Oil & Grease
- Misc.
- NAPA Labeled Products
- Paint & Related
- Welding
  - Abrasives - Grinding wheels
    - Discs.

MSDS - Automotive

CARG003774

Automotive

Automotive

AAF44-12,32

MATERIAL SAFETY DATA SHEET

Radiator Specialty Company

1900 WILKINSON BLVD. CHARLOTTE, NC 28208 (704) 377-6555
POISON INFORMATION & EMERGENCY: 303-623-5716

MATERIAL SAFETY DATA SHEET
May be used to comply with OSHA's Hazard Communication Standard 29 CFR 1910.1200. Standard must be consulted for specific requirements.

US DEPARTMENT OF LABOR
Occupational Safety and Health Administration. (Non-Mandatory Form) Form Approved OMB No. 1218-0072

SECTION I GENERAL INFORMATION

PRODUCT NAME	AUTOPRIDE DOT 3 STANDARD HEAVY DUTY BRAKE FLUID
PART NUMBER	AAF44- 12, -32,

NOTE: Blank spaces are not permitted. If any item is not applicable or no information is available, the space must be marked to indicate that.

SECTION II HAZARDOUS INGREDIENTS/IDENTITY INFORMATION

COMPONENT	WT%	C.A.S. NO.	TLV (ACGIH-------OSHA-------)
Polyglycol Ethers and Ployglycols	92-99	PROPRIETARY	NDA

NOTE: Our suppliers consider product composition to be proprietary. Reportable components have been reported to EPA chemical substance inventory as required by TSCA.

Comments:

Components not identified are non-hazardous according to 29 CFR 1910.1200

SECTION III PHYSICAL/CHEMICAL CHARACTERISTICS

Specific Gravity (H_2O=1)	0.95 - 1.0	**pH**	8.5 - 10
Solubility in Water	Soluble	**Solubility in Solvent**	Alcohols
Flash Point (Method) - F^0	300^0F. (COC)	**% Volatiles By Wt.**	Not known
Melting Point - F^0	Does not apply	**Boiling Point - F^0**	410 - 450
Vapor Pressure (mmHg)	Not known	**Vapor Density (Air=1)**	Not known
Evaporation Rate (Butyl Acetate=1)	Not known		
Appearance and Odor	Light, yellow to dark amber liquid with mild odor.		

SECTION IV FIRE AND EXPLOSION HAZARD DATA

EXTINGUISHING MEDIA:

Water Fog	XX	**Foam**	XX	**CO_2**	**XX**	**Dry Chemical**	XX

SPECIAL FIRE FIGHTING PROCEDURES. Wear self-contained, positive pressure breathing apparatus and protective clothes.

UNUSUAL FIRE AND EXPLOSION HAZARDS None known

SECTION V REACTIVITY DATA

Stable XX	**Unstable**	**Corrosive** NO	**Hazardous Polymerization? Yes**	**No** XX

Incompatibilities Oxidizing agents and acids.

Hazardous Decomposition or Byproducts Fire: normal products of combustion: carbon dioxide, carbon monoxide and smoke

SECTION VI HEALTH HAZARD INFORMATION

Recommended TLV of Product Not established.

EYE CONTACT Irritant	**SKIN CONTACT** Mildly irritating on prolonged exposure.
INHALATION Excessive inhalation of mist or fumes may cause irritation of mucous membranes.	**INGESTION** HARMFUL IF SWALLOWED! May cause stomach cramps, nausea, diarrhea.
OTHER N/A	

SECTION VII EMERGENCY AND FIRST AID PROCEDURES

EYE CONTACT Flush with water for at least 15 minutes thoroughly while lifting eyelids. If adverse effects persist. consult a physician immediately.

SKIN CONTACT Wash with soap and water thoroughly. Remove contaminated clothing and launder before re-use.

INHALATION Move to fresh air

INGESTION Drink two glasses of water. INDUCE VOMITING! Get medical attention. Consult a physician immediately.

SECTION VIII SPECIAL PROTECTION INFORMATION

	CONSUMER	BULK HANDLING (Prolonged Exposure)
RESPIRATORY PROTECTION	N/A	Not required.
VENTILATION	Use with adequate ventilation .	General
EYE PROTECTION	N/A	Goggles.
PROTECTIVE CLOTHING	N/A	Not required.

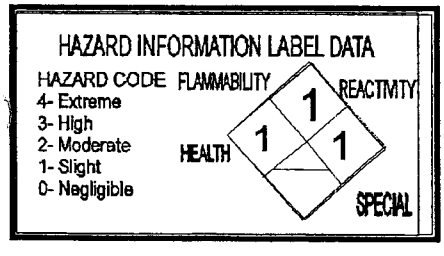
SECTION IX PRECAUTIONS FOR SAFE HANDLING AND USE

SPILL OR LEAK PROCEDURE Observing health hazards described above, remove ignition sources, ventilate area, flush with water and wipe up with rags. Transfer to waste drum.

WASTE DISPOSAL METHOD ***Dispose of in accordance with all applicable government laws and regulations.***

STORAGE AND HANDLING PRECAUTIONS Store away from acids, ignition sources and oxidizing agents.

OTHER PRECAUTIONS WEARING CONTACT LENSES IS INADVISABLE! KEEP AWAY FROM CHILDREN AND ANIMALS!



Supersedes NEW 1997 **OSHA Revised** NEW 1997

Title HORST ABRAMOWSKI

While Radiator Specialty Company believes this data is accurate as of the revision date, we make no warranty with respect to the data and we expressly disclaim all liability for reliance thereon. The data is offered solely for information, investigation, and verification.

Automotive

CRC MATERIAL SAFETY DATA SHEET- SILOO

CRC Industries, Inc. • 885 Louis Drive • Warminster, PA 18974 • (215) 674-4300

FOR 24 HR. EMERGENCY INFORMATION CALL CHEMTREC 1-800-424-9300

PRODUCT NAME BRAKLEEN AEROSOL

#-MSDS05089
PRODUCT-05089,05089T,05089P,05089TP

1. INGREDIENTS	CAS #	ACGIH TLV	OSHA PEL	OTHER LIMITS	%
Tetrachloroethylene	127-18-4	25 ppm	25 ppm		65-75
Petroleum Distillate	8052-41-3	NA	NA	100 ppm	< 10
Toluene	108-88-3	100 ppm	100 ppm		25-35
Carbon Dioxide	124-38-9	5000 ppm	10000		< 10

2. PHYSICAL DATA : (without propellant)

Specific Gravity : 1.282
Vapor Pressure : ND
% Volatile : 100
Boiling Point : Est. 231 F
Evaporation Rate : Rapid
Freezing Point : ND
Vapor Density : ND
Appearance and Odor:
pH: NA
Colorless liquid, irritating odor at high concentrations.

Solubility : Slight solubility in water- good solvent for many organic materials.

3. FIRE AND EXPLOSION DATA

Flashpoint : 40 F Method : TCC
Flammable Limits : ND LEL: UEL:
Extinguishing Media : Water fog
Unusual Hazards : Aerosol cans may burst above 120 F.

4. REACTIVITY AND STABILITY

Stability : Stable
Hazardous decomposition products
: Thermal- Hydrogen chloride, chlorine, and some phosgene-avoid open flames, arcs or high temps.

Materials to avoid : Avoid storage in aluminum containers or contact with aluminum and/or zinc powders.

5. PROTECTION INFORMATION

Ventilation : Adequate to prevent the accumulation of vapors.

Respiratory : Positive pressure self-contained breathing apparatus if accumulation of vapors is suspected.

Gloves : Solvent resistant Eye & Face : Safety glasses

Other Protective Equipment: Apron and boots if possibility of body contact exists.

MATERIAL SAFETY DATA SHEET

PRODUCT NAME : BRAKLEEN AEROSOL #-MSDS05089
PRODUCTS-05089,05089T,05089P,05089TP
MANUFACTURED BY : CRC INDUSTRIES, INC. PHONE (215) 674-4300
885 LOUIS DRIVE, WARMINSTER, PA. 18974

6. HEALTH HAZARD DATA

Primary Routes of Entry : Inhalation, Skin

Signs and Symptoms of Exposure

1. Acute Overexposure:
   Eyes & skin - irritation. Inhalation - causes central nervous system effects, headaches, dizziness, drunkeness, irritaion to upper respiratory tract, unconsciousness and irregular heartbeats.
2. Chronic overexposure: Repeated overexposures have caused liver and kidney effects in laboratory animals.

Medical Conditions Generally Aggravated by Exposure
: Risk to your health depends on the level and duration of exposure.

Chemical Listed as Carcinogen : Yes National Toxicology Program
or Potential Carcinogen : Yes IARC Monographs
: Yes OSHA

Emergency and First Aid Procedures :(If symptoms persist, call a physician)

1. Inhalation : Remove to fresh air. Apply artificial respiration if necessary.
2. Eyes : Flush with large amounts of water for 15 minutes.
3. Skin : Remove contaminated clothing. Wash exposed area with soap and water.
4. Ingestion : Do NOT induce vomiting- call a physician.

7. SPILL OR LEAK PROCEDURES

Precautions to be taken in Handling and Storage : Store in a cool, dry area.

Steps to be taken in case Material is released or spilled : Keep out of water supply. Ventilate area. Do not enter spill area without respirator. Dike area and pump into containers or use absorbent to pick up.

Waste Disposal : All used and unused Product should be disposed of in conformance with local, state and federal regulations.

8. SPECIAL PRECAUTIONS AND USE DIRECTIONS :

Avoid contact with skin. Avoid breathing of vapors. Vapors are heavier than air and will collect in low areas. If vapors are suspected in low areas, do not enter unless special breathing apparatus is used and an observer is present for assistance. Tetrachloroethylene is listed as a carcinogen.

9. NFPA HAZARD RATINGS Health:2 Flammability:3 Reactivity:0

10. SARA Information

This product contains the following chemicals that are subject to release reporting under Section 313 of SARA Title III.

Chemical Name	CAS-#	Percent
Tetrachloroethylene	127-18-4	65-75
Toluene	108-88-3	25-35

PREPARED BY: Adam Selisker ORIGINAL DATE or DATE OF REVISION: 10/16/97

Automotive

Part: 7651674 Line: BK Desc: COMPOUND

MATERIAL SAFETY DATA SHEET

Effective Date: none Revision Date: none

Balkamp Anti-Seize Lubricant (High Temp) .5PT

Code: LOC Page: 1

Section 1 - Product and Company Identification

PRODUCT NAME: Balkamp Anti-Seize Lubricant (High Temp) .5PT

MANUFACTURER'S NAME:
Loctite Corporation

Rocky Hill, CT 06067

EMERGENCY TELEPHONE NUMBER
(203)571-5100

MISCELLANEOUS INFORMATION

Section 2 - Hazardous Ingredients

Ingredients	CAS No.	%
Mineral oil	64742-52-5	40-50
COPPER*	7440-50-8	10-15
GAS OIL	64741-44-2	10-15
ALUMINUM	7429-90-5	5-10
Mineral oil, petroleum distillates	64742-53-6	0-10
Graphite	7782-42-5	1-3
Lithium soap	7620-77-1	1-3
SILICA, AMORPHOUS, precipitated	112926-00-8	1-3

* This component is listed as a SARA Section 313 Toxic Chemical.

Ingredients which have exposure limits

Exposure Limits (TWA) Ingredients	ACGIH (TLV)	OSHA (PEL)	OTHER
Mineral oil	5 mg/m3 mist	5 mg/m3 mist	5 mg/m3 mist
COPPER	1 mg/m3 dust	1 mg/m3 dust	None
GAS OIL	5mg/m3 TWA mist	5mg/m3 TWA mist	None
ALUMINUM	10 mg/m3 dust	15 mg/m3 dust 5 mg/m3 respir.	None
Mineral oil, petroleum distillates	5 mg/m3 mist	5 mg/m3 mist	None
Graphite	2.5 mg/m3 dust, respirable	2.5 mg/m3 dust, respirable	None
SILICA, AMORPHOUS, precipitated	10 mg/m3 TWA	6 mg/m3 TWA	None

Exposure Limits (STEL) Ingredients	ACGIH (TLV)	OSHA (PEL)
Mineral oil	10 mg/m3 mist	None
GAS OIL	10 mg/m3 mist	None
Mineral oil, petroleum distillates	10 mg/m3 mist	None

Part: 7651674 Line: BK Desc: COMPOUND

MATERIAL SAFETY DATA SHEET

Effective Date: none Revision Date: none

Balkamp Anti-Seize Lubricant (High Temp) .5PT

Code: LOC Page: 2

Section 3 - Hazards Indentification

Toxicity: May irritate eyes or skin. Vapors or direct contact may irriate or burn nose and throat. Swallowing may irritate digestive tract and cause nervous system depression. Prolonged skin contact with copper may cause sensitization dermatitis. Copper dusts and mists are eye and mucous membrane irritants and skin sensitizers. Swallowing copper compounds may cause vomiting and collapse. Target organs include respiratory system, nasal septum, skin, eyes, gastrointestinal system, kidneys, liver, and cardiovascular system.

Primary Routes of Entry: Ingestion, inhalation, skin and eye contact.

Signs and symptoms of Exposure: May cause skin or eye irritation with prolonged or repeated contact. Metal-fume fever, metallic taste, discoloration of skin or hair may indicate exposure to copper. Hemolysis, jaundice, anuria, hypotension, and convulsions may indicate acute copper poisoning.

Existing Conditions Aggravated by Exposure: Graphite powder: emphysema, asthma, and other respiratory problems.

Ingredients	Literature Referenced Target Organ and Other Health Effects	Carcinogen NTP	IARC	OSHA
Mineral oil	IRR	NO	NO	NO
COPPER	BLO CNS GAS IMM IRR KID LIV MUT SEN SKI	NO	NO	NO
GAS OIL	No Data	NO	NO	NO
ALUMINUM	IRR LUN	NO	NO	NO
Mineral oil, petroleum distillates	IRR	NO	NO	NO
Graphite	LUN	NO	NO	NO
Lithium soap	No Data	NO	NO	NO
SILICA, AMORPHOUS, precipitated	NUI	NO	NO	NO

Abbreviations

BLO Blood	CNS Central nervous system
GAS Gastrointestinal	IMM Immune system
IRR Irritant	KID Kidney
LIV Liver	LUN Lung
MUT Mutagen	NUI Nuisance dust
SEN Sensory	SKI Skin

MATERIAL SAFETY DATA SHEET

Effective Date: none Revision Date: none

Balkamp Anti-Seize Lubricant (High Temp) .5PT

Part: 7651674 Line: BK Desc: COMPOUND

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Section 4 - First Aid Measures1

1

Ingestion: Do not induce vomiting. Keep individual calm.1
Obtain medical attention.1

Inhalation: Oil mist: Remove to fresh air. If symptoms1
persist, obtain medical attention.1

Skin Contact: Flush with water.1

Eye Contact: Flush at least 15 minutes with water. Obtain1
medical attention.1

1

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Section 5 - Firefighting Measures1

1

Flash Point: None Method: Tag Closed Cup1

Recommended1
Extinguishing Agents: Carbon dioxide, foam, dry chemical1

Hazardous Products formed1
by Fire or Thermal Decomp Metal vapors, oxides of carbon, nitrogen, barium,1
zinc, sulfur; hydrogen sulfide.1

Unusual Fire or1
Explosion Hazards: None1

1

Explosive Limits:1
(% by volume in air)Lower 30% Aluminum metal1
1% Gas oil1
(% by volume in air)Upper Unknown Aluminum metal1
7% Gas oil1

1

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Section 6 - Environmental Release Measures1

1

Steps to be taken in case1
of spill or leak: Remove sources of ignition. Take up with an inert1
absorbent. Store in a closed container until1
disposal.1

1

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Section 7 - Handling and Storage1

1

Safe Storage: Keep away from sources of ignition and hot surfaces.1

1

(Contact Loctite Customer Service 1-800-243-4874 for shelf Life information)1

1

Handling: Keep away from eyes. Avoid prolonged skin contact.1
Avoid prolonged breathing of vapors.1

1

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Section 8 - Exposure Controls/Personal Protection1

1

Eyes: Safety glasses or goggles.1

Skin: Neoprene or oil resistant plastic gloves.1

Ventilation: Provide adequate local ventilation to maintain1
vapor concentration below TLV if misting of oil1
occurs or compound becomes dry.1

See Section 2 for Exposure Limits.1

1

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MATERIAL SAFETY DATA SHEET1

Effective Date: none Revision Date: none1

Balkamp Anti-Seize Lubricant (High Temp) .5PT1

Part: 7651674 Line: BK Desc: COMPOUND

==========1

Section 9 - Physical and Chemical Properties1

1

Appearance:	Grey grease1
Odor:	Petroleum1
Boiling Point:	More than 500 Deg. F1
pH:	Does not apply1
Solubility in Water:	Nil1
Specific Gravity	1.061
Volatile Organic Compound1 (EPA Method 24)	13.2%; 140 grams per liter1
Vapor Pressure:	Less than 5mm at 80 Deg. F1
Vapor Density:	Approximately 2.91
Evaportation Rate1 (Ether = 1)	Not available1

1

==========1

Section 10 - Stability and Reactivity1

1

Stability:	Stable1
Hazardous Polymerization:	Will not occur1
Incompatibility:	Strong oxidizers, alkalies, mineral acids,1 selected amines.1
Hazardous Decomposition1 Products (non-thermal):	Noxious carbon compounds, hydrogen.1

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Section 11 - Toxicological Information1

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See Section 3.1

1

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Section 12 - Ecological Information1

1

No data available1

1

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Section 13 - Disposal Considerations1

1

Recommended methods of1 disposal:	Incinerate following EPA and local regulations.1 Do not incinerate pressurized cans.1

1

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MATERIAL SAFETY DATA SHEET1

Effective Date: none Revision Date: none1

Balkamp Anti-Seize Lubricant (High Temp) .5PT1

Code: LOC Page: 51

==========1

Section 14 - Transport Information1

1

DOT (49 CFR 172)1

Domestic Ground Transport1

Proper Shipping Name:	Unrestricted1
Hazard Class or1 Division:	Unrestricted1
Identification Number:	None1

Marine Pollutant: None1

IATA1

Proper Shipping Name:	Unrestricted1
Class or Division:	Unrestricted1

Part: 7651674 Line: BK Desc: COMPOUND

1

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Section 15 - Regulatory Information1

1

CA Proposition 65: No Proposition 65 chemicals are known to be1
present.1

1

1

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Section 16 - Other Information1

1

Estimated NFPA(R) Code:1

Health Hazard:	11
Fire Hazard:	11
Reactivity Hazard:	11
Specific Hazard:	Does not apply1

1

Estimated HMIS(R) Code:1

Health Hazard:	11
Flammability Hazard:	11
Reactivity Hazards:	11
Personal Protection:	See Section 8.1

1

NFPA is a registered trademark of the National Fire Protection Assn.1
HMIS is a registered trademark ot the National Paint and Coatings1
Assn.1

1

Prepared By:	Stephen Repetto1
Title:	Research Chemist, Environmental Health & Safety1
Company:	Loctite Corp., 1001 Tr Br Cr, Rocky Hill CT 06067 1
(24hr.) Phone:	(860) 571-5100 1
Revision Date:	January 22, 1996 Revision: 0032 1

*** End of Report ***

Automotive

MATERIAL SAFETY DATA SHEET

tion 1: Product & Company Identification

Product Name: Heavy Duty Degreaser Aerosol
Product Number (s): 03095, 03095T, 83095

Manufactured By: CRC Industries, Inc. (215) 674-4300
885 Louis Drive, Warminster, PA 18974
24-Hour Emergency Information: CHEMTREC (800) 424-9300

Section 2: Composition/Information on Ingredients

Component	CAS NUMBER	ACGIH TLV	OSHA PEL	OTHER LIMITS	%
Trichloroethylene	79-01-6	50 ppm	50 ppm	NE	90-99
1,2 Butylene Oxide	106-88-7	NE	NE	NE	0.5
Carbon Dioxide	124-38-9	5000 ppm	10000 ppm	NE	1-10

Section 3: Hazards Identification

Emergency Overview

Appearance & Odor: Colorless liquid, irritating odor at high concentrations.

Warning: Vapor harmful. Contents under pressure

Potential Health Effects:

Inhalation: Headaches, dizziness, anesthesia, and unconsciousness.
Eyes: Irritation
Skin: Irritation
Ingestion: NA

Carcinogenicity: OSHA: No IARC: Yes NTP: No
Chronic Overexposure: Repeated overexposure may cause liver and kidney effects and dermatitis.
Medical Conditions Aggravated by Exposure: High levels of vapor (8000+ ppm) may cause cardiac arrthythmias.

Section 4: First Aid Measures

Inhalation: Remove to fresh air. Give artificial respiration if necessary.

Eyes: Flush with large amounts of water for 15 minutes.

Skin: Remove contaminated clothing and wash area with soap and water.

Ingestion: Call a physician. Do not induce vomiting.

tion 5: Fire-Fighting Measures

Flashpoint: None Method: TCC, COC, TOC LEL: 8.0 UEL: 44.8

CARG003785

Extinguishing Media:	Water fog
Hazardous Combustion Products:	Thermal - hydrogen chloride, chlorine, and phosgene
Fire-fighting Instructions:	Remove containers from fire area if possible. Use self-contained breathing apparatus for fire fighting. Aerosol cans may explode if heated above 120°F.

NFPA:	Health:	2	Flammability:	1	Reactivity:	0		
HMIS:	Health:	2	Flammability:	1	Reactivity:	0	PPE:	B

Section 6: Accidental Release Measures

Spill/Leak Procedures: Usually not a problem with aerosols. Area should be ventilated. Absorbent should be used to pick up excess material. All used and unused product should be disposed of in accordance with federal, state and local regulations.

Section 7: Handling and Storage

Handling Procedures: Store in a cool, dry area. Aerosol cans must be maintained below 120°F to prevent cans from exploding.

Section 8: Exposure Controls/Personal Protection

Engineering Controls: Adequate to prevent accumulation of vapors. Use mechanical means if necessary to maintain levels below the exposure limits. If working in a confined space, follow applicable OSHA regulations.

Respiratory: Use NIOSH/MSHA compliant respirators or self-contained breathing apparatus above exposure limits. Follow OSHA regulations 29 CFR 1910.134.

Protective Clothing/Equipment: Wear chemically protective gloves and safety glasses. Use a splash apron and boots if splashing occurs.

Section 9: Physical & Chemical Properties

Physical State:	Liquid	Appearance & Odor:	Colorless liquid, irritating odor at high concentrations
Specific Gravity:	1.46@70 °F	Boiling Point:	189°F
Freezing Point:	ND	Vapor Pressure:	60 mm @ 20 °F
Evaporation Rate:	fast	Vapor Density (air = 1)	4.55
pH:	NA	Solubility:	Slight solubility in water.
Volatile Organic Compounds:%:	97	g/L: 1400	lbs./gal: 11.66

Section 10: Stability and Reactivity

Stability:	Stable	Hazardous Polymerization: No
Chemical Incompatibilities:	Strong oxidizers.	
Materials to Avoid:	Avoid storing in aluminum containers or contact with aluminum powder or zinc powder.	
Hazardous Decomposition Products:	None	

Section 11: Toxicological Information

Long-term toxicological studies have not been conducted for this product. See Section 3 of this MSDS for acute symptoms of overexposure and carcinogenicity information.

CARG003786

Section 12: Ecological Information

Toxicity:	No data available.
Environmental Fate:	No data available for biodegradation.

Section 13: Disposal Considerations

Disposal: This material if discarded may be hazardous waste under U.S. EPA RCRA regulations. All disposal activities must comply with federal, state and local regulations. Contact your local or state environmental agency for specific rules. Do not dump into sewers, on the ground or into any body of water.

Section 14: Transportation Information

Shipping Name:	Consumer Commodity				
Hazard Class:	ORM-D	UN Number:	NA	Packing Group:	NA
Label:	NA	Placard:	NA		
Special Provisions:	NA				

Section 15: Regulatory Information

TSCA:	All components are either listed under TSCA or are exempt.	
SARA Title III:	Section 311/312:	Acute/Chronic
	Section 313*:	Trichloroethylene
CERCLA/Superfund (RQ):		100 lbs.
Extremely Hazardous Substances:		No
California Prop 65:		This product contains chemicals known to the State of California to cause cancer, birth defects and other reproductive harm.

* See section 2 for percentage

Section 16: Additional Information

Prepared By:	Michelle Milburn	Date:	September 22, 2003
Technical Information:	(800) 521-3168	CRC #:	458

This information is accurate to the best of CRC Industries' knowledge or obtained from sources believed by CRC to be accurate. Before using any product, read all warnings and directions on the label.

CAS:	Chemical Abstract Service	NA:	Not Applicable
ppm:	Parts per Million	ND:	Not Determined
TCC:	Tag Closed Cup	NE:	Not Established
LEL:	Lower Explosive Limit	g/L:	grams per Liter
UEL:	Upper Explosive Limit	lbs./gal:	pounds per gallon
PPE:	Personal Protection Equipment	RQ:	Reportable Quantity
COC:	Cleveland Open Cup	TOC:	Tag Open Cup

CARG003787

Automotive

Material Safety Data Sheet

LAWSON
PRODUCTS, INC.

Revision Date *28-Jan-2005*

1.CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product code	89153
Product name	Battery Cleaner & Acid Leak Detector
Recommended Use	Cleaner
Supplier	Lawson Products, Inc. 1666 East Touhy Avenue Des Plaines, IL 60018 (847)-827-9666
Emergency telephone number	(888) 426-4851

2. HAZARDS IDENTIFICATION

Emergency Overview
Flammable. Irritant.

Color Colorless **Odor** Solvent **Form** Aerosol

Aggravated Medical Conditions	None Known.
Principal Routes of Exposure	Inhalation. Eyes. Skin contact.

Potential health effects

Eyes	Irritation. Redness. Itching. Burning sensation.
Skin	Repeated or prolonged exposure may cause:. Skin Irritation. Redness. Itching. Burning sensation.
Inhalation	Repeated or prolonged exposure may cause the following effects. Headaches. Dizziness. Nausea. Upper respiratory tract irritation. Central nervous system effects. Loss of coordination. Extreme overexposure may cause. Possible unconsciousness. Death. Misuse by deliberately concentrating vapors and inhaling contents can be harmful or fatal.
Ingestion	May be harmful if swallowed.

3. COMPOSITION/INFORMATION ON INGREDIENTS

CARG003788

Chemical Name	CAS-No	Weight-%
Butane	106-97-8	1-5
Propane	74-98-6	5-10
Isopropyl Alcohol	67-63-0	5-10

4. FIRST AID MEASURES

Eye contact Flush with plenty of water for at least 15 minutes. Seek medical attention.

Skin contact Wash off immediately with soap and plenty of water. Remove and wash contaminated clothing before re-use.

Ingestion Do not induce vomiting. Immediate medical attention is required.

Inhalation Remove from exposure. Restore breathing. Keep warm and quiet. Consult a physician.

5. FIRE FIGHTING MEASURES

Flash point °C < -17
Flash point °F < 0
Method No information available

Autoignition temperature °C No data available
Autoignition temperature °F

Flammability Limits (% in Air)
Upper 9.5
Lower 1.9
Specific Information for Aerosol Products

Flame extension Unknown
Flashback Unknown

Suitable extinguishing media
Carbon dioxide (CO2). Dry chemical. Foam.

Extinguishing media which must NOT be used for safety reasons
No information available.

Special Fire-Fighting Procedures
Avoid breathing of vapors. Avoid skin and eye contact. Water spray may be ineffective. If water is used, fog nozzles are preferable. Water should be used to cool closed containers to prevent pressure build-up and possible autoignition or explosion when exposed to extreme heat.

Fire and Explosion Hazards
During emergency conditions, overexposure to decomposition products may cause a health hazard. Symptoms may not be immediately apparent. Obtain medical attention Water spray may be ineffective. If water is used, fog nozzles are preferable. Firefighters should wear NIOSH/MSHA approved (or equivalent) self-contained pressure-demand breathing apparatus and full protective clothing.

Sensitivity to shock
No information available.

Sensitivity to static discharge
No information available.

6. ACCIDENTAL RELEASE MEASURES

Methods for cleaning up
Eliminate all sources of ignition. Ventilate area to maintain exposure below permissible exposure limits. Soak up with inert absorbent material.

7. HANDLING AND STORAGE

Handling
Keep in a well-ventilated place. Turn off other sources of ignition prior to use and until all vapors have dissipated. Vapors may accumulate readily and may ignite explosively. Remove all sources of ignition. Keep away from open flame. Do not smoke. Check to make sure that all equipment is properly grounded and installed to satisfy electrical classification requirements. Contents under pressure. Do not puncture or incinerate. Heat from sunlight, radiators, stoves, hot water, and other heat sources could cause container to burst. Do not take internally. Keep out of reach of children.

Storage
Store in temperatures below 120 degrees F.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure limits

Chemical Name	OSHA PEL (TWA)	OSHA PEL (Ceiling)	ACGIH OEL (TWA)	ACGIH OEL (STEL)
Isopropyl Alcohol	400 ppm 980 mg/m³	-	200 ppm	400 ppm
Propane	1000 ppm 1800 mg/m³	-	1000 ppm listed under aliphatic hydrocarbon gases alkane C1-C4	-
Butane	800 ppm	-	1000 ppm listed under aliphatic hydrocarbon gases alkane C1-C4	-

Ventilation and Environmental Controls
Local: recommended. Adequate ventilation should be provided to keep exposure levels below current acceptable exposure limits. General: as necessary.

Hygiene measures
Wash hands before breaks and immediately after handling the product.

Personal protective equipment

Respiratory protection
If the exposure limits are exceeded, a NIOSH/MSHA approved respirator is recommended.

Hand protection
Gloves are not required in normal use. The following gloves are recommended for prolonged or repeated contact: . Chemical resistant gloves.

Eye protection
Wear safety glasses with side shields.

Skin and body protection
No information available

9. PHYSICAL AND CHEMICAL PROPERTIES

Form	Aerosol	**Color**	Colorless
Odor	Solvent	**Odor Threshold**	No information available
pH	7.0	**Specific Gravity**	0.93
Vapor pressure	No data available	**Vapor density**	>1 (air=1)
Evaporation Rate	>1 (ether = 1)	**VOC Content**	15.9 %
Water solubility	No data available	**Partition Coefficient (n-octanol/water)**	No data available
		Boiling point/range °C	-18 - 100
Boiling point/range °F	0 - 213	**Melting point/range °C**	No data available
Melting point/range °F	No data available	**Flash point °C**	< -17
Flash point °F	< 0		

10. STABILITY AND REACTIVITY

Stability
Stable.

Conditions to avoid
None known.

Materials to avoid
None.

Hazardous decomposition products
Carbon dioxide. Carbon monoxide.

Polymerization
Will not occur.

Synergistic Products
No information available.

11. TOXICOLOGICAL INFORMATION

Component Information

Chemical Name	LD50 (oral,rat)	LD50 (dermal,rat/rabbit)	LC50 (inhalation,rat)
Isopropyl Alcohol *67-63-0*	5045 mg/kg	12800 mg/kg	16000 mg/kg
Propane *74-98-6*	-	-	-
Butane *106-97-8*	-	-	658 g/m^3 680 g/m^3

Potential health effects

CARG003791

Sensitization
No information available.

Mutagenic effects
No information available.

Reproductive toxicity
No information available

Carcinogenic effects
See table below

Chronic toxicity
No information available.

Teratogenic effects
No information available

Target Organ Effects
No information available

Chemical Name	ACGIH OEL - Carcinogens	IARC	NTP - Known Carcinogens	NTP - Suspected Human Carcinogens	OSHA RTK Carcinogens
Isopropyl Alcohol	A4 - Not Classifiable as a Human Carcinogen	Group 1	-	-	Listed
Propane	-	-	-	-	-
Butane	-	-	-	-	-

Specific Hazards Hexane has been reported to affect the central nervous system.

12. ECOLOGICAL INFORMATION

Isopropyl Alcohol

Microtox Data

Photobacterium phosphoreum EC50=35390 mg/L (5 min)

Ecotoxicity effects
No information available

13. DISPOSAL CONSIDERATIONS

Waste from residues / unused products
Dispose in accordance with federal, state, and local regulations.

Disposal Information
As supplied, this product is a RCRA Hazardous Waste . Waste must be tested for ignitability to determine EPA hazardous waste numbers. Do not puncture or incinerate. Depressurize before disposal.

14. TRANSPORT INFORMATION

DOT

Consumer commodity (Propane,Isopropyl Alcohol),ORM-D,

TDG

AEROSOLS(Propane,Isopropyl Alcohol), Class 2.1,UN1950,PG

IMDG/IMO

Aerosols(Propane,Isopropyl Alcohol),UN1950,PG

IATA

Aerosols, flammable(Propane,Isopropyl Alcohol),UN1950
Hazard Class 2.1

MEX

UN1950 Aerosols(Propane,Isopropyl Alcohol),2.2,

15. REGULATORY INFORMATION

Chemical Name	US EPA SARA 313 Emission Reporting
Isopropyl Alcohol	Listed

State Regulations

Chemical Name	New Jersey - RTK	Pennsylvania - RTK	California Prop. 65
Isopropyl Alcohol	Not Listed	Listed Listed	Not Listed
Propane	Listed	Listed	Not Listed
Butane	Listed	Listed	Not Listed

International Inventories

Chemical Name	EINECS	DSL	NDSL	TSCA
Isopropyl Alcohol	X	X	-	X
Propane	X	X	-	X
Butane	X X	X	-	X

CPRC This product has been classified in accordance with the hazard criteria of the Controlled Product Regulations and the MSDS contains all of the information required by the Controlled Product Regulations

16. OTHER INFORMATION

NFPA	
Health	-
Flammability	-
Reactivity	-

HMIS	
Health	2
Flammability	4
Physical Hazard	0
Protection	-

Reason for revision No information available.

Prepared By T. Heidorn, MSDS Project Lead

The information accumulated herein is believed to be accurate, but is not warranted to be, whether originating with the company or not. Recipients are advised to confirm in advance of need that the information is current, applicable, and suitable to their circumstances.

Automotive

Prestone

MSDS254

SECTION 1: IDENTIFICATION

MSDS ID: MSDS254

PRODUCT NAME: PRESTONE(R) Starting Fluid
PRODUCT NUMBER: AS-237
FORMULA NUMBER: 13374-84, 2187-126

MANUFACTURER: Honeywell Consumer Products Group
39 Old Ridgebury Road
Danbury, CT 06810-5109

CANADIAN OFFICE: Honeywell Consumer Products Group
3333 Unity Drive
Mississauga, Ontario L5L 3S6

INFORMATION PHONE NUMBER: (800)862-7737 (in the US)
(800)668-9349 (in Canada)

EMERGENCY PHONE NUMBER: CHEMTREC 1-800-424-9300 (in the US)
CANUTEC (613)996-6666 (in Canada)

MSDS DATE OF PREPARATION/REVISION: 08/27/04

PRODUCT USE: Automobile engine starting fluid - consumer use

NFPA RATING (NFPA 704) - FIRE: 4
HEALTH: 2
REACTIVITY: 0

SECTION 2: PRODUCT COMPONENTS

HAZARDOUS COMPONENTS	CAS#	PERCENT	EXPOSURE LIMITS
Heptane	142-82-5	40-70	500 ppm TWA OSHA PEL 400 ppm TWA ACGIH TLV 500 ppm STEL ACGIH TLV
Ethyl Ether	60-29-7	30-60	400 ppm TWA OSHA PEL 400 ppm TWA ACGIH TLV 500 ppm STEL ACGIH TLV
Carbon Dioxide	124-38-9	5-10	5000 ppm TWA OSHA PEL 5000 PPM TWA ACGIH TLV 30,000 PPM STEL ACGIH TLV

SECTION 3: HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

Extremely Flammable Aerosol! Contents under pressure. Heated can may rupture. Vapor can cause flash fire. Eye and skin irritant. Inhalation may cause headache, dizziness, drowsiness, nausea, narcosis

and unconsciousness. Deliberate concentration and inhalation of vapors may be fatal.

POTENTIAL HEALTH EFFECTS:

ACUTE HAZARDS:

INHALATION: Inhalation of high concentrations may cause respiratory irritation and central nervous system effects including headache, dizziness, drowsiness, fatigue, incoordination, intoxication and unconsciousness. High vapor concentrations may cause heart rate irregularities.

SKIN CONTACT: May cause irritation, seen as localized reddening and swelling.

EYE CONTACT: Liquid or vapors may be irritating, causing tearing, reddening and swelling of the conjunctiva.

INGESTION: This is an unlikely route of exposure with an aerosol product. Swallowing large amounts may cause central nervous system depression including headache, dizziness, drowsiness, incoordination, fatigue, intoxication and unconsciousness. May cause gastrointestinal irritation resulting in nausea, vomiting and diarrhea. Aspiration into the lungs may occur during ingestion or vomiting, resulting in severe lung injury.

CHRONIC HAZARDS: Reports have associated repeated and prolonged overexposure to solvents with permanent brain and nervous system damage. Prolonged and/or repeated skin contact may cause dermatitis.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Because of its irritating defatting properties, this material may aggravate an existing skin condition. Existing cardiac conditions may be aggravated if inhaled in high concentrations and may be fatal as a result of serious arrhythmia and cardiac decomposition.

CARCINOGEN: None of the components is listed as a carcinogen or potential carcinogen by IARC, NTP or OSHA.

SECTION 4: FIRST AID MEASURES

INHALATION: If symptoms of exposure develop, remove to fresh air. If breathing becomes difficult, administer oxygen. Administer artificial respiration if breathing has stopped. Seek immediate medical attention.

SKIN CONTACT: Remove contaminated clothing. Wash all affected and exposed areas with soap and water. If irritation or redness persists, seek medical attention.

EYE CONTACT: Exposed eyes should be immediately flushed with copious

amounts of water using a steady stream for a minimum of 15 minutes. If irritation, pain, swelling or tearing persist, seek medical attention.

INGESTION: Unlikely route of exposure with an aerosol container. Get immediate medical attention by calling a physician, Poison Control Center or hospital emergency room. If medical advice cannot be obtained, then take the person and product to the nearest medical emergency treatment center or hospital. Rinse mouth out with water. Do not induce vomiting. Never give anything by mouth to a person who is unconscious or drowsy.

NOTES TO PHYSICIAN: May produce arrhythmia, especially in a person with an irritable myocardium. Because of possible arrhythogenic effects, sympathomimetics should be used with caution. Avoid the use of epinephrine.

There is no specific antidote. Treatment should be directed at the control of symptoms and clinical conditions. Artificial ventilation may be required if coma is deep and breathing is shallow.

SECTION 5: FIRE AND EXPLOSION DATA

FLASH POINT: -49 F PMCC

AEROSOL FIRE PROTECTION LEVEL: Level 3 (NFPA 30B)

AEROSOL FLAME EXTENSION: Greater than 18 inches

FLASHBACK: YES

AUTOIGNITION TEMPERATURE: 356 F (180 C)

FLAMMABILITY LIMITS: LEL: 1.9% (ethyl ether) UEL: 36% (ethyl ether)

EXTINGUISHING MEDIA: Use foam, alcohol foam, carbon dioxide, or dry chemical. Cool fire exposed containers with water.

SPECIAL FIRE FIGHTING PROCEDURES: Firefighters should wear positive pressure self- contained breathing apparatus and full protective clothing for fires in areas where chemicals are used or stored. Protect against rupturing cans.

UNUSUAL FIRE HAZARDS: Extremely flammable aerosol. Vapors are heavier than air and can travel along surfaces to a remote ignition source and flash back. Aerosol cans may burst in the heat of fire.

HAZARDOUS COMBUSTION PRODUCTS: Burning may produce carbon dioxide, carbon monoxide, and oxides of nitrogen.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Prestone

MSDS254

Eliminate all ignition sources. Ventilate area. Wear appropriate protective clothing and equipment (See Section 8). Collect with absorbent material and place in a suitable container for flammable waste.

SECTION 7: HANDLING AND STORAGE

Extremely flammable!
Use only as directed.
Keep away from heat, sparks and flames.
Do not smoke.
Use only with adequate ventilation.
Avoid eye and prolonged skin contact.
Avoid breathing vapors or mists.
Wash thoroughly with soap and water after use.
Store product below 120 F and away from direct sunlight.
Do not puncture or incinerate containers.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

VENTILATION: Use local exhaust as required to maintain exposures below the occupational exposure limits.

RESPIRATORY PROTECTION: None usually required for normal, consumer use. For operations where the TLV may be exceeded, NIOSH approved respirator with organic vapor cartridges with a dust/mist prefilter or supplied air respirator is recommended. Equipment selection depends on contaminant type and concentration. Select and use in accordance with 29 CFR 1910.134 and good industrial hygiene practice. For firefighting, use self-contained breathing apparatus.

GLOVES: Chemical resistant gloves such as 4H where contact is possible.

EYE PROTECTION: Safety glasses or safety goggles recommended if needed, to prevent eye contact.

OTHER PROTECTIVE EQUIPMENT/CLOTHING: Appropriate protective clothing as needed to minimize skin contact.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE AND ODOR: Clear liquid with an ether odor.

pH: Not applicable
BOILING POINT (F): 95 F
FREEZING POINT (F): less than -30
SOLUBILITY IN WATER: 4.5
EVAPORATION RATE: 23
(Butyl Acetate=1)
SPECIFIC GRAVITY: 0.67-0.7
VAPOR PRESSURE: 305 mmHg @ 68 F
VAPOR DENSITY: 2.6
VISCOSITY: Not determined
PERCENT VOLATILE: 99%
AEROSOL CONTAINER PRESSURE: 85 PSIG @ 70 F
COEFFICIENT OF WATER/OIL DISTRIBUTION: Not determined

Prestone

MSDS254

SECTION 10: STABILITY AND REACTIVITY

STABILITY: Stable
CONDITIONS TO AVOID: Heat, sparks, flames and all other sources of ignition.
INCOMPATIBILITY: Strong oxidizing agents.
HAZARDOUS DECOMPOSITION PRODUCTS: Carbon dioxide, carbon monoxide and oxides of nitrogen.
HAZARDOUS POLYMERIZATION: Will not occur.
CONDITIONS TO AVOID: None known.

SECTION 11: TOXICOLOGICAL INFORMATION

Heptane: LC50 Inhalation rat LC50: 103 gm/m3/4 hr

Ethyl Ether: Oral rat LD50: 1.2 g/kg
Inhalation mouse LC50: 31000 ppm/30M
Dermal rabbit LD50: >20 mL/kg

Carbon Dioxide: No data available

SECTION 12: ECOLOGICAL INFORMATION

No data available at this time.

SECTION 13: DISPOSAL INFORMATION

Dispose of product as hazardous waste (ignitable) in accordance with all local, state/provincial and federal regulations.

Do not incinerate container.

SECTION 14: TRANSPORT INFORMATION

U.S. DOT HAZARD CLASSIFICATION (For Ground Shipments Only)

PROPER SHIPPING NAME: CONSUMER COMMODITY
TECHNICAL NAME: N/A
UN NUMBER: NONE
HAZARD CLASS/PACKING GROUP: ORM-D
LABELS REQUIRED: NONE

DOT MARINE POLLUTANTS: This product does not contain Marine Pollutants as defined in 49 CFR 171.8.

IMDG CODE SHIPPING CLASSIFICATION

DESCRIPTION: AEROSOLS, 2, UN1950, FP -45 C, LTD QTY

ID NUMBER: UN1950

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MSDS254

HAZARD CLASS: 2
PACKING GROUP: NONE
LABELS REQUIRED: NONE
MARKINGS REQUIRED: NONE
PLACARDS REQUIRED: LIMITED QUANTITIES MARK ON CARGO TRANSPORT CONTAINERS

CANADIAN TDG CLASSIFICATION (For Ground Shipments Only)

PROPER SHIPPING NAME: Consumer Commodity (Limited Quantity)
TECHNICAL NAME: NONE
UN NUMBER: NONE
HAZARD CLASS: NONE
PACKING GROUP: NONE

SECTION 15: REGULATORY INFORMATION

EPA SARA 311/312 HAZARD CLASSIFICATION: Acute health, chronic health, fire hazard, sudden release of pressure

EPA SARA 313: This Product Contains the Following Chemicals Subject to Annual Release Reporting Requirements Under SARA Title III, Section 313 (40 CFR 372): None

PROTECTION OF STRATOSPHERIC OZONE: This product is not known to contain or to have been manufactured with ozone depleting substances as defined in 40 CFR Part 82, Appendix A to Subpart A.

CERCLA SECTION 103: Spills of this product over the RQ (reportable quantity) must be reported to the National Response Center. The RQ for this product, based on the RQ for Ethyl Ether (60% maximum) of 100 lbs, is 166 lbs. Many states have more stringent release reporting requirements. Report spills required under federal, state and local regulations.

CALIFORNIA PROPOSITION 65: This product does not contain chemicals regulated under California Proposition 65.

EPA TSCA INVENTORY: All of the components of this material are listed on the Toxic Substances Control Act (TSCA) Chemical Substances Inventory.

CANADIAN ENVIRONMENTAL PROTECTION ACT: All of the ingredients are listed on the Canadian Domestic Substances List.

CANADIAN WHMIS CLASSIFICATION: Class D - Division 2 - Subdivision B - (Toxic material causing other chronic effects), Class B - Division 5 (Flammable Aerosol)

CANADIAN WHIMIS HAZARD SYMBOLS: Toxic - Division 2, Flammable

This MSDS has been prepared according to the criteria of the Controlled

Prestone

Products Regulation (CPR) and the MSDS contains all of the information required by the CPR.

EUROPEAN INVENTORY OF EXISTING COMMERCIAL CHEMICAL SUBSTANCES (EINECS): All of the ingredients are listed on the EINECS inventory.

AUSTRALIA: All of the ingredients of this product are listed on the Australian Inventory of Chemical Substances.

SECTION 16: OTHER INFORMATION

REVISION SUMMARY: Section 14: DOT and TRG Transportation Classification

This MSDS is directed to professional users and bulk handlers of the product. Consumer products are labeled in accordance with Federal Hazardous Substances Act regulations.

While Prestone Products Corporation believes that the data contained herein are factual and the opinions expressed are those of qualified experts regarding the results of tests conducted, the data are not to be taken as a warranty or representation for which Prestone Products Corporation assumes legal responsibility. They are offered for your consideration, investigation and verification. Any use of these data and information must be determined by the user to be in accordance with applicable federal, state and local laws and regulations.

If more information is needed, please contact:

Technical Services
Prestone Products Corporation
55 Federal Road
Danbury, CT 06810
(800) 862-7737

Automotive 139

MATERIAL SAFETY DATA SHEET

EFFECTIVE DATE: 6-1-91

REVISION NUMBER: 3

QUAKER STATE CORPORATION • P.O. Box 989, Oil City, Pennsylvania 16301.

I. IDENTIFICATION

PRODUCT NAME: Quaker State Antifreeze

CHEMICAL NAME: Inhibited Ethylene Glycol

PRODUCT CODE: 69110 (55 gal. dr)
69113 (gal. pl)
69119 (bulk)

FORMULA: CH_2OHCH_2OH + Inhibitors

SYNONYMS: Automotive Coolant, Permanent Antifreeze

CHEMICAL FAMILY: Glycols

DEPARTMENT OF TRANSPORTATION:
HAZARD CLASSIFICATION: Not hazardous under DOT 172.101
SHIPPING NAME: Antifreeze Preparations, Proprietary (Ethylene Glycol Base)
IDENTIFICATION #: None

CAS #: Mixture

CAS NAME: Mixture

II. TYPICAL COMPOSITION

MATERIAL	CAS #	% wt.	TLV (UNITS) (SOURCE)	HAZARD
Ethylene Glycol	107-21-1	> 97	50 ppm ACGIH (TWA)	Inhalation, Ingestion, Skin, Eyes (Minor Irritant)
Rust Inhibitor Package (Mixture)		< 3	N/A	No hazardous materials over 1% in product

III. PHYSICAL DATA

BOILING POINT, 760 mm. Hg: 330° F

PHYSICAL STATE: Liquid

SPECIFIC GRAVITY (H,O = 1): > 1

VAPOR PRESSURE AT 20°C.: < 0.1

VAPOR DENSITY (AIR = 1): > 2

SOLUBILITY IN WATER, % BY WT.: 100%

PER CENT VOLATILES BY VOLUME: Nil

EVAPORATION RATE (Butyl Acetate = 1) < 1

APPEARANCE AND ODOR: Clear, dyed liquid. Slight characteristic odor.

This information is, to the best of Quaker State Corporation's knowledge and belief, accurate and reliable. However, no representation, warranty, or guarantee is made to its accuracy, reliability, or completeness. It is the user's responsibility to satisfy himself as to the suitableness and completeness of such information for his own particular use.

FOR FURTHER INFORMATION CALL: (814) 676-7676

IV. HEALTH HAZARD DATA

TLV AND SOURCE: 50 ppm C* TWA (ACGIH) 1983-1984

ACUTE EFFECTS OF OVEREXPOSURE

SWALLOWING : Ingestion will cause acute poisoning resulting in severe abdominal disturbances, Central Nervous System depression, possible respiratory and/or renal failure. NOTE: Acute ORAL LD_{50} (rat) 13.8 ml/kg. Human lethal dose reported to be 100 cc.

SKIN ABSORPTION: Is absorbed slowly. Should not be a problem unless gross exposure occurs and material is not promptly removed. NOTE: LD_{50} rabbit ¢ 1,000 mg/kg.

INHALATION : Prolonged exposure to high concentrations can cause respiratory irritation and may result in unconsciousness.

SKIN CONTACT : Prolonged skin contact with liquid ethylene glycol has a dehydrating effect which can result in temporary irritation. Vapors have little or no effect on the skin.

EYE CONTACT : Contact with liquid ethylene glycol can result in temporary irritation. No corneal injury likely. Eye contact with vapors may result in temporary irritation.

CHRONIC EFFECTS OF OVEREXPOSURE

See below.

EMERGENCY AND FIRST AID PROCEDURES

SWALLOWING : Toxic by ingestion. Induce vomiting immediately and seek medical attention.

SKIN : Wash affected skin areas with soap and water. If irritation develops, consult a physician. Wash clothing before reuse.

INHALATION : Remove to fresh air. If breathing has stopped, start artificial respiration. Seek medical attention.

EYES : Irrigate eyes immediately with large amounts of water (15 mins.). If irritation occurs, consult a physician.

NOTES TO PHYSICIAN

Overexposure may cause liver and kidney damage and metabolic acidosis. Anesthetic or narcotic affect may occur. Early administration of ethanol may counter the toxic affects of ethylene glycol. Consult standard literature. Treatment should be based on sound judgment of physician and individual reactions of the patient.

Eyes: Although permanent injury is unlikely, stain for evidence of corneal injury.

Skin: In cases of irritation, treat as any contact dermatosis. Material may be absorbed (although slowly) in acutely toxic amounts upon gross contact.

*C denotes ceiling value as well as TWA.

V. FIRE AND EXPLOSION HAZARD DATA

FLASH POINT [test method(s)]: 240° F COC AUTO IGNITION TEMPERATURE: 740° F

FLAMMABLE LIMITS IN AIR, % BY VOLUME: N/A

EXTINGUISHING MEDIA: Water fog, alcohol resistant foam, CO_2, Dry Chemical.

SPECIAL FIRE FIGHTING PROCEDURES: For fires involving large quantities of antifreeze where self-contained breathing apparatus and full turn-out gear.

UNUSUAL FIRE AND EXPLOSION HAZARDS: Heated vapors are heavier than air and may travel to a source of ignition.

VI. REACTIVITY DATA

STABILITY: Stable

CONDITIONS TO AVOID: None known

INCOMPATIBILITY (materials to avoid): Strong oxidizing materials.

HAZARDOUS COMBUSTION OR DECOMPOSITION PRODUCTS: None known

HAZARDOUS POLYMERIZATION: Will not occur

CONDITIONS TO AVOID: None known

VII. SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED: For small spills, soak up with absorbent material. For large spills, dike and pump into suitable containers. Clean up residual with water.

WASTE DISPOSAL METHOD: Incinerate according to local, state and federal regulations or salvage.

VIII. PERSONAL PROTECTION INFORMATION

RESPIRATORY PROTECTION (specify type): None normally needed for intended use. Approved organic vapor type respiratory protection required in absence of proper environmental controls in case of large spills.

VENTILATION: None normally needed for intended use.

PROTECTIVE GLOVES: Where skin contact may occur it is recommended chemical impervious gloves be worn.

EYE PROTECTION: If splashing may occur, use chemical goggles or full face shield.

OTHER PROTECTIVE EQUIPMENT: None normally needed.

IX. SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE: Practice reasonable care and cleanliness. Avoid breathing spray mists if generated.

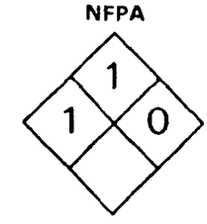
X. REGULATORY INFORMATION

OSHA:

SARA Title III:

N.J. Right To Know: REPORTABLE CONTENTS:
Ethylene Glycol 107-21-1
Diethylene Glycol 111-46-6
Water 7732-18-5

NFPA



HAZARD IDENTIFICATION

NOTES

Approved by D. W. Cralley - Manager Safety & Health

Automotive

MSDS - Material Safety Data Sheet
Product Name: THRUST INSTANT STARTING FLUID

MSDS No.: M3815

I. Basic Information:

Manufacturer: RADIATOR SPECIALTY COMPANY

Address: P.O. BOX 159, 600 RADIATOR ROAD

City, ST Zip: INDIAN TRAIL, NC 28079

Emergency Contact: Rocky Mountain Poision Control Center

Emergency Telephone Number: 303-623-5716

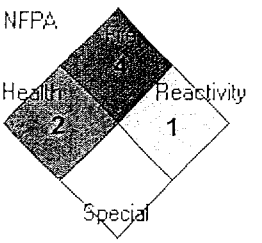
Contact: Robert Geer

Information Telephone Number: 704-688-3430

Last Update: 12/15/2003

Chemical State: [X] Liquid [ ] Gas [ ] Solid

Chemical Type: [ ] Pure [X] Mixture



2	Health
4	Flammability
0	Reactivity
H	Pers. Protection

II. Ingredients:

[ ] Trade Secret

CAS No.	Chemical Name	% Range	EHS	NTP	IARC	SUB Z	SARA 313	OSHA PEL	ACGIH TLV	Other Limits
124389	Carbon dioxide	1.0 - 10.0						N/AV	5000 ppm	
60297	Ethane, 1,1'-oxybis-	15.0 - 40.0						400 ppm	400 ppm	
142825	Heptane	40.0 - 70.0						400 ppm	400 ppm	
64742650	Petroleum Oil	0.5 - 1.5						5 mg/m3	5 mg/m3	

III. Hazardous Identification:

Hazard Category:

[X] Acute [ ] Chronic [X] Fire [X] Pressure [ ] Reactive

Hazardous Identification Information:

DANGER: EXTREMELY FLAMMABLE. HARMFUL OR FATAL IF SWALLOWED. VAPOR TOXIC. EXCESSIVE INHALATION MAY BE FATAL. VAPORS MAY CAUSE FLASH FIRES. EYE IRRITANT. CONTENTS UNDER PRESSURE.

Level 3 Aerosol

IV. First Aid Measures:

Route(s) of Entry:

Inhalation, eye and skin contact.

Health Hazards (Acute and Chronic):

See signs and symptoms below.

Signs and Symptoms:

Eye Contact: Direct spray or vapors will irritate and may harm eyes
Skin Contact: Product may cause irritation due to defatting of skin.
Inhalation: High concentrations of vapors may irritate nose and throat and cause symptoms of intoxication such as dizziness, nausea, headache, or indigestion.
Ingestion: Gastrointestinal irritation, nausea, cramps, diarrhea. May be harmful or fatal if swallowed..

MSDS - Material Safety Data Sheet
Product Name: THRUST INSTANT STARTING FLUID

MSDS No.: M3815

Medical Conditions Generally Aggravated by Exposure:

None Known

Emergency and First Aid Procedures:

Eye Contact: Flush eyes with clean water for 15 minutes while lifting eyelids. Get prompt medical attention.
Skin Contact: Wash with soap and water thoroughly. If adverse effects persist, get prompt medical attention. Launder contaminated clothing before reuse.
Inhalation: Remove to fresh air. If breathing becomes difficult get prompt medical attention.
Ingestion: DO NOT INDUCE VOMITING! Call Poison Control Center, physician, or hospital emergency room immediately.

Other Health Warnings:

Vomiting and subsequent aspiration into the lungs may lead to chemical pneumonia and pulmonary edema which is a potentially fatal condition.

V. Fire Fighting Measures:

Flash Point: - 15°F **Lower Explosive Limit:** N/D **Upper Explosive Limit:** N/D

F.P. Method: TCC

Fire Extinguishing Media: Foam, Dry Chemical (B-C), Carbon Dioxide

Special Fire Fighting Procedures:

Wear self- contained, positive pressure breathing apparatus and protective clothing. Use water fog to keep container cool. Protect from venting, rupturing, and bursting containers.

Unusual Fire and Explosion:

At temperatures above 120°F, containers may vent, rupture, or burst, even violently. Contents under pressure. Do not use near fire, sparks, or flame.

VI. Accidental Release Measures:

Steps to be Taken in Case Material is Released or Spilled:

Eliminate all ignition sources. Persons not wearing protective equipment should be excluded from area of spill until clean-up has been completed. Dike or contain spill and absorb with inert materials (sand, sawdust, absorbent sweeping compounds, rags, etc). Using a non-metalic scoop, place contaminated material into an approved chemical waste container. Where possible, vacuum spilled liquid using an explosion proof vacuum to recover material. Prevent run-off to sewers, streams, or other bodies of water. If run-off occurs, notify proper authorities as required that a spill has occured.

VII. Handling and Storage:

Precautions to be Taken:

Use with adequate ventilation and proper protective equipment.
Do not use or store near fire, sparks, open flame or heat sources. Do not puncture or incinerate container. Exposure to temperatures above 120° may cause container to vent, rupture, or burst. Store in a cool, dry place, out of direct sunlight.

Other Precautions:

Do not used in confined area without proper ventilation. Contact lenses may cause further damage in case of splash into eye. KEEP AWAY FROM CHILDREN AND ANIMALS!

VIII. Exposure Controls/Personal Protection:

Ventilation Requirements:

MSDS - Material Safety Data Sheet
Product Name: THRUST INSTANT STARTING FLUID

MSDS No.: M3815

See Section 2 for applicable exposure limits. Maintain adequate ventilation.
Avoid breathing vapors. In restricted areas, use approved chemical/mechanical filters designed to remove a combination of particles and vapor. In confined areas, use approved air line type respirator or hood. A self-contained breathing apparatus is required for vapor concentrations above TLV limits.

Personal Protective Equipment:

See Section 2 for applicable exposure limits. For prolonged exposure wear protective safety glasses, gloves, and apron.

IX. Physical and Chemical Properties:

Boiling Point: N/D

Melting Point: N/A

Evaporation Rate (Butyl Acetate = 1): N/D

Vapor Pressure (mm Hg.): N/D

Specific Gravity (H20 = 1): 0.68500

Vapor Density (AIR = 1): N/D.

Solubility In Water: Partial solubility

Appearance and Odor: Clear liquid with solvent/ether odor.

Other Information: % VOC: 93%

X. Stability and Reactivity:

Stability:

Product is stable

Incompatibility (Materials to Avoid):

Avoid contact with oxidizing agents.

Decomposition/By Products:

Carbon Dioxide, Carbon Monoxide.

Hazardous Polymerization:

Will not occur.

XI. Toxicological Information:

N/D

XII. Ecological Information:

N/D

XIII. Disposal Considerations:

DISPOSAL: This container may be recycled in aerosol recycling centers when empty. Before offering for recycling, empty the can by using the product according to the label. DO NOT PUNCTURE! If recycling is not available, wrap the container and discard in the trash. Dispose of unused product in accordance with all local, state government and federal laws and regulations.

XIV. Transport Information:

DOT Hazard Class: ORM-D
Shipping Name: Consumer Commodity

MSDS - Material Safety Data Sheet
Product Name: THRUST INSTANT STARTING FLUID

MSDS No.: M3815

XV. Regulatory Information:

See Section 2 for SARA Reportable Chemicals.

USA TSCA: All components of this material are either exempt or listed on the US TSCA Inventory.

XVI. Other Information:

Do not used in confined area without proper ventilation. Contact lenses may cause further damage in case of splash into eye. KEEP AWAY FROM CHILDREN AND ANIMALS!

N/E: Not Established
N/D: Not Determined
N/A: Not Applicable
N/AV: Not Available

WEARING CONTACT LENSES WHEN HANDLING THIS MATERIAL IS INADVISABLE! KEEP AWAY FROM CHILDREN AND ANIMALS.

While Radiator Specialty Company believes this data is accurate as of the revision date, we make no warranty with respect to the data and we expressly disclaim all liability for reliance thereon. The data is offered soley for information, investigation, and verification. Various government agencies may have specific regulations regarding the transportation, handling, storage, use, or disposal of this product which may not be covered by this MSDS. The user is repsonsible for full compliance.

Solvent for Parts Washer

CONTINUED USE PRODUCT - SOLVENT
MATERIAL SAFETY DATA SHEET FOR USA AND CANADA

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: CONTINUED USE PRODUCT - SOLVENT

SYNONYMS: Parts Washer Solvent; Petroleum Distillates; Petroleum Naphtha; Naphtha, Solvent; Stoddard Solvent; Mineral Spirits.

PRODUCT CODE: None

PRODUCT USE: For washing drums at Safety-Kleen facilities or for use in lower grade solvent applications.
If this product is used in combination with other products, refer to the Material Safety Data Sheet for those products.

24-HOUR EMERGENCY PHONE NUMBERS

These numbers are for emergency use only. If you desire non-emergency product information, please call a phone number listed below.	MEDICAL:	TRANSPORTATION (SPILL):
	1-800-752-7869	1-800-468-1760

SUPPLIER: Safety-Kleen Systems, Inc.
5400 Legacy Drive
Cluster II, Building 3
Plano, Texas 75024
USA
1-800-669-5740
www.Safety-Kleen.com

TECHNICAL INFORMATION: 1-800-669-5740 Press 1 then Enter 7500

MSDS FORM NUMBER: 82696 **ISSUE:** September 12, 2003

ORIGINAL ISSUE: October 24, 1996 **SUPERSEDES:** June 20, 2002

PREPARED BY: Product MSDS Coordinator **APPROVED BY:** MSDS Task Force

CARG003810

POTENTIAL HEALTH EFFECTS

INHALATION (BREATHING): High concentrations of vapor may be harmful if inhaled. High concentrations of vapor or mist may irritate the respiratory tract (nose, throat, and lungs). High concentrations of vapor or mist may cause nausea, vomiting, headaches, dizziness, loss of coordination, numbness, and other central nervous system effects. Massive acute overexposure may cause rapid central nervous system depression, sudden collapse, coma, and/or death.

EYES: May cause irritation with watering, stinging, and/or redness.

SKIN: May cause irritation.

INGESTION (SWALLOWING): May harmful if swallowed. May cause throat irritation, nausea, vomiting, central nervous system effects as noted under **INHALATION (BREATHING)**, unconsciousness, coma, and death. Breathing product into the lungs during ingestion or vomiting may cause lung injury and possible death.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Individuals with pre-existing respiratory tract (nose, throat, and lungs), central nervous system, kidney, eye, and/or skin disorders may have increased susceptibility to the effects of exposure.

CHRONIC: Prolonged or repeated inhalation may cause toxic effects as noted under **INHALATION (BREATHING)**. Prolonged or repeated inhalation and/or ingestion exposure may cause central nervous system and kidney damage or have mutagenic effects. Prolonged or repeated eye contact may cause inflammation of the membrane lining the eyelids and covering the eyeball (conjunctivitis). Prolonged or repeated skin contact may cause drying, cracking, redness, itching, and/or swelling (dermatitis). Prolonged or repeated exposure may cause mutagenicity. Contains material which may cause birth defects.

CANCER INFORMATION: This product contains tetrachloroethylene which may cause cancer. Risk of cancer depends on duration and level of exposure. For more information, see **SECTION 11: CARCINOGENICITY**.

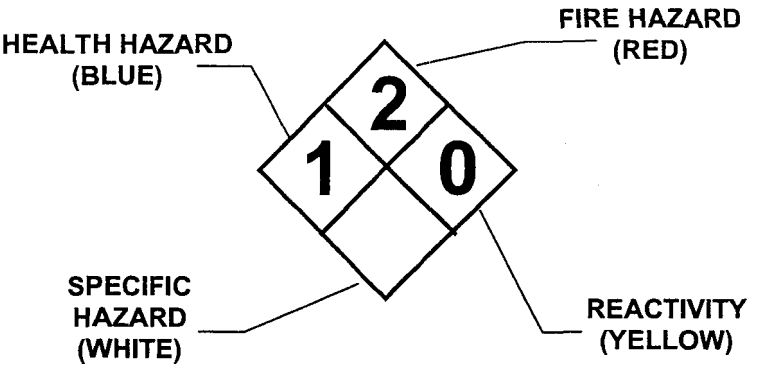
Also see **SECTION 15: CALIFORNIA**.

POTENTIAL ENVIRONMENTAL EFFECTS

Product is toxic to fish. Also see **SECTION 12: ECOLOGICAL INFORMATION**.

EXTINGUISHING MEDIA: Carbon dioxide, regular foam, dry chemical, water spray, or water fog.

NFPA 704 HAZARD IDENTIFICATION: This information is intended solely for the use by individuals trained in this system.



FIRE FIGHTING INSTRUCTIONS: Keep storage containers cool with water spray. A positive-pressure, self-contained breathing apparatus (SCBA) and full-body protective equipment are required for fire emergencies.

FIRE AND EXPLOSION HAZARDS: Vapor explosion hazard indoors, outdoors, or in sewers. Vapors may travel to ignition source and flashback. Vapors will spread along the ground and collect in low or confined areas. Run-off to sewer may create a fire hazard. Heated containers may rupture or be thrown into the air. "Empty" containers may retain residue and can be dangerous. Product is not sensitive to mechanical impact. Product may be sensitive to static discharge, which could result in fire or explosion.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Remove all ignition sources. Do not touch or walk through spilled product. Stop leak if you can do it without risk. Wear protective equipment and provide engineering controls as specified in **SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**. Isolate hazard area. Keep unnecessary and unprotected personnel from entering. Ventilate area and avoid breathing vapor or mist. A vapor suppressing foam may be used to reduce vapors. Contain spill away from surface water and sewers. Contain spill as a liquid for possible recovery, or sorb with compatible sorbent material and shovel with a clean, sparkproof tool into a sealable container for disposal.

Additionally, for large spills: Water spray may reduce vapor, but may not prevent ignition in closed spaces. Dike far ahead of liquid spill for collection and later disposal.

There may be specific federal regulatory reporting requirements associated with spills, leaks, or releases of this product. Also see **SECTION 15: REGULATORY INFORMATION.**

To avoid prolonged or repeated contact with product where spills and splashes are likely, wear appropriate chemical-resistant faceshield, boots, apron, coveralls, long sleeve shirts, or other protective clothing.

PERSONAL HYGIENE: Use good personal hygiene. Wash thoroughly with soap and water after handling product and before eating, drinking, or using tobacco products. Clean affected clothing, shoes, and protective equipment before reuse. Discard affected clothing, shoes, and/or protective equipment if they cannot be thoroughly cleaned. Discard leather articles, such as shoes, saturated with this product.

OTHER PROTECTIVE EQUIPMENT: Where spills and splashes are likely, facilities storing or using this product should be equipped with an emergency eyewash and shower, both equipped with clean water, in the immediate work area.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE, APPEARANCE, AND ODOR:	Liquid, brown to black, mild hydrocarbon odor.
ODOR THRESHOLD:	30 ppm (based on Stoddard Solvent)
MOLECULAR WEIGHT:	Not available.
SPECIFIC GRAVITY:	0.77 to 0.80 at 60°F (15.6°C) (water = 1)
DENSITY:	6.4 to 6.7 LB/US gal (770 to 800 g/l)
VAPOR DENSITY:	5 (air = 1) (approximately)
VAPOR PRESSURE:	0.4 mm Hg at 68°F (20°C) (approximately) 1.0 mm Hg at 100°F (37°C) (approximately)
BOILING POINT:	310°F (155°C) (initial)
FREEZING/MELTING POINT:	-45°F (-43°C) (maximum)
pH:	Not applicable.
EVAPORATION RATE:	0.1 (butyl acetate = 1) (based on Stoddard Solvent)
SOLUBILITY IN WATER:	Insoluble.

REPRODUCTIVE TOXICITY: Based on best current information, there is no known reproductive toxicity associated with this product.

Also see **SECTION 15: CALIFORNIA**.

TERATOGENICITY: Tetrachloroethylene has demonstrated animal effects of teratogenicity.

Based on best current information, the other component listed in **SECTION 2** is not a teratogen.

TOXICOLOGICALLY SYNERGISTIC PRODUCT(S): Based on best current information, there are no known toxicologically synergistic products associated with this product.

SECTION 12: ECOLOGICAL INFORMATION

ECOTOXICITY: 2.9 mg/L 96 hour LC_{50} Rainbow trout, Donaldson trout (Oncorhynchus mykiss) (based on Petroleum distillates, hydrotreated light).

Component Analysis - Ecotoxicity - Aquatic Toxicity

Perchloroethylene (127-18-4)

Test & Species		Conditions
96 Hr LC50 rainbow trout	5.28 mg/L	Static
96 Hr LC50 fathead minnow	13.4 mg/L	flow-through
96 Hr LC50 bluegill	12.9 mg/L	Static

OCTANOL/WATER PARTITION COEFFICIENT: Not available.

VOLATILE ORGANIC COMPOUNDS: 100 WT%; 6.4 to 6.7 LB/US gal; 770 to 800 g/l
As per 40 CFR Part 51.100(s).

SECTION 13: DISPOSAL CONSIDERATIONS

DISPOSAL: Dispose in accordance with federal, state, provincial, and local regulations. Regulations may also apply to empty containers. The responsibility for proper waste disposal lies with the owner of the waste. Contact Safety-Kleen regarding proper recycling or disposal.

CERCLA: Based on the ingredients listed in **SECTION 2**, this product contains the following "hazardous substance(s)" listed under the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA) in 40 CFR Part 302, Table 302.4 with the following reportable quantities (RQ):

Material	CAS	RQ
Perchloroethylene	127-18-4	100 lb (45.4 kg)

TSCA: All the components of this product are listed on, or are automatically included as "naturally occurring chemical substances" on, or are exempted from the requirement to be listed on, the TSCA Inventory.

CALIFORNIA: This product may contain a detectable amount of benzene CAS 71-43-2, cadmium and cadmium compounds CAS 7440-43-9, chromium (hexavalent compounds) CAS 7440-47-3, p-dichlorobenzene CAS 106-46-7, hexachlorobenzene CAS 118-74-1, methylene chloride CAS 75-09-2, lead and lead compounds CAS 7439-92-1, perchloroethylene CAS 127-18-2 and trichloroethylene CAS 79-01-6. WARNING: These chemicals are known to the State of California to cause cancer.

This product may contain a detectable amount of benzene CAS 71-43-2, cadmium and cadmium compounds CAS 7440-43-9, chromium (hexavalent compounds), hexachlorobenzene CAS 118-74-1, lead and lead compounds CAS 7439-92-1, and toluene CAS 108-88-3. WARNING: These chemicals are known to the State of California to cause birth defects or other reproductive harm.

CANADIAN REGULATIONS

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all information required by the CPR.

WHMIS: Class B3 - Combustible Liquid
Class D2B - Irritating to eyes and skin.
Class D2A - Contains component that may cause cancer.

CANADIAN ENVIRONMENTAL PROTECTION ACT (CEPA): All the components of this product are listed on, or are automatically included as "substance occurring in nature" on, or are exempted from the requirements to be listed on, the Canadian Domestic Substances List (DSL).

Automotive

ZEP Manufacturing Company
Acuity Specialty Products Group, Inc.
P.O. Box 2015
Atlanta, GA 30301
1-877-I-BUY-ZEP (428-9937)
www.zep.com

Material Safety Data Sheet
and Safe Handling and Disposal Information

Section 1. Chemical Product and Company Identification

Product name ZEP BATTERY CARE
Product Use Aerosol Battery Terminal Cleaner
Product Code 0308
Date of issue 01/11/05 Supersedes 10/20/00

Emergency Telephone Numbers
For MSDS Information:
Acuity Specialty Products Group, Inc.
Compliance Services 1-877-I-BUY-ZEP (428-9937)

For Medical Emergency
INFOTRAC:
(877) 541-2016 Toll Free - All Calls Recorded

For a Transportation Emergency
CHEMTREC:
(800) 424-9300 - All Calls Recorded
In the District of Columbia (202) 483-7616

Printing date: 01/12/05

Prepared by Compliance Services Group
Acuity Specialty Products Group
1420 Seaboard Industrial Blvd.
Atlanta, GA 30318

Section 2. Composition, Information on Ingredients

Name of Hazardous Ingredients	CAS #	% by Weight	Exposure Limits
HYDROCARBON PROPELLANT; blend of propane, isobutane & n-butane	75-28-5; 74-98-6; 106-97-8	1 - 10	**ACGIH TLV / OSHA PEL (United States).** **Notes: Propane** TWA: 1000 ppm 8 hour(s). **OSHA PEL / ACGIH TLV (United States).** **Notes: n-Butane** TWA: 800 ppm 8 hour(s).
ETHYLENE GLYCOL MONOBUTYL ETHER; 2-butoxyethanol; butyl cellosolve	111-76-2	1 - 5	**ACGIH TLV (United States).** TWA: 20 ppm 8 hour(s). **OSHA PEL (United States). Skin** TWA: 50 ppm 8 hour(s).

Section 3. Hazards Identification

HMIS

Health	1
Fire Hazard	1
Reactivity	0
Personal Protection	B

Acute Effects **Routes of Entry** Dermal contact. Inhalation.

Skin Hazardous in case of skin contact (irritant, permeator). Harmful if absorbed through the skin. Direct contact may cause irritation and redness. Prolonged or repeated contact may dry skin and cause irritation.

Eyes Hazardous in case of eye contact (irritant). Inflammation of the eye is characterized by redness, watering, and itching.

Inhalation Hazardous in case of inhalation. Avoid breathing vapors or spray mists. Over-exposure by inhalation may cause respiratory irritation. Can cause central nervous system depression.

Ingestion May be harmful if swallowed. Can cause gastrointestinal disturbances.

NOTE: MSDS data pertains to the product as delivered in the original shipping container(s). Risk of adverse health effects are lessened by following all prescribed safety precautions, including use of proper personal protective equipment.

Carcinogenic Effects Ingredients: Not listed as carcinogen by OSHA, NTP or IARC.

Chronic Effects The substance may be toxic to blood, kidneys, liver, upper respiratory tract, skin, eyes, central nervous system (CNS). Overexposure of this product by inhalation or absorption can produce central nervous system depression resulting in headache, nausea and/or dizziness. Repeated or prolonged exposure to the substance can produce target organs damage.

See Toxicological Information (section 11)

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Section 4. First Aid Measures

Eye Contact Check for and remove any contact lenses. Immediately flush eyes with running water for at least 15 minutes, keeping eyelids open. Get medical attention.

Skin Contact In case of contact, immediately flush skin with plenty of water. Remove contaminated clothing and shoes. Wash clothing before reuse. Get medical attention if irritation develops.

Inhalation If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Ingestion Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention immediately.

Section 5. Fire Fighting Measures

Flash Point Not applicable. **Flammable Limits** Not applicable.

Flammability Non-flammable. (CSMA)

Fire Hazard CONTENTS UNDER PRESSURE. Container explosion may occur under fire conditions or when heated.

Fire-Fighting Procedures Use DRY chemicals, CO_2, water spray or foam. Cool closed containers exposed to fire with water.

Section 6. Accidental Release Measures

Spill Clean up Large spills are unlikely due to packaging.

Section 7. Handling and Storage

Handling Avoid contact with eyes, skin and clothing. Do not ingest. Avoid breathing vapors or spray mists. Use only with adequate ventilation. Observe label precautions. Wash thoroughly after handling.

Storage CONTENTS UNDER PRESSURE. Do not puncture or incinerate container. Keep container in a cool, well-ventilated area. Do not store above 49°C (120.2°F). Keep out of the reach of children.

Section 8. Exposure Controls, Personal Protection

Personal Protection **Protective Clothing (Pictograms)**

Eyes Safety glasses.

Body Rubber gloves. Nitrile gloves. Neoprene gloves.

Respiratory Use with adequate ventilation. Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective occupational exposure limits.

Section 9. Physical and Chemical Properties

Physical State Liquid. (Aerosol.)

pH Not applicable

Boiling Point 101.67°C (215°F)

Specific Gravity 1 (Water = 1)

Solubility Easily soluble in cold water, hot water.

Color Milky-white (Light.)

Odor Mild.

Vapor Pressure Not determined.

Vapor Density Not determined.

Evaporation Rate 1 compared to Water

VOC (Consumer) 693.37 (g/l). 5.79 lbs/gal 8.21%

Section 10. Stability and Reactivity

Stability and Reactivity The product is stable.

Incompatibility Reactive with oxidizing agents, metals. Incompatible with magnesium, zinc, sodium, potassium and aluminum.

Hazardous Polymerization Will not occur.

Hazardous Decomposition Products Carbon Dioxide, Carbon Monoxide and other organic materials..

Section 11. Toxicological Information

Toxicity to Animals **Ethylene Glycol Monobutyl Ether:**

ORAL (LD50): Acute: 1746 mg/kg [Rat].

DERMAL (LD50): Acute: 680 mg/kg [Rabbit].

VAPOR (LC50): Acute: 450 ppm 4 hour(s) [Rat (Female)].

Section 12. Ecological Information

Ecotoxicity Not available.

Biodegradable/OECD Not available.

Section 13. Disposal Considerations

Waste Information Waste must be disposed of in accordance with federal, state and local environmental control regulations.

Waste Stream Non-hazardous waste

Consult your local or regional authorities.

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Section 14. Transport Information

Proper shipping name Consumer Commodity

DOT Classification ORM-D **UN number** Not regulated.

NOTE: DOT classification applies to most package sizes. For specific container size classifications or for size exceptions, refer to the Bill of Lading with your shipment.

Section 15. Regulatory Information

U.S. Federal Regulations SARA 313 toxic chemical notification and release reporting:

Ethylene Glycol Monobutyl Ether

Clean Water Act (CWA) 311: No products were found.

Clean air act (CAA) 112 regulated toxic substances: Ethylene Glycol Monobutyl Ether

All Components of this product are listed or exempt from listing on TSCA inventory.

Section 16. Other Information

To the best of our knowledge, the information contained herein is accurate. However, neither the above named supplier nor any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

Automotive

ZEP Manufacturing Company
Acuity Specialty Products Group, Inc.
P.O. Box 2015
Atlanta, GA 30301
1-877-I-BUY-ZEP

Material Safety Data Sheet
and Safe Handling and Disposal Information

Section 1. Chemical Product and Company Identification

Product name BATTERY COAT
Product Use Battery Terminal Protector
Product Code 0108
Date of issue 02/16/04 **Supersedes** 02/07/00

Emergency Telephone Numbers
For MSDS Information:
Acuity Specialty Products Group, Inc.
Compliance Services 1-877-I-BUY-ZEP

For Medical Emergency
INFOTRAC:
(877) 541-2016 Toll Free - All Calls Recorded

For a Transportation Emergency
CHEMTREC:
(800) 424-9300 - All Calls Recorded
In the District of Columbia (202) 483-7616

Printing date: 02/16/04

Prepared by Compliance Services Group
Acuity Specialty Products Group
1420 Seaboard Industrial Blvd.
Atlanta, GA 30318

Section 2. Composition, Information on Ingredients

Name of Hazardous Ingredients	CAS #	% by Weight	Exposure Limits
TRICHLOROETHYLENE; acetylene trichloride; 1-chloro-2,2-dichloroethylene	79-01-6	40-50	**ACGIH TLV (United States).** TWA: 50 ppm 8 hour(s). STEL: 100 ppm 15 minute(s). **OSHA PEL (United States).** TWA: 50 ppm 8 hour(s). STEL: 200 ppm 15 minute(s).
XYLENE; dimethyl benzene; xylol	1330-20-7	5-15	**OSHA (United States).** TWA: 100 ppm **ACGIH (United States).** STEL: 150 ppm
ETHYL BENZENE	100-41-4	<5	**OSHA PEL (United States).** TWA: 100 ppm 8 hour(s).
ETHYLENE GLYCOL MONOBUTYL ETHER; 2-butoxyethanol; butyl cellosolve	111-76-2	<5	**ACGIH TLV (United States). Skin** TWA: 20 ppm 8 hour(s). Form: Vapor **OSHA PEL (United States). Skin** TWA: 25 ppm 8 hour(s). Form: Vapor
BLEND OF ISOBUTANE & PROPANE	74-98-6; 75-28-5	20-30	**ACGIH TLV (United States).** : 800 ppm 8 hour(s). **OSHA PEL (United States).** TWA: 1000 ppm 8 hour(s).

Section 3. Hazards Identification

HMIS

Health	2
Flammability	2
Reactivity	0
Personal Protection	B

Acute Effects **Routes of Entry** Absorbed through skin. Inhalation.

Skin Hazardous in case of skin contact (irritant). Non-sensitizer for skin. Skin inflammation is characterized by itching, scaling, reddening, or, occasionally, blistering.

Eyes Hazardous in case of eye contact (irritant). Liquid in eye may cause irritation with possible damage if not rinsed immediately.

Inhalation Hazardous in case of inhalation (lung irritant). Material is irritating to mucous membranes and upper respiratory tract. Can cause central nervous system depression. Inhalation of vapor/aerosol concentrations above the recommended exposure limits causes headaches, drowsiness, and nausea, and may lead to unconsciousness or death. Prolonged repeated exposure may cause chemical pneumontitis. Medical Conditions Aggravated by Overexposure: Respiratory, Heart (Cardiac).

CARG003819

Ingestion Aspiration hazard if swallowed- can enter lungs and cause damage.

Carcinogenic Effects Trichloroethylene - Classified 2A (Probable for human) by IARC, 2 (Reasonably Anticipated To Be Human Carcinogen) by NTP. Ethyl Benzene - Classified 2B (Possible for human) by IARC.

Chronic Effects The substance may be toxic to kidneys, liver, central nervous system (CNS), and heart. Repeated or prolonged exposure to the substance can produce target organs damage. Defatting to the skin. Prolonged skin contact may cause dermatitis with drying and cracking of skin.

See Toxicological Information (section 11)

Section 4. First Aid Measures

Eye Contact Flush with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical attention.

Skin Contact Wash affected area with soap or mild detergent and water. Remove contaminated clothing and shoes. Get medical attention if irritation develops.

Inhalation If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Ingestion Aspiration hazard if swallowed- can enter lungs and cause damage. Do NOT induce vomiting unless directed to do so by medical personnel. If vomiting occurs, keep head lower than hips to help prevent aspiration. Never give anything by mouth to an unconscious person. Get medical attention immediately.

Section 5. Fire Fighting Measures

Flash Point Not determined. **Flammable Limits** LOWER: 8% UPPER: 10.5%

Flammability FLAMMABLE. (CSMA)

Fire Hazard Vapor may cause fire when exposed to heat or flame.

Fire-Fighting Procedures Use DRY chemicals, CO_2 or foam. Wear special protective clothing and positive pressure, self-contained breathing apparatus.

Section 6. Accidental Release Measures

Spill Clean up Large spills are unlikely due to packaging.

Section 7. Handling and Storage

Handling Avoid contact with eyes, skin and clothing. Avoid breathing vapors or spray mists. Use only with adequate ventilation. Wash thoroughly after handling. Wash contaminated clothing before reusing. Watch for accumulation in low confined areas. Vapor may cause flash fire. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose containers to heat or sources of ignition.

Storage Keep away from heat and direct sunlight. Keep container in a cool, well-ventilated area. Do not store above 49°C (120.2°F). Do not puncture or incinerate. Keep out of the reach of children.

Section 8. Exposure Controls, Personal Protection

Personal Protection

Eyes Safety glasses. It is generally recognized that contact lenses should not be worn when working with chemicals because contact lenses may contribute to the severity of an eye injury.

Protective Clothing (Pictograms)

Body Chemical resistant gloves. (Viton)

Respiratory Use with adequate ventilation. Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective threshold limit value. Wear appropriate respirator when ventilation is inadequate.

Section 9. Physical and Chemical Properties

Physical State Liquid. (Aerosol.)

pH Not applicable.

Boiling Point 54.4°C (130°F)

Specific Gravity 1.25 (Water = 1)

Solubility Insoluble in cold water, hot water.

Color Red.

Odor Solvent-like. (Slight.)

Vapor Pressure 8 kPa (60 mmHg) (at 20°C)

Vapor Density Not determined.

Evaporation Rate 0.75 compared to Butyl acetate.

VOC (Consumer) 92.3% 8.0 (lb/gal) 955 (g/l)

Section 10. Stability and Reactivity

Stability and Reactivity The product is stable.

Incompatibility Avoid contact with strong oxidizers, excessive heat, sparks or open flame.

Hazardous Polymerization Will not occur.

Hazardous Decomposition Products Carbon Dioxide, Carbon Monoxide, Hydrogen Chloride (HCl), Chlorine, Phosgene Gas and other organic materials.

CARG003820

Section 11. Toxicological Information

Toxicity to Animals

Trichloroethylene:
ORAL (LD50): Acute: 4920 mg/kg [Rat]. 2402 mg/kg [Mouse].
DERMAL (LD50): Acute: 29800 mg/kg [Rabbit].

Xylene:
ORAL (LD50): Acute: 3500 mg/kg [Rat].
VAPOR (LC50): Acute: 6700 ppm 4 hour(s) [Rat].

Ethylene Glycol Monobutyl Ether:
ORAL (LD50): Acute: 1746 mg/kg [Rat]. 1519 mg/kg [Mouse]. 1414 mg/kg [Guinea pig].
DERMAL (LD50): Acute: 435 mg/kg [Rabbit]. >2000 mg/kg [Guinea pig].
VAPOR (LC50): Acute: 700 ppm 7 hour(s) [Mouse]. >633 ppm 1 hour(s) [Guinea pig].

Section 12. Ecological Information

Ecotoxicity Not available.

Biodegradable/OECD Not available.

Section 13. Disposal Considerations

Waste Information Waste must be disposed of in accordance with federal, state and local environmental control regulations.

Waste Stream Code: D001, D041
Classification: - (Hazardous waste.)
Origin: - (RCRA waste.)

Consult your local or regional authorities.

Section 14. Transport Information

Proper shipping name Consumer Commodity

DOT Classification ORM-D

UN number Not regulated.

Section 15. Regulatory Information

U.S. Federal Regulations SARA 313 toxic chemical notification and release reporting:
Trichloroethylene,
Xylene, Ethylbenzene
Ethylene Glycol Monobutyl Ether (Glycol Ethers)

Clean Water Act (CWA) 311: Trichloroethylene; Xylene; Ethyl Benzene

Clean air act (CAA) 112 regulated toxic substances: Trichloroethylene; Xylene; Ethyl Benzene; Ethylene Glycol Monobutyl Ether (Glycol Ethers)

Section 16. Other Information

To the best of our knowledge, the information contained herein is accurate. However, neither the above named supplier nor any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein.
Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

MSDS - Fuel

CARG003822

Fuels – Gas & Diesel

Fuel

Material Safety Data Sheet

SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

DIESEL FUEL No. 2

Product Use: Fuel
Product Number(s): CPS220122 [See Section 16 for Additional Product Numbers]
Synonyms: 15 S Diesel Fuel 2, Alternative Low Aromatic Diesel (ALAD), Calco LS Diesel 2, Calco ULS DF2, Calco ULS Diesel 2, Chevron LS Diesel 2, Chevron ULS Diesel 2, Diesel Fuel Oil, Diesel Grade No. 2, Diesel No. 2-D S15, Diesel No. 2-D S500, Diesel No. 2-D S5000, Gas Oil, HS Diesel 2, HS Heating Fuel 2, Light Diesel Oil Grade No. 2-D, LS Diesel 2, LS Heating Fuel 2, Marine Diesel, RR Diesel Fuel, Texaco Diesel, Texaco Diesel No. 2, Ultra Low Sulfur Diesel 2
Company Identification
Chevron Products Company
Marketing, MSDS Coordinator
6001 Bollinger Canyon Road
San Ramon, CA 94583
United States of America

Transportation Emergency Response
CHEMTREC: (800) 424-9300 or (703) 527-3887
Health Emergency
ChevronTexaco Emergency Information Center: Located in the USA. International collect calls accepted. (800) 231-0623 or (510) 231-0623
Product Information
MSDS Requests: (800) 689-3998
Technical Information: (510) 242-5357

SPECIAL NOTES: This MSDS covers all Chevron and Calco non-CARB Diesel No. 2 Fuels. The sulfur content is less than 0.5% (mass). Red dye is added to non-taxable fuel. (MSDS 6894)

SECTION 2 COMPOSITION/ INFORMATION ON INGREDIENTS

COMPONENTS	CAS NUMBER	AMOUNT
Diesel Fuel No. 2	68476-34-6	100 %weight
Distillates, hydrodesulfurized, middle	64742-80-9	0 - 100 %weight
Distillates, straight run middle (gas oil, light)	64741-44-2	0 - 100 %weight
Kerosine	8008-20-6	0 - 25 %weight
Kerosine, hydrodesulfurized	64742-81-0	0 - 25 %weight
Distillates (petroleum), light catalytic cracked	64741-59-9	0 - 50 %weight
Naphthalene	91-20-3	0.02 - 0.2 %weight
Total sulfur	None	0 - 0.5 %weight

SECTION 3 HAZARDS IDENTIFICATION

****

EMERGENCY OVERVIEW

- COMBUSTIBLE LIQUID AND VAPOR
- HARMFUL OR FATAL IF SWALLOWED - MAY CAUSE LUNG DAMAGE IF SWALLOWED
- CAUSES SKIN IRRITATION
- POSSIBLE CANCER HAZARD - MAY CAUSE CANCER BASED ON ANIMAL DATA
- TOXIC TO AQUATIC ORGANISMS

****

IMMEDIATE HEALTH EFFECTS

Eye: Not expected to cause prolonged or significant eye irritation.

Skin: Contact with the skin causes irritation. Skin contact may cause drying or defatting of the skin. Contact with the skin is not expected to cause an allergic skin response. Symptoms may include pain, itching, discoloration, swelling, and blistering. Not expected to be harmful to internal organs if absorbed through the skin.

Ingestion: Because of its low viscosity, this material can directly enter the lungs, if swallowed, or if subsequently vomited. Once in the lungs it is very difficult to remove and can cause severe injury or death. May be irritating to mouth, throat, and stomach. Symptoms may include pain, nausea, vomiting, and diarrhea.

Inhalation: Mists of this material may cause respiratory irritation. Symptoms of respiratory irritation may include coughing and difficulty breathing. Breathing this material at concentrations above the recommended exposure limits may cause central nervous system effects. Central nervous system effects may include headache, dizziness, nausea, vomiting, weakness, loss of coordination, blurred vision, drowsiness, confusion, or disorientation. At extreme exposures, central nervous system effects may include respiratory depression, tremors or convulsions, loss of consciousness, coma or death.

DELAYED OR OTHER HEALTH EFFECTS:

Cancer: Prolonged or repeated exposure to this material may cause cancer. Whole diesel engine exhaust has been classified as a Group 2A carcinogen (probably carcinogenic to humans) by the International Agency for Research on Cancer (IARC). Diesel exhaust particulate has been classified as reasonably anticipated to be a human carcinogen in the National Toxicology Program's Ninth Report on Carcinogens. The National Institute of Occupational Safety and Health (NIOSH) has recommended that whole diesel exhaust be regarded as potentially causing cancer. Diesel engine exhaust is known to the State of California to cause cancer. Contains naphthalene, which has been classified as a Group 2B carcinogen (possibly carcinogenic to humans) by the International Agency for Research on Cancer (IARC).

See Section 11 for additional information. Risk depends on duration and level of exposure.

SECTION 4 FIRST AID MEASURES

Eye: No specific first aid measures are required. As a precaution, remove contact lenses, if worn, and flush eyes with water.

Skin: Wash skin with water immediately and remove contaminated clothing and shoes. Get medical attention if any symptoms develop. To remove the material from skin, use soap and water. Discard contaminated clothing and shoes or thoroughly clean before reuse.

Ingestion: If swallowed, get immediate medical attention. Do not induce vomiting. Never give anything by mouth to an unconscious person. If swallowed, get medical attention. Do not induce vomiting. Never give anything by mouth to an unconscious person.

Inhalation: Move the exposed person to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention if breathing difficulties continue.

Note to Physicians: Ingestion of this product or subsequent vomiting may result in aspiration of light hydrocarbon liquid, which may cause pneumonitis.

SECTION 5 FIRE FIGHTING MEASURES

See Section 7 for proper handling and storage.

FIRE CLASSIFICATION:

OSHA Classification (29 CFR 1910.1200): Combustible liquid.

NFPA RATINGS: Health: 0 Flammability: 2 Reactivity: 0

FLAMMABLE PROPERTIES:
Flashpoint: (Pensky-Martens Closed Cup) 52 °C (125 °F) (Min)
Autoignition: 257 °C (494 °F)
Flammability (Explosive) Limits (% by volume in air): Lower: 0.6 Upper: 4.7

EXTINGUISHING MEDIA: Use water fog, foam, dry chemical or carbon dioxide (CO2) to extinguish flames.
PROTECTION OF FIRE FIGHTERS:
Fire Fighting Instructions: For fires involving this material, do not enter any enclosed or confined fire space without proper protective equipment, including self-contained breathing apparatus.
Combustion Products: Highly dependent on combustion conditions. A complex mixture of airborne solids, liquids, and gases including carbon monoxide, carbon dioxide, and unidentified organic compounds will be evolved when this material undergoes combustion.

SECTION 6 ACCIDENTAL RELEASE MEASURES

Protective Measures: Eliminate all sources of ignition in the vicinity of the spill or released vapor. If this material is released into the work area, evacuate the area immediately. Monitor area with combustible gas indicator.
Spill Management: Stop the source of the release if you can do it without risk. Contain release to prevent further contamination of soil, surface water or groundwater. Clean up spill as soon as possible, observing precautions in Exposure Controls/Personal Protection. Use appropriate techniques such as applying non-combustible absorbent materials or pumping. All equipment used when handling the product must be grounded. A vapor suppressing foam may be used to reduce vapors. Use clean non-sparking tools to collect absorbed material. Where feasible and appropriate, remove contaminated soil. Place contaminated materials in disposable containers and dispose of in a manner consistent with applicable regulations.
Reporting: Report spills to local authorities and/or the U.S. Coast Guard's National Response Center at (800) 424-8802 as appropriate or required.

SECTION 7 HANDLING AND STORAGE

Precautionary Measures: Liquid evaporates and forms vapor (fumes) which can catch fire and burn with explosive force. Invisible vapor spreads easily and can be set on fire by many sources such as pilot lights, welding equipment, and electrical motors and switches. Fire hazard is greater as liquid temperature rises above 29C (85F).
Do not get in eyes, on skin, or on clothing. Do not taste or swallow. Do not breathe vapor or fumes. Do not breathe mist. Wash thoroughly after handling. Keep out of the reach of children.
Unusual Handling Hazards: WARNING! Do not use as portable heater or appliance fuel. Toxic fumes may accumulate and cause death.
General Handling Information: Avoid contaminating soil or releasing this material into sewage and drainage systems and bodies of water.
Static Hazard: Electrostatic charge may accumulate and create a hazardous condition when handling this material. To minimize this hazard, bonding and grounding may be necessary but may not, by themselves, be sufficient. Review all operations which have the potential of generating and accumulating an electrostatic charge and/or a flammable atmosphere (including tank and container filling, splash filling, tank cleaning, sampling, gauging, switch loading, filtering, mixing, agitation, and vacuum truck operations) and use appropriate mitigating procedures. For more information, refer to OSHA Standard 29 CFR 1910.106, 'Flammable and Combustible Liquids', National Fire Protection Association (NFPA 77, 'Recommended Practice on Static Electricity', and/or the American Petroleum Institute (API) Recommended Practice 2003, 'Protection Against Ignitions Arising Out of Static, Lightning, and Stray Currents'.
General Storage Information: DO NOT USE OR STORE near heat, sparks, flames, or hot surfaces . USE AND STORE ONLY IN WELL VENTILATED AREA. Keep container closed when not in use.
Container Warnings: Container is not designed to contain pressure. Do not use pressure to empty container or it may rupture with explosive force. Empty containers retain product residue (solid, liquid, and/or vapor) and can be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, static electricity, or other sources of ignition. They may explode and cause injury or death. Empty containers should be completely drained, properly closed, and promptly returned to a drum reconditioner or disposed of properly.

SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

GENERAL CONSIDERATIONS:
Consider the potential hazards of this material (see Section 3), applicable exposure limits, job activities, and other substances in the work place when designing engineering controls and selecting personal protective equipment. If

engineering controls or work practices are not adequate to prevent exposure to harmful levels of this material, the personal protective equipment listed below is recommended. The user should read and understand all instructions and limitations supplied with the equipment since protection is usually provided for a limited time or under certain circumstances.

ENGINEERING CONTROLS:
Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below the recommended exposure limits.

PERSONAL PROTECTIVE EQUIPMENT
Eye/Face Protection: No special eye protection is normally required. Where splashing is possible, wear safety glasses with side shields as a good safety practice.
Skin Protection: Wear protective clothing to prevent skin contact. Selection of protective clothing may include gloves, apron, boots, and complete facial protection depending on operations conducted. Suggested materials for protective gloves include: Chlorinated Polyethylene (or Chlorosulfonated Polyethylene), Nitrile Rubber, Polyurethane, Viton.
Respiratory Protection: Determine if airborne concentrations are below the recommended occupational exposure limits for jurisdiction of use. If airborne concentrations are above the acceptable limits, wear an approved respirator that provides adequate protection from this material, such as: Air-Purifying Respirator for Organic Vapors.
When used as a fuel, this material can produce carbon monoxide in the exhaust. Determine if airborne concentrations are below the occupational exposure limit for carbon monoxide. If not, wear an approved positive-pressure air-supplying respirator.
Use a positive pressure air-supplying respirator in circumstances where air-purifying respirators may not provide adequate protection.
Occupational Exposure Limits:

Component	Agency	TWA	STEL	Ceiling	Notation
Diesel Fuel No. 2	ACGIH	100 mg/m3	--	--	Skin A3
Diesel Fuel No. 2	CVX	--	1000 mg/m3	--	--
Kerosine	ACGIH	200 mg/m3	--	--	Skin A3
Kerosine	CVX	--	1000 mg/m3	--	--
Kerosine, hydrodesulfurized	ACGIH	200 mg/m3	--	--	Skin A3
Kerosine, hydrodesulfurized	CVX	--	1000 mg/m3	--	--
Naphthalene	ACGIH	10 ppm	15 ppm	--	A4 Skin
Naphthalene	OSHA Z-1	50 mg/m3	--	--	--

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Attention: the data below are typical values and do not constitute a specification.

Color: Varies depending on specification
Physical State: Liquid
Odor: Petroleum odor
pH: Not Applicable
Vapor Pressure: 0.04 kPa (Approximate) @ 40 °C (104 °F)
Vapor Density (Air = 1): >1
Boiling Point: 175.6 °C (348°F) - 370°C (698°F)
Solubility: Soluble in hydrocarbons; insoluble in water
Freezing Point: Not Applicable
Melting Point: Not Applicable
Specific Gravity: 0.8 - 0.88 @ 15.6 °C (60.1°F) (Typical)
Viscosity: 1.9 cSt - 4.1 cSt @ 40 °C (104°F)

SECTION 10 STABILITY AND REACTIVITY

Chemical Stability: This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

Incompatibility With Other Materials: May react with strong acids or strong oxidizing agents, such as chlorates, nitrates, peroxides, etc.
Hazardous Decomposition Products: None known (None expected)
Hazardous Polymerization: Hazardous polymerization will not occur.

SECTION 11 TOXICOLOGICAL INFORMATION

IMMEDIATE HEALTH EFFECTS
Eye Irritation: The eye irritation hazard is based on evaluation of data for similar materials or product components.
Skin Irritation: The skin irritation hazard is based on evaluation of data for similar materials or product components.
Skin Sensitization: This material did not cause skin sensitization reactions in a Buehler guinea pig test.
Acute Dermal Toxicity: LD50: >5ml/kg (rabbit).
Acute Oral Toxicity: LD50: > 5 ml/kg (rat)
Acute Inhalation Toxicity: 4 hour(s) LC50: > 5mg/l (rat).

ADDITIONAL TOXICOLOGY INFORMATION:
This product contains gas oils.
CONCAWE (product dossier 95/107) has summarized current health, safety and environmental data available for a number of gas oils, typically hydrodesulfurized middle distillates, CAS 64742-80-9, straight-run middle distillates, CAS 64741-44-2, and/or light cat-cracked distillate CAS 64741-59-9. CARCINOGENICITY: All materials tested have caused the development of skin tumors in mice, but all featured severe skin irritation and sometimes a long latency period before tumors developed. Straight-run and cracked gas oil samples were studied to determine the influence of dermal irritation on the carcinogenic activity of middle distillates. At non-irritant doses the straight-run gas oil was not carcinogenic, but at irritant doses, weak activity was demonstrated. Cracked gas oils, when diluted with mineral oil, demonstrated carcinogenic activity irrespective of the occurrence of skin irritation. Gas oils were tested on male mice to study tumor initiating/promoting activity. The results demonstrated that while a straight-run gas oil sample was neither an initiator or promotor, a blend of straight-run and FCC stock was both a tumor initiator and a promoter.
GENOTOXICITY: Hydrotreated & hydrodesulfurized gas oils range in activity from inactive to weakly positive in in-vitro bacterial mutagenicity assays. Mouse lymphoma assays on straight-run gas oils without subsequent hydrodesulphurization gave positive results in the presence of S9 metabolic activation. In-vivo bone marrow cytogenetics and sister chromatic exchange assay exhibited no activity for straight-run components with or without hydrodesulphurization. Thermally or catalytically cracked gas oils tested with in-vitro bacterial mutagenicity assays in the presence of S9 metabolic activation were shown to be mutagenic. In-vitro sister chromatic exchange assays on cracked gas oil gave equivocal results both with and without S9 metabolic activation. In-vivo bone marrow cytogenetics assay was inactive for two cracked gas oil samples. Three hydrocracked gas oils were tested with in-vitro bacterial mutagenicity assays with S9, and one of the three gave positive results. Twelve distillate fuel samples were tested with in-vitro bacterial mutagenicity assays & with S9 metabolic activation and showed negative to weakly positive results. In one series, activity was shown to be related to the PCA content of samples tested. Two in-vivo studies were also conducted. A mouse dominant lethal assay was negative for a sample of diesel fuel. In the other study, 9 samples of No 2 heating oil containing 50% cracked stocks caused a slight increase in the number of chromosomal aberrations in bone marrow cytogenetics assays. DEVELOPMENTAL TOXICITY: Diesel fuel vapor did not cause fetotoxic or teratogenic effects when pregnant rats were exposed on days 6-15 of pregnancy. Gas oils were applied to the skin of pregnant rats daily on days 0-19 of gestation. All but one (coker light gas oil) caused fetotoxicity (increased resorptions, reduced litter weight, reduced litter size) at dose levels that were also maternally toxic.

This product contains naphthalene. GENERAL TOXICITY: Exposure to naphthalene has been reported to cause methemoglobinemia and/or hemolytic anemia, especially in humans deficient in the enzyme glucose-6-phosphate dehydrogenase. Laboratory animals given repeated oral doses of naphthalene have developed cataracts. REPRODUCTIVE TOXICITY AND BIRTH DEFECTS: Naphthalene did not cause birth defects when administered orally to rabbits, rats, and mice during pregnancy, but slightly reduced litter size in mice at dose levels that were lethal to the pregnant females. Naphthalene has been reported to cross the human placenta. GENETIC TOXICITY: Naphthalene caused chromosome aberrations and sister chromatid exchanges in Chinese hamster ovary cells, but was not a mutagen in several other in-vitro tests.CARCINOGENICITY: In a study conducted by the National Toxicology Program (NTP), mice exposed to 10 or 30 ppm of naphthalene by inhalation daily for two years had chronic inflammation of the nose and lungs and increased incidences of metaplasia in those tissues. The incidence of benign lung tumors (alveolar/bronchiolar adenomas) was significantly increased in the high-dose

CARG003828

female group but not in the male groups. In another two-year inhalation study conducted by NTP, exposure of rats to 10, 30, and 60 ppm naphthalene caused increases in the incidences of a variety of nonneoplastic lesions in the nose. Increases in nasal tumors were seen in both sexes, including olfactory neuroblastomas in females at 60 ppm and adenomas of the respiratory epithelium in males at all exposure levels. The relevance of these effects to humans has not been established. No carcinogenic effect was reported in a 2-year feeding study in rats receiving naphthalene at 41 mg/kg/day. This product may contain significant amounts of Polynuclear Aromatic Hydrocarbons (PAH's) which have been shown to cause skin cancer after prolonged and frequent contact with the skin of test animals. Brief or intermittent skin contact with this product is not expected to have serious effects if it is washed from the skin. While skin cancer is unlikely to occur in human beings following use of this product, skin contact and breathing, of mists, vapors or dusts should be reduced to a minimum.

SECTION 12 ECOLOGICAL INFORMATION

ECOTOXICITY
96 hour(s) LC50: 21-210 mg/l (Salmo gairdneri)
48 hour(s) EC50: 20-210 mg/l (Daphnia magna)
72 hour(s) EC50: 2.6-25 mg/l (Raphidocellus subcapitata)
This material is expected to be toxic to aquatic organisms.

ENVIRONMENTAL FATE
On release to the environment the lighter components of diesel fuel will generally evaporate but depending on local environmental conditions (temperature, wind, mixing or wave action, soil type, etc.) the remainder may become dispersed in the water column or absorbed to soil or sediment. Diesel fuel would not be expected to be readily biodegradable. In a modified Strum test (OECD method 301B) approximately 40% biodegradation was recorded over 28 days. However, it has been shown that most hydrocarbon components of diesel fuel are degraded in soil in the presence of oxygen. Under anaerobic conditions, such as in anoxic sediments, rates of biodegradation are negligible.

SECTION 13 DISPOSAL CONSIDERATIONS

Use material for its intended purpose or recycle if possible. This material, if it must be discarded, may meet the criteria of a hazardous waste as defined by US EPA under RCRA (40 CFR 261) or other State and local regulations. Measurement of certain physical properties and analysis for regulated components may be necessary to make a correct determination. If this material is classified as a hazardous waste, federal law requires disposal at a licensed hazardous waste disposal facility.

SECTION 14 TRANSPORT INFORMATION

The description shown may not apply to all shipping situations. Consult 49CFR, or appropriate Dangerous Goods Regulations, for additional description requirements (e.g., technical name) and mode-specific or quantity-specific shipping requirements.
DOT Shipping Description: GAS OIL, Combustible Liquid, UN1202,III

IMO/IMDG Shipping Description: GAS OIL,3,UN1202,III, FLASH POINT SEE SECTION 5

ICAO/IATA Shipping Description: GAS OIL,3,UN1202,III,

SECTION 15 REGULATORY INFORMATION

EPCRA 311/312 CATEGORIES: 1. Immediate (Acute) Health Effects: YES
2. Delayed (Chronic) Health Effects: YES
3. Fire Hazard: YES
4. Sudden Release of Pressure Hazard: NO
5. Reactivity Hazard: NO

REGULATORY LISTS SEARCHED:

01-1=IARC Group 1	03=EPCRA 313
01-2A=IARC Group 2A	04=CA Proposition 65
01-2B=IARC Group 2B	05=MA RTK
02=NTP Carcinogen	06=NJ RTK
	07=PA RTK

The following components of this material are found on the regulatory lists indicated.

Diesel Fuel No. 2	07
Distillates, straight run middle (gas oil, light)	06
Kerosine	05, 06, 07
Naphthalene	01-2B, 03, 04, 05, 06, 07

CERCLA REPORTABLE QUANTITIES(RQ)/EPCRA 302 THRESHOLD PLANNING QUANTITIES(TPQ):

Component	Component RQ	Component TPQ	Product RQ
Naphthalene	100 lbs	None	55556 lbs

CHEMICAL INVENTORIES:
All components comply with the following chemical inventory requirements: AICS (Australia), DSL (Canada), EINECS (European Union), IECSC (China), KECI (Korea), PICCS (Philippines), TSCA (United States).

NEW JERSEY RTK CLASSIFICATION:
Refer to components listed in Section 2. Under the New Jersey Right-to-Know Act L. 1983 Chapter 315 N.J.S.A. 34:5A-1 et. seq., the product is to be identified as follows: DIESEL FUEL

WHMIS CLASSIFICATION:
Class B, Division 3: Combustible Liquids
Class D, Division 2, Subdivision A: Very Toxic Material - Carcinogenicity
Class D, Division 2, Subdivision B: Toxic Material - Skin or Eye Irritation

SECTION 16 OTHER INFORMATION

NFPA RATINGS: Health: 0 Flammability: 2 Reactivity: 0

(0-Least, 1-Slight, 2-Moderate, 3-High, 4-Extreme, PPE:- Personal Protection Equipment Index recommendation, *- Chronic Effect Indicator). These values are obtained using the guidelines or published evaluations prepared by the National Fire Protection Association (NFPA) or the National Paint and Coating Association (for HMIS ratings).

Additional Product Number(s): CPS225114, CPS225115, CPS225150, CPS266176, CPS270005, CPS270094, CPS270095, CPS270096, CPS271006, CPS272093, CPS272102, CPS272126, CPS272152, CPS272185, CPS272190, CPS272195, CPS272593, CPS272601, CPS272693, CPS272793, CPS273003, CPS273030, CPS273053, CPS275000
REVISION STATEMENT: This revision updates the following sections of this Material Safety Data Sheet: 1.
Revision Date: 12/13/2004

ABBREVIATIONS THAT MAY HAVE BEEN USED IN THIS DOCUMENT:

TLV - Threshold Limit Value	TWA - Time Weighted Average
STEL - Short-term Exposure Limit	PEL - Permissible Exposure Limit
	CAS - Chemical Abstract Service Number
ACGIH - American Conference of Government Industrial Hygienists	IMO/IMDG - International Maritime Dangerous Goods Code
API - American Petroleum Institute	MSDS - Material Safety Data Sheet
CVX - ChevronTexaco	NFPA - National Fire Protection Association (USA)
DOT - Department of Transportation (USA)	NTP - National Toxicology Program (USA)

IARC - International Agency for Research on Cancer	OSHA - Occupational Safety and Health Administration

Prepared according to the OSHA Hazard Communication Standard (29 CFR 1910.1200) and the ANSI MSDS Standard (Z400.1) by the ChevronTexaco Energy Research & Technology Company, 100 Chevron Way, Richmond, California 94802.

The above information is based on the data of which we are aware and is believed to be correct as of the date hereof. Since this information may be applied under conditions beyond our control and with which we may be unfamiliar and since data made available subsequent to the date hereof may suggest modifications of the information, we do not assume any responsibility for the results of its use. This information is furnished upon condition that the person receiving it shall make his own determination of the suitability of the material for his particular purpose.

Fuel

Material Safety Data Sheet

SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

CHEVRON and TEXACO REGULAR UNLEADED GASOLINES

Product Number(s): CPS201000 [See Section 16 for Additional Product Numbers]
Synonyms: Calco Regular Unleaded Gasoline, Chevron Regular Unleaded Gasoline, Texaco Unleaded Gasoline
Company Identification
Chevron Products Company
Marketing, MSDS Coordinator
6001 Bollinger Canyon Road
San Ramon, CA 94583
United States of America

Transportation Emergency Response
CHEMTREC: (800) 424-9300 or (703) 527-3887
Health Emergency
ChevronTexaco Emergency Information Center: Located in the USA. International collect calls accepted. (800) 231-0623 or (510) 231-0623
Product Information
Technical Information: (510) 242-5357

SPECIAL NOTES: This MSDS applies to: all motor gasoline.

SECTION 2 COMPOSITION/ INFORMATION ON INGREDIENTS

COMPONENTS	CAS NUMBER	AMOUNT
Gasoline	86290-81-5	100 %volume
Benzene	71-43-2	0.1 - 4.9 %volume
Toluene (methylbenzene)	108-88-3	1 - 17 %volume
Ethyl benzene	100-41-4	0.1 - 3 %volume
Xylene (contains o-, m-, & p- xylene isomers in varying amounts)	1330-20-7	1 - 15 %volume
Butane	106-97-8	1 - 12 %volume
Heptane	142-82-5	1 - 4 %volume
Hexane	110-54-3	1 - 5 %volume
Cyclohexane	110-82-7	1 - 3 %volume
Methylcyclohexane	108-87-2	1 - 2 %volume
Pentane, 2,2,4-trimethyl- (Isooctane)	540-84-1	1 - 13 %volume
Naphthalene	91-20-3	0.1 - 2 %volume
Ethanol	64-17-5	0 - 10 %volume
Methyl tert-butyl ether (MTBE)	1634-04-4	0 - 15 %volume

Tertiary amyl methyl ether (TAME)	994-05-8	0 - 17 %volume
Ethyl tert-butyl ether (ETBE)	637-92-3	0 - 18 %volume

Motor gasoline is considered a mixture by EPA under the Toxic Substances Control Act (TSCA). The refinery streams used to blend motor gasoline are all on the TSCA Chemical Substances Inventory. The appropriate CAS number for refinery blended motor gasoline is 86290-81-5. The product specifications of motor gasoline sold in your area will depend on applicable Federal and State regulations.

SECTION 3 HAZARDS IDENTIFICATION

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EMERGENCY OVERVIEW

- EXTREMELY FLAMMABLE LIQUID AND VAPOR. VAPOR MAY CAUSE FLASH FIRE
- HARMFUL OR FATAL IF SWALLOWED - MAY CAUSE LUNG DAMAGE IF SWALLOWED
- VAPOR HARMFUL
- CAUSES EYE AND SKIN IRRITATION
- LONG-TERM EXPOSURE TO VAPOR HAS CAUSED CANCER IN LABORATORY ANIMALS
- KEEP OUT OF REACH OF CHILDREN
- TOXIC TO AQUATIC ORGANISMS

****

IMMEDIATE HEALTH EFFECTS
Eye: Contact with the eyes causes irritation. Symptoms may include pain, tearing, reddening, swelling and impaired vision.
Skin: Contact with the skin causes irritation. Skin contact may cause drying or defatting of the skin. Contact with the skin is not expected to cause an allergic skin response. Symptoms may include pain, itching, discoloration, swelling, and blistering. Not expected to be harmful to internal organs if absorbed through the skin.
Ingestion: Because of its low viscosity, this material can directly enter the lungs, if swallowed, or if subsequently vomited. Once in the lungs it is very difficult to remove and can cause severe injury or death.
Inhalation: The vapor or fumes from this material may cause respiratory irritation. Symptoms of respiratory irritation may include coughing and difficulty breathing. Breathing this material at concentrations above the recommended exposure limits may cause central nervous system effects. Central nervous system effects may include headache, dizziness, nausea, vomiting, weakness, loss of coordination, blurred vision, drowsiness, confusion, or disorientation. At extreme exposures, central nervous system effects may include respiratory depression, tremors or convulsions, loss of consciousness, coma or death.

DELAYED OR OTHER HEALTH EFFECTS:
Reproduction and Birth Defects: This material is not expected to cause birth defects or other harm to the developing fetus based on animal data.
Cancer: Prolonged or repeated exposure to this material may cause cancer. Gasoline has been classified as a Group 2B carcinogen (possibly carcinogenic to humans) by the International Agency for Research on Cancer (IARC).

Whole gasoline exhaust has been classified as a Group 2B carcinogen (possibly carcinogenic to humans) by the International Agency for Research on Cancer (IARC).

Contains benzene, which has been classified as a carcinogen by the National Toxicology Program (NTP) and a Group 1 carcinogen (carcinogenic to humans) by the International Agency for Research on Cancer (IARC).
Contains ethylbenzene which has been classified as a Group 2B carcinogen (possibly carcinogenic to humans) by the International Agency for Research on Cancer (IARC).
Contains naphthalene, which has been classified as a Group 2B carcinogen (possibly carcinogenic to humans) by the International Agency for Research on Cancer (IARC).
See Section 11 for additional information. Risk depends on duration and level of exposure.

SECTION 4 FIRST AID MEASURES

Eye: Flush eyes with water immediately while holding the eyelids open. Remove contact lenses, if worn, after initial flushing, and continue flushing for at least 15 minutes. Get medical attention if irritation persists.
Skin: Wash skin with water immediately and remove contaminated clothing and shoes. Get medical attention if any symptoms develop. To remove the material from skin, use soap and water. Discard contaminated clothing and shoes or thoroughly clean before reuse.
Ingestion: If swallowed, get immediate medical attention. Do not induce vomiting. Never give anything by mouth to an unconscious person. If swallowed, get medical attention. Do not induce vomiting. Never give anything by mouth to an unconscious person.
Inhalation: Move the exposed person to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention if breathing difficulties continue.
Note to Physicians: Ingestion of this product or subsequent vomiting may result in aspiration of light hydrocarbon liquid, which may cause pneumonitis.

SECTION 5 FIRE FIGHTING MEASURES

See Section 7 for proper handling and storage.

FIRE CLASSIFICATION:
OSHA Classification (29 CFR 1910.1200): Flammable liquid.

NFPA RATINGS: Health: 1 Flammability: 3 Reactivity: 0

FLAMMABLE PROPERTIES:
Flashpoint: (Tagliabue Closed Cup ASTM D56) < -45 °C (< -49 °F)
Autoignition: > 280 °C (> 536 °F)
Flammability (Explosive) Limits (% by volume in air): Lower: 1.4 Upper: 7.6 (Typical)

EXTINGUISHING MEDIA: Dry Chemical, CO2, AFFF Foam or alcohol resistant foam if >15% volume polar solvents (oxygenates).
PROTECTION OF FIRE FIGHTERS:
Fire Fighting Instructions: Use water spray to cool fire-exposed containers and to protect personnel. For fires involving this material, do not enter any enclosed or confined fire space without proper protective equipment, including self-contained breathing apparatus.
Combustion Products: Highly dependent on combustion conditions. A complex mixture of airborne solids, liquids, and gases including carbon monoxide, carbon dioxide, and unidentified organic compounds will be evolved when this material undergoes combustion.

SECTION 6 ACCIDENTAL RELEASE MEASURES

Protective Measures: Eliminate all sources of ignition in the vicinity of the spill or released vapor. If this material is released into the work area, evacuate the area immediately. Monitor area with combustible gas indicator.
Spill Management: Stop the source of the release if you can do it without risk. Contain release to prevent further contamination of soil, surface water or groundwater. Clean up spill as soon as possible, observing precautions in Exposure Controls/Personal Protection. Use appropriate techniques such as applying non-combustible absorbent materials or pumping. All equipment used when handling the product must be grounded. A vapor suppressing foam may be used to reduce vapors. Use clean non-sparking tools to collect absorbed material. Where feasible and appropriate, remove contaminated soil. Place contaminated materials in disposable containers and dispose of in a manner consistent with applicable regulations.
Reporting: Report spills to local authorities and/or the U.S. Coast Guard's National Response Center at (800) 424-8802 as appropriate or required. This material is covered by EPA's Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) Petroleum Exclusion. Therefore, releases to the environment may not be reportable under CERCLA.

SECTION 7 HANDLING AND STORAGE

Precautionary Measures: READ AND OBSERVE ALL PRECAUTIONS ON PRODUCT LABEL. This product presents an extreme fire hazard. Liquid very quickly evaporates, even at low temperatures, and forms vapor (fumes) which can catch fire and burn with explosive violence. Invisible vapor spreads easily and can be set on fire by many sources such as pilot lights, welding equipment, and electrical motors and switches. Do not store in open or unlabeled containers. Use only as a motor fuel. Do not use for cleaning, pressure appliance fuel, or any

other such use. Never siphon gasoline by mouth.
Do not get in eyes, on skin, or on clothing. Do not taste or swallow. Do not breathe vapor or fumes. Wash thoroughly after handling. Keep out of the reach of children.
Unusual Handling Hazards: WARNING! Do not use as portable heater or appliance fuel. Toxic fumes may accumulate and cause death.
General Handling Information: Avoid contaminating soil or releasing this material into sewage and drainage systems and bodies of water.
Static Hazard: Electrostatic charge may accumulate and create a hazardous condition when handling this material. To minimize this hazard, bonding and grounding may be necessary but may not, by themselves, be sufficient. Review all operations which have the potential of generating and accumulating an electrostatic charge and/or a flammable atmosphere (including tank and container filling, splash filling, tank cleaning, sampling, gauging, switch loading, filtering, mixing, agitation, and vacuum truck operations) and use appropriate mitigating procedures. For more information, refer to OSHA Standard 29 CFR 1910.106, 'Flammable and Combustible Liquids', National Fire Protection Association (NFPA 77, 'Recommended Practice on Static Electricity', and/or the American Petroleum Institute (API) Recommended Practice 2003, 'Protection Against Ignitions Arising Out of Static, Lightning, and Stray Currents'. Improper filling of portable gasoline containers creates danger of fire. Only dispense gasoline into approved and properly labeled gasoline containers. Always place portable containers on the ground. Be sure pump nozzle is in contact with the container while filling. Do not use a nozzle's lock-open device. Do not fill portable containers that are inside a vehicle or truck/trailer bed.
General Storage Information: DO NOT USE OR STORE near heat, sparks, flames, or hot surfaces . USE AND STORE ONLY IN WELL VENTILATED AREA. Keep container closed when not in use.
Container Warnings: Container is not designed to contain pressure. Do not use pressure to empty container or it may rupture with explosive force. Empty containers retain product residue (solid, liquid, and/or vapor) and can be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, static electricity, or other sources of ignition. They may explode and cause injury or death. Empty containers should be completely drained, properly closed, and promptly returned to a drum reconditioner or disposed of properly.

SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

GENERAL CONSIDERATIONS:
Consider the potential hazards of this material (see Section 3), applicable exposure limits, job activities, and other substances in the work place when designing engineering controls and selecting personal protective equipment. If engineering controls or work practices are not adequate to prevent exposure to harmful levels of this material, the personal protective equipment listed below is recommended. The user should read and understand all instructions and limitations supplied with the equipment since protection is usually provided for a limited time or under certain circumstances.

ENGINEERING CONTROLS:
Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below the recommended exposure limits.

PERSONAL PROTECTIVE EQUIPMENT
Eye/Face Protection: No special eye protection is normally required. Where splashing is possible, wear safety glasses with side shields as a good safety practice.
Skin Protection: No special protective clothing is normally required. Where splashing is possible, select protective clothing depending on operations conducted, physical requirements and other substances in the workplace. Suggested materials for protective gloves include: Chlorinated Polyethylene (or Chlorosulfonated Polyethylene), Nitrile Rubber, Polyurethane, Viton.
Respiratory Protection: Determine if airborne concentrations are below the recommended occupational exposure limits for jurisdiction of use. If airborne concentrations are above the acceptable limits, wear an approved respirator that provides adequate protection from this material, such as: Air-Purifying Respirator for Organic Vapors.
When used as a fuel, this material can produce carbon monoxide in the exhaust. Determine if airborne concentrations are below the occupational exposure limit for carbon monoxide. If not, wear an approved positive-pressure air-supplying respirator.
Use a positive pressure air-supplying respirator in circumstances where air-purifying respirators may not provide adequate protection.
Occupational Exposure Limits:

Component	Agency	TWA	STEL	Ceiling	Notation
Benzene	ACGIH	.5 ppm (weight)	2.5 ppm	--	Skin A1

			(weight)		
Benzene	OSHA SRS	1 ppm (weight)	5 ppm (weight)	--	--
Benzene	OSHA Z-2	10 ppm (weight)	--	25 ppm (weight)	--
Butane	ACGIH	800 ppm (weight)	--	--	--
Cyclohexane	ACGIH	100 ppm (weight)	--	--	--
Cyclohexane	OSHA Z-1	1050 mg/m3	--	--	--
Ethanol	ACGIH	1000 ppm (weight)	--	--	A4
Ethanol	OSHA Z-1	1900 mg/m3	--	--	--
Ethyl benzene	ACGIH	100 ppm (weight)	125 ppm (weight)	--	A3
Ethyl benzene	OSHA Z-1	435 mg/m3	--	--	--
Ethyl tert-butyl ether (ETBE)	ACGIH	5 ppm (weight)	--	--	--
Heptane	ACGIH	400 ppm (weight)	500 ppm (weight)	--	--
Heptane	OSHA Z-1	2000 mg/m3	--	--	--
Hexane	ACGIH	50 ppm (weight)	--	--	Skin
Hexane	OSHA Z-1	1800 mg/m3	--	--	--
Methyl tert-butyl ether (MTBE)	ACGIH	50 ppm (weight)	--	--	A3
Methyl tert-butyl ether (MTBE)	CVX	--	50 ppm	--	--
Methylcyclohexane	ACGIH	400 ppm (weight)	--	--	--
Methylcyclohexane	OSHA Z-1	2000 mg/m3	--	--	--
Naphthalene	ACGIH	10 ppm	15 ppm	--	A4 Skin
Naphthalene	OSHA Z-1	50 mg/m3	--	--	--
Pentane, 2,2,4-trimethyl- (Isooctane)	ACGIH	300 ppm (weight)	--	--	--
Pentane, 2,2,4-trimethyl- (Isooctane)	OSHA Z-1	2350 mg/m3	--	--	--
Tertiary amyl methyl ether (TAME)	ACGIH	20 ppm (weight)	--	--	--
Tertiary amyl methyl ether (TAME)	CVX	--	50 ppm	--	--
Toluene (methylbenzene)	ACGIH	50 ppm (weight)	--	--	Skin A4
Toluene (methylbenzene)	OSHA Z-2	200 ppm (weight)	--	300 ppm (weight)	--
Xylene (contains o-, m-, & p- xylene isomers in varying amounts)	ACGIH	100 ppm (weight)	150 ppm (weight)	--	A4
Xylene (contains o-, m-, & p- xylene isomers in varying amounts)	OSHA Z-1	435 mg/m3	--	--	--

Refer to the OSHA Benzene Standard (29 CFR 1910.1028) and Table Z-2 for detailed training, exposure monitoring, respiratory protection and medical surveillance requirements before using this product.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Attention: the data below are typical values and do not constitute a specification.

Color: Colorless to yellow
Physical State: Liquid
Odor: Petroleum odor
pH: Not Applicable
Vapor Pressure: 5 psi - 15 psi (Typical) @ 37.8 °C (100 °F)
Vapor Density (Air = 1): 3 - 4 (Typical)
Boiling Point: 37.8 °C (100°F) - 204.4°C (400°F) (Typical)
Solubility: Insoluble in water; miscible with most organic solvents.

Freezing Point: Not Applicable
Melting Point: Not Applicable
Specific Gravity: 0.7 g/ml - 0.8 g/ml @ 15.6 °C (60.1°F) (Typical)
Viscosity: <1 SUS @ 37.8 °C (100°F)

SECTION 10 STABILITY AND REACTIVITY

Chemical Stability: This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.
Incompatibility With Other Materials: May react with strong acids or strong oxidizing agents, such as chlorates, nitrates, peroxides, etc.
Hazardous Decomposition Products: None known (None expected)
Hazardous Polymerization: Hazardous polymerization will not occur.

SECTION 11 TOXICOLOGICAL INFORMATION

IMMEDIATE HEALTH EFFECTS
Eye Irritation: The Draize eye irritation mean score in rabbits for a 24-hour exposure was: 0/110.
Skin Irritation: For a 4-hour exposure, the Primary Irritation Index (PII) in rabbits is: 4.8/8.0.
Skin Sensitization: This material did not cause skin sensitization reactions in a Buehler guinea pig test.
Acute Dermal Toxicity: LD50: >3.75g/kg (rabbit).
Acute Oral Toxicity: LD50: >5 ml/kg (rat)
Acute Inhalation Toxicity: 4 hour(s) LD50: >20000mg/m3 vapor (rat).
Subchronic Effects: Exposure of rats for 13 weeks (6 hr/day for 5 days/week) to the light ends of gasoline (up to 20,000 mg/m3) resulted in minimal responses of toxicity. There were no indications of neurotoxicity based morphological, functional and biochemical indices. There was also no evidence of immunotoxicity in the rats. However, when rats were exposed to gasoline vapor containing ethanol up to 20,000 mg/m3 there was evidence of both humoral immune suppression and mild astrogliosis. **Reproduction and Birth Defects:** Exposure of rats to the light ends of gasoline at up to 20,000 mg/m3 had generally no impact upon reproductive abilities and did not cause birth defects.
Genetic Toxicity: Gasoline was not mutagenic, with or without activation, in the Ames assay (Salmonella typhimurium), Saccharamyces cerevisesae, or mouse lymphoma assays. In addition, point mutations were not induced in human lymphocytes. Gasoline was not mutagenic when tested in the mouse dominant lethal assay. Administration of gasoline to rats did not cause chromosomal aberrations in their bone marrow cells. Inhalation exposure of rats to the light ends of gasoline caused increased sister chromatid exchange in their peripheral white blood cells but did not cause an increase in micronucleated red blood cells in their bone marrow.
ADDITIONAL TOXICOLOGY INFORMATION:
Gasolines are highly volatile and can produce significant concentrations of vapor at ambient temperatures. Gasoline vapor is heavier than air and at high concentrations may accumulate in confined spaces to present both safety and heath hazards. When vapor exposures are low, or short duration and infrequent, such as during refueling and tanker loading/unloading, neither total hydrocarbon nor components such as benzene are likely to result in any adverse health effects. In situations such as accidents or spills where exposure to gasoline vapor is potentially high, attention should be paid to potential toxic effects of specific components. Information about specific components in gasoline can be found in Sections 2, 8 and 15 of this MSDS. More detailed information on the health hazard of specific gasoline components can be obtained calling the ChevronTexaco Emergency Information Center (see Section 1 for phone numbers).
Pathological misuse of solvents and gasoline, involving repeated and prolonged exposure to high concentrations of vapor is a significant exposure on which there are many reports in the medical literature. As with other solvents, persistent abuse involving repeated and prolonged exposures to high concentrations of vapor has been reported to result in central nervous system damage and eventually, death. In a study in which ten human volunteers were exposed for 30 minutes to approximately 200, 500 or 1000 ppm concentrations of gasoline vapor, irritation of the eyes was the only significant effect observed, based on both subjective and objective assessments.
Lifetime inhalation of wholly vaporized unleaded gasoline at 2056 ppm has caused increased liver tumors in female mice and kidney cancer in male rats. In their 1988 review of carcinogenic risk from gasoline, The International Agency for Research on Cancer (IARC) noted that, because published epidemiology studies did not include any exposure data, only occupations where gasoline exposure may have occurred were reviewed. These included gasoline service station attendants and automobile mechanics. IARC also noted that there was no opportunity to separate effects of combustion products from those of gasoline itself. Although IARC allocated gasoline a final overall classification of Group 2B, i.e. possibly carcinogenic to humans, this was based on limited evidence in experimental animals plus supporting evidence including the presence in gasoline of benzene. The

actual evidence for carcinogenicity in humans was considered inadequate.
To explore the health effects of workers potentially exposed to gasoline vapors in the marketing and distribution sectors of the petroleum industry, the American Petroleum Institute sponsored a cohort mortality study (Publication 4555), a nested case-control study (Publication 4551), and an exposure assessment study (Publication 4552). Histories of exposure to gasoline were reconstructed for cohort of more than 18,000 employees from four companies for the time period between 1946 and 1985. The results of the cohort mortality study indicated that there was no increased mortality from either kidney cancer or leukemia among marketing and marine distribution employees who were exposed to gasoline in the petroleum industry, when compared to the general population. More importantly, based on internal comparisons, there was no association between mortality from kidney cancer or leukemia and various indices of gasoline exposure. In particular, neither duration of employment, duration of exposure, age at first exposure, year of first exposure, job category, cumulative exposure, frequency of peak exposure, nor average intensity of exposure had any effect on kidney cancer or leukemia mortality. The results of the nested case-control study confirmed the findings of the original cohort study. That is, exposure to gasoline at the levels experienced by this cohort of distribution workers is not a significant risk factor for leukemia (all cell types), acute myeloid leukemia, kidney cancer or multiple myeloma.

SECTION 12 ECOLOGICAL INFORMATION

ECOTOXICITY
96 hour(s) LC50: 8.3 mg/l (Cyprinodon variegatus)
96 hour(s) LC50: 1.8 mg/l (Mysidopsis bahia)
48 hour(s) LC50: 3.0 mg/l (Daphnia magna)
96 hour(s) LC50: 2.7 mg/l (Oncorhynchus mykiss)
This material is expected to be toxic to aquatic organisms. The bulk of the available literature on gasoline relates to the environmental impact of monoaromatic (BTEX) and diaromatic (naphthalene, methylnaphthalenes) constituents. In general, non-oxygenated gasoline exhibits some short-term toxicity to freshwater and marine organisms, especially under closed vessel or flow-through exposure conditions in the laboratory. The components which are the most prominent in the water soluble fraction and cause aquatic toxicity, are also highly volatile and can be readily biodegraded by microorganisms.

Gasoline studies have been conducted in the laboratory under a variety of test conditions with a range of fish and invertebrate species. An even more extensive database is available on the aquatic toxicity of individual aromatic constituents. The majority of published studies do not identify the type of gasoline evaluated, or even provide distinguishing characteristics such as aromatic content or presence of lead alkyls. As a result, comparison of results among studies using open and closed vessels, different ages and species of test animals and different gasoline types, is difficult.

ENVIRONMENTAL FATE
This material is expected to be readily biodegradable. Following spillage, the more volatile components of gasoline will be rapidly lost, with concurrent dissolution of these and other constituents into the water. Factors such as local environmental conditions (temperature, wind, mixing or wave action, soil type, etc), photo-oxidation, biodegradation and adsorption onto suspended sediments, can contribute to the weathering of spilled gasoline.

The aqueous solubility of non-oxygenated unleaded gasoline, based on analysis of benzene, toluene, ethylbenzene+xylenes and naphthalene, is reported to be 112 mg/l. Solubility data on individual gasoline constituents also available.

SECTION 13 DISPOSAL CONSIDERATIONS

Use material for its intended purpose or recycle if possible. This material, if it must be discarded, may meet the criteria of a hazardous waste as defined by US EPA under RCRA (40 CFR 261) or other State and local regulations. Measurement of certain physical properties and analysis for regulated components may be necessary to make a correct determination. If this material is classified as a hazardous waste, federal law requires disposal at a licensed hazardous waste disposal facility.

SECTION 14 TRANSPORT INFORMATION

CARG003838

The description shown may not apply to all shipping situations. Consult 49CFR, or appropriate Dangerous Goods Regulations, for additional description requirements (e.g., technical name) and mode-specific or quantity-specific shipping requirements.

DOT Shipping Description: GASOLINE,3,UN1203,II

IMO/IMDG Shipping Description: GASOLINE,3,UN1203,II,FLASH POINT SEE SECTION 5

ICAO/IATA Shipping Description: GASOLINE, 3, UN1203, II

SECTION 15 REGULATORY INFORMATION

EPCRA 311/312 CATEGORIES: 1. Immediate (Acute) Health Effects: YES
2. Delayed (Chronic) Health Effects: YES
3. Fire Hazard: YES
4. Sudden Release of Pressure Hazard: NO
5. Reactivity Hazard: NO

REGULATORY LISTS SEARCHED:

01-1=IARC Group 1	03=EPCRA 313
01-2A=IARC Group 2A	04=CA Proposition 65
01-2B=IARC Group 2B	05=MA RTK
02=NTP Carcinogen	06=NJ RTK
	07=PA RTK

The following components of this material are found on the regulatory lists indicated.

Benzene	01-1, 02, 03, 04, 05, 06, 07
Butane	05, 06, 07
Cyclohexane	03, 05, 06, 07
Ethanol	05, 06, 07
Ethyl benzene	01-2B, 03, 05, 06, 07
Gasoline	01-2B, 07
Heptane	05, 06, 07
Hexane	03, 05, 06, 07
Methyl tert-butyl ether (MTBE)	03, 05, 06, 07
Methylcyclohexane	05, 06, 07
Naphthalene	01-2B, 03, 04, 05, 06, 07
Pentane, 2,2,4-trimethyl- (Isooctane)	05, 06, 07
Toluene (methylbenzene)	03, 04, 05, 06, 07
Xylene (contains o-, m-, & p- xylene isomers in varying amounts)	03, 05, 06, 07

CERCLA REPORTABLE QUANTITIES(RQ)/EPCRA 302 THRESHOLD PLANNING QUANTITIES(TPQ):

Component	Component RQ	Component TPQ	Product RQ
Benzene	10 lbs	None	186 lbs
Butane	100 lbs	None	725 lbs
Cyclohexane	1000 lbs	None	34188 lbs
Ethanol	100 lbs	None	1934 lbs
Ethyl benzene	1000 lbs	None	34964 lbs
Gasoline	100 lbs	None	107 lbs
Heptane	100 lbs	None	3644 lbs
Hexane	5000 lbs	None	129149 lbs
Methyl tert-butyl ether (MTBE)	1000 lbs	None	7513 lbs

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Methylcyclohexane	100 lbs	None	4278 lbs
Naphthalene	100 lbs	None	4000 lbs
Pentane, 2,2,4-trimethyl- (Isooctane)	1000 lbs	None	6270 lbs
Toluene (methylbenzene)	1000 lbs	None	5480 lbs
Xylene (contains o-, m-, & p- xylene isomers in varying amounts)	100 lbs	None	649 lbs

CHEMICAL INVENTORIES:
All components comply with the following chemical inventory requirements: DSL (Canada), EINECS (European Union), KECI (Korea), TSCA (United States).

WHMIS CLASSIFICATION:
Class B, Division 2: Flammable Liquids
Class D, Division 2, Subdivision A: Very Toxic Material - Carcinogenicity
Class D, Division 2, Subdivision B: Toxic Material - Skin or Eye Irritation

SECTION 16 OTHER INFORMATION

NFPA RATINGS: Health: 1 Flammability: 3 Reactivity: 0

(0-Least, 1-Slight, 2-Moderate, 3-High, 4-Extreme, PPE:- Personal Protection Equipment Index recommendation, *- Chronic Effect Indicator). These values are obtained using the guidelines or published evaluations prepared by the National Fire Protection Association (NFPA) or the National Paint and Coating Association (for HMIS ratings).
Additional Product Number(s): CPS201023, CPS201054, CPS201055, CPS201075, CPS201090, CPS201105, CPS201106, CPS201120, CPS201121, CPS201122, CPS201126, CPS201128, CPS201131, CPS201136, CPS201141, CPS201142, CPS201148, CPS201153, CPS201158, CPS201161, CPS201162, CPS201168, CPS201181, CPS201185, CPS201186, CPS201188, CPS201216, CPS201217, CPS201218, CPS201236, CPS201237, CPS201238, CPS201266, CPS201267, CPS201268, CPS201277, CPS201278, CPS201279, CPS201286, CPS201287, CPS201289, CPS201296, CPS201297, CPS201298, CPS201849, CPS201850, CPS201855, CPS201856, CPS201857, CPS204000, CPS204001, CPS204002, CPS204003, CPS204010, CPS204011, CPS204022, CPS204023, CPS204046, CPS204047, CPS204070, CPS204071, CPS204088, CPS204089, CPS204104, CPS204105, CPS204116, CPS204117, CPS204140, CPS204141, CPS204164, CPS204165, CPS204188, CPS204189, CPS204200, CPS204201, CPS204212, CPS204213, CPS204224, CPS204225, CPS204248, CPS204249, CPS204272, CPS204273, CPS204290, CPS204291, CPS204322, CPS204323, CPS204324, CPS204350, CPS204352, CPS204354, CPS204356, CPS204358, CPS204359, CPS204364, CPS204365, CPS204370, CPS204371, CPS204376, CPS204377, CPS204382, CPS204383, CPS204388, CPS204389, CPS204394, CPS204395, CPS204400, CPS204401, CPS204406, CPS204407, CPS204412, CPS204413, CPS204418, CPS204419, CPS204424, CPS204425, CPS204430, CPS204431, CPS204436, CPS204437, CPS204442, CPS204446, CPS204450, CPS204454, CPS204458, CPS204462, CPS204466, CPS204467, CPS204484, CPS204485, CPS204502, CPS204503, CPS204520, CPS204521, CPS204538, CPS204539, CPS204556, CPS204557, CPS204574, CPS204575, CPS204592, CPS204593, CPS204610, CPS204611, CPS204628, CPS204629, CPS204646, CPS204647, CPS204664, CPS204665, CPS204682, CPS204690, CPS204691, CPS204696, CPS204697, CPS204702, CPS204703, CPS204708, CPS204709, CPS204721, CPS204722, CPS204727, CPS204728, CPS241765
REVISION STATEMENT: This revision updates the following sections of this Material Safety Data Sheet: 1, 2, 8, 11, 14, 15.
Revision Date: 06/25/2004

ABBREVIATIONS THAT MAY HAVE BEEN USED IN THIS DOCUMENT:

TLV - Threshold Limit Value	TWA - Time Weighted Average
STEL - Short-term Exposure Limit	PEL - Permissible Exposure Limit
	CAS - Chemical Abstract Service Number
ACGIH - American Conference of Government Industrial Hygienists	IMO/IMDG - International Maritime Dangerous Goods Code

API - American Petroleum Institute	MSDS - Material Safety Data Sheet
CVX - ChevronTexaco	NFPA - National Fire Protection Association (USA)
DOT - Department of Transportation (USA)	NTP - National Toxicology Program (USA)
IARC - International Agency for Research on Cancer	OSHA - Occupational Safety and Health Administration

Prepared according to the OSHA Hazard Communication Standard (29 CFR 1910.1200) and the ANSI MSDS Standard (Z400.1) by the ChevronTexaco Energy Research & Technology Company, 100 Chevron Way, Richmond, California 94802.

The above information is based on the data of which we are aware and is believed to be correct as of the date hereof. Since this information may be applied under conditions beyond our control and with which we may be unfamiliar and since data made available subsequent to the date hereof may suggest modifications of the information, we do not assume any responsibility for the results of its use. This information is furnished upon condition that the person receiving it shall make his own determination of the suitability of the material for his particular purpose.

Fuel

Material Safety Data Sheet

SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

CHEVRON and TEXACO MID-GRADE UNLEADED GASOLINES

Product Number(s): CPS201001 [See Section 16 for Additional Product Numbers]
Synonyms: Calco Mid-Grade Unleaded Gasoline, Chevron Mid-Grade Unleaded Gasoline, Chevron Plus Unleaded Gasoline, Texaco Power Plus Gasoline
Company Identification
Chevron Products Company
Marketing, MSDS Coordinator
6001 Bollinger Canyon Road
San Ramon, CA 94583
United States of America

Transportation Emergency Response
CHEMTREC: (800) 424-9300 or (703) 527-3887
Health Emergency
ChevronTexaco Emergency Information Center: Located in the USA. International collect calls accepted. (800) 231-0623 or (510) 231-0623
Product Information
Technical Information: (510) 242-5357

SPECIAL NOTES: This MSDS applies to: all motor gasoline.

SECTION 2 COMPOSITION/ INFORMATION ON INGREDIENTS

COMPONENTS	CAS NUMBER	AMOUNT
Gasoline	86290-81-5	100 %volume
Benzene	71-43-2	0.1 - 4.9 %volume
Toluene (methylbenzene)	108-88-3	1 - 17 %volume
Ethyl benzene	100-41-4	0.1 - 3 %volume
Xylene (contains o-, m-, & p- xylene isomers in varying amounts)	1330-20-7	1 - 15 %volume
Butane	106-97-8	1 - 12 %volume
Heptane	142-82-5	1 - 4 %volume
Hexane	110-54-3	1 - 5 %volume
Cyclohexane	110-82-7	1 - 3 %volume
Methylcyclohexane	108-87-2	1 - 2 %volume
Pentane, 2,2,4-trimethyl- (Isooctane)	540-84-1	1 - 13 %volume
Naphthalene	91-20-3	0.1 - 2 %volume
Ethanol	64-17-5	0 - 10 %volume

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Methyl tert-butyl ether (MTBE)	1634-04-4	0 - 15 %volume
Tertiary amyl methyl ether (TAME)	994-05-8	0 - 17 %volume
Ethyl tert-butyl ether (ETBE)	637-92-3	0 - 18 %volume

Motor gasoline is considered a mixture by EPA under the Toxic Substances Control Act (TSCA). The refinery streams used to blend motor gasoline are all on the TSCA Chemical Substances Inventory. The appropriate CAS number for refinery blended motor gasoline is 86290-81-5. The product specifications of motor gasoline sold in your area will depend on applicable Federal and State regulations.

SECTION 3 HAZARDS IDENTIFICATION

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EMERGENCY OVERVIEW

- EXTREMELY FLAMMABLE LIQUID AND VAPOR. VAPOR MAY CAUSE FLASH FIRE
- HARMFUL OR FATAL IF SWALLOWED - MAY CAUSE LUNG DAMAGE IF SWALLOWED
- VAPOR HARMFUL
- CAUSES EYE AND SKIN IRRITATION
- LONG-TERM EXPOSURE TO VAPOR HAS CAUSED CANCER IN LABORATORY ANIMALS
- KEEP OUT OF REACH OF CHILDREN
- TOXIC TO AQUATIC ORGANISMS

****

IMMEDIATE HEALTH EFFECTS
Eye: Contact with the eyes causes irritation. Symptoms may include pain, tearing, reddening, swelling and impaired vision.
Skin: Contact with the skin causes irritation. Skin contact may cause drying or defatting of the skin. Contact with the skin is not expected to cause an allergic skin response. Symptoms may include pain, itching, discoloration, swelling, and blistering. Not expected to be harmful to internal organs if absorbed through the skin.
Ingestion: Because of its low viscosity, this material can directly enter the lungs, if swallowed, or if subsequently vomited. Once in the lungs it is very difficult to remove and can cause severe injury or death.
Inhalation: The vapor or fumes from this material may cause respiratory irritation. Symptoms of respiratory irritation may include coughing and difficulty breathing. Breathing this material at concentrations above the recommended exposure limits may cause central nervous system effects. Central nervous system effects may include headache, dizziness, nausea, vomiting, weakness, loss of coordination, blurred vision, drowsiness, confusion, or disorientation. At extreme exposures, central nervous system effects may include respiratory depression, tremors or convulsions, loss of consciousness, coma or death.

DELAYED OR OTHER HEALTH EFFECTS:
Reproduction and Birth Defects: This material is not expected to cause birth defects or other harm to the developing fetus based on animal data.
Cancer: Prolonged or repeated exposure to this material may cause cancer. Gasoline has been classified as a Group 2B carcinogen (possibly carcinogenic to humans) by the International Agency for Research on Cancer (IARC).

Whole gasoline exhaust has been classified as a Group 2B carcinogen (possibly carcinogenic to humans) by the International Agency for Research on Cancer (IARC).

Contains benzene, which has been classified as a carcinogen by the National Toxicology Program (NTP) and a Group 1 carcinogen (carcinogenic to humans) by the International Agency for Research on Cancer (IARC).
Contains ethylbenzene which has been classified as a Group 2B carcinogen (possibly carcinogenic to humans) by the International Agency for Research on Cancer (IARC).
Contains naphthalene, which has been classified as a Group 2B carcinogen (possibly carcinogenic to humans) by the International Agency for Research on Cancer (IARC).
See Section 11 for additional information. Risk depends on duration and level of exposure.

SECTION 4 FIRST AID MEASURES

Eye: Flush eyes with water immediately while holding the eyelids open. Remove contact lenses, if worn, after initial flushing, and continue flushing for at least 15 minutes. Get medical attention if irritation persists.
Skin: Wash skin with water immediately and remove contaminated clothing and shoes. Get medical attention if any symptoms develop. To remove the material from skin, use soap and water. Discard contaminated clothing and shoes or thoroughly clean before reuse.
Ingestion: If swallowed, get immediate medical attention. Do not induce vomiting. Never give anything by mouth to an unconscious person. If swallowed, get medical attention. Do not induce vomiting. Never give anything by mouth to an unconscious person.
Inhalation: Move the exposed person to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention if breathing difficulties continue.
Note to Physicians: Ingestion of this product or subsequent vomiting may result in aspiration of light hydrocarbon liquid, which may cause pneumonitis.

SECTION 5 FIRE FIGHTING MEASURES

See Section 7 for proper handling and storage.

FIRE CLASSIFICATION:
OSHA Classification (29 CFR 1910.1200): Flammable liquid.

NFPA RATINGS: Health: 1 Flammability: 3 Reactivity: 0

FLAMMABLE PROPERTIES:
Flashpoint: (Tagliabue Closed Cup ASTM D56) < -45 °C (< -49 °F)
Autoignition: > 280 °C (> 536 °F)
Flammability (Explosive) Limits (% by volume in air): Lower: 1.4 Upper: 7.6 (Typical)

EXTINGUISHING MEDIA: Dry Chemical, CO2, AFFF Foam or alcohol resistant foam if >15% volume polar solvents (oxygenates).
PROTECTION OF FIRE FIGHTERS:
Fire Fighting Instructions: Use water spray to cool fire-exposed containers and to protect personnel. For fires involving this material, do not enter any enclosed or confined fire space without proper protective equipment, including self-contained breathing apparatus.
Combustion Products: Highly dependent on combustion conditions. A complex mixture of airborne solids, liquids, and gases including carbon monoxide, carbon dioxide, and unidentified organic compounds will be evolved when this material undergoes combustion.

SECTION 6 ACCIDENTAL RELEASE MEASURES

Protective Measures: Eliminate all sources of ignition in the vicinity of the spill or released vapor. If this material is released into the work area, evacuate the area immediately. Monitor area with combustible gas indicator.
Spill Management: Stop the source of the release if you can do it without risk. Contain release to prevent further contamination of soil, surface water or groundwater. Clean up spill as soon as possible, observing precautions in Exposure Controls/Personal Protection. Use appropriate techniques such as applying non-combustible absorbent materials or pumping. All equipment used when handling the product must be grounded. A vapor suppressing foam may be used to reduce vapors. Use clean non-sparking tools to collect absorbed material. Where feasible and appropriate, remove contaminated soil. Place contaminated materials in disposable containers and dispose of in a manner consistent with applicable regulations.
Reporting: Report spills to local authorities and/or the U.S. Coast Guard's National Response Center at (800) 424-8802 as appropriate or required. This material is covered by EPA's Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) Petroleum Exclusion. Therefore, releases to the environment may not be reportable under CERCLA.

SECTION 7 HANDLING AND STORAGE

Precautionary Measures: READ AND OBSERVE ALL PRECAUTIONS ON PRODUCT LABEL. This product presents an extreme fire hazard. Liquid very quickly evaporates, even at low temperatures, and forms vapor (fumes) which can catch fire and burn with explosive violence. Invisible vapor spreads easily and can be set on

fire by many sources such as pilot lights, welding equipment, and electrical motors and switches. Do not store in open or unlabeled containers. Use only as a motor fuel. Do not use for cleaning, pressure appliance fuel, or any other such use. Never siphon gasoline by mouth.
Do not get in eyes, on skin, or on clothing. Do not taste or swallow. Do not breathe vapor or fumes. Wash thoroughly after handling. Keep out of the reach of children.
Unusual Handling Hazards: WARNING! Do not use as portable heater or appliance fuel. Toxic fumes may accumulate and cause death.
General Handling Information: Avoid contaminating soil or releasing this material into sewage and drainage systems and bodies of water.
Static Hazard: Electrostatic charge may accumulate and create a hazardous condition when handling this material. To minimize this hazard, bonding and grounding may be necessary but may not, by themselves, be sufficient. Review all operations which have the potential of generating and accumulating an electrostatic charge and/or a flammable atmosphere (including tank and container filling, splash filling, tank cleaning, sampling, gauging, switch loading, filtering, mixing, agitation, and vacuum truck operations) and use appropriate mitigating procedures. For more information, refer to OSHA Standard 29 CFR 1910.106, 'Flammable and Combustible Liquids', National Fire Protection Association (NFPA 77, 'Recommended Practice on Static Electricity', and/or the American Petroleum Institute (API) Recommended Practice 2003, 'Protection Against Ignitions Arising Out of Static, Lightning, and Stray Currents'. Improper filling of portable gasoline containers creates danger of fire. Only dispense gasoline into approved and properly labeled gasoline containers. Always place portable containers on the ground. Be sure pump nozzle is in contact with the container while filling. Do not use a nozzle's lock-open device. Do not fill portable containers that are inside a vehicle or truck/trailer bed.
General Storage Information: DO NOT USE OR STORE near heat, sparks, flames, or hot surfaces . USE AND STORE ONLY IN WELL VENTILATED AREA. Keep container closed when not in use.
Container Warnings: Container is not designed to contain pressure. Do not use pressure to empty container or it may rupture with explosive force. Empty containers retain product residue (solid, liquid, and/or vapor) and can be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, static electricity, or other sources of ignition. They may explode and cause injury or death. Empty containers should be completely drained, properly closed, and promptly returned to a drum reconditioner or disposed of properly.

SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

GENERAL CONSIDERATIONS:
Consider the potential hazards of this material (see Section 3), applicable exposure limits, job activities, and other substances in the work place when designing engineering controls and selecting personal protective equipment. If engineering controls or work practices are not adequate to prevent exposure to harmful levels of this material, the personal protective equipment listed below is recommended. The user should read and understand all instructions and limitations supplied with the equipment since protection is usually provided for a limited time or under certain circumstances.

ENGINEERING CONTROLS:
Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below the recommended exposure limits.

PERSONAL PROTECTIVE EQUIPMENT
Eye/Face Protection: No special eye protection is normally required. Where splashing is possible, wear safety glasses with side shields as a good safety practice.
Skin Protection: No special protective clothing is normally required. Where splashing is possible, select protective clothing depending on operations conducted, physical requirements and other substances in the workplace. Suggested materials for protective gloves include: Chlorinated Polyethylene (or Chlorosulfonated Polyethylene), Nitrile Rubber, Polyurethane, Viton.
Respiratory Protection: Determine if airborne concentrations are below the recommended occupational exposure limits for jurisdiction of use. If airborne concentrations are above the acceptable limits, wear an approved respirator that provides adequate protection from this material, such as: Air-Purifying Respirator for Organic Vapors.
When used as a fuel, this material can produce carbon monoxide in the exhaust. Determine if airborne concentrations are below the occupational exposure limit for carbon monoxide. If not, wear an approved positive-pressure air-supplying respirator.
Use a positive pressure air-supplying respirator in circumstances where air-purifying respirators may not provide adequate protection.
Occupational Exposure Limits:

Component	Agency	TWA	STEL	Ceiling	Notation
Benzene	ACGIH	.5 ppm (weight)	2.5 ppm (weight)	--	Skin A1
Benzene	OSHA SRS	1 ppm (weight)	5 ppm (weight)	--	--
Benzene	OSHA Z-2	10 ppm (weight)	--	25 ppm (weight)	--
Butane	ACGIH	800 ppm (weight)	--	--	--
Cyclohexane	ACGIH	100 ppm (weight)	--	--	--
Cyclohexane	OSHA Z-1	1050 mg/m3	--	--	--
Ethanol	ACGIH	1000 ppm (weight)	--	--	A4
Ethanol	OSHA Z-1	1900 mg/m3	--	--	--
Ethyl benzene	ACGIH	100 ppm (weight)	125 ppm (weight)	--	A3
Ethyl benzene	OSHA Z-1	435 mg/m3	--	--	--
Ethyl tert-butyl ether (ETBE)	ACGIH	5 ppm (weight)	--	--	--
Heptane	ACGIH	400 ppm (weight)	500 ppm (weight)	--	--
Heptane	OSHA Z-1	2000 mg/m3	--	--	--
Hexane	ACGIH	50 ppm (weight)	--	--	Skin
Hexane	OSHA Z-1	1800 mg/m3	--	--	--
Methyl tert-butyl ether (MTBE)	ACGIH	50 ppm (weight)	--	--	A3
Methyl tert-butyl ether (MTBE)	CVX	--	50 ppm	--	--
Methylcyclohexane	ACGIH	400 ppm (weight)	--	--	--
Methylcyclohexane	OSHA Z-1	2000 mg/m3	--	--	--
Naphthalene	ACGIH	10 ppm	15 ppm	--	A4 Skin
Naphthalene	OSHA Z-1	50 mg/m3	--	--	--
Pentane, 2,2,4-trimethyl- (Isooctane)	ACGIH	300 ppm (weight)	--	--	--
Pentane, 2,2,4-trimethyl- (Isooctane)	OSHA Z-1	2350 mg/m3	--	--	--
Tertiary amyl methyl ether (TAME)	ACGIH	20 ppm (weight)	--	--	--
Tertiary amyl methyl ether (TAME)	CVX	--	50 ppm	--	--
Toluene (methylbenzene)	ACGIH	50 ppm (weight)	--	--	Skin A4
Toluene (methylbenzene)	OSHA Z-2	200 ppm (weight)	--	300 ppm (weight)	--
Xylene (contains o-, m-, & p- xylene isomers in varying amounts)	ACGIH	100 ppm (weight)	150 ppm (weight)	--	A4
Xylene (contains o-, m-, & p- xylene isomers in varying amounts)	OSHA Z-1	435 mg/m3	--	--	--

Refer to the OSHA Benzene Standard (29 CFR 1910.1028) and Table Z-2 for detailed training, exposure monitoring, respiratory protection and medical surveillance requirements before using this product.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Attention: the data below are typical values and do not constitute a specification.

Color: Colorless to yellow
Physical State: Liquid
Odor: Petroleum odor
pH: Not Applicable
Vapor Pressure: 5 psi - 15 psi (Typical) @ 37.8 °C (100 °F)

Vapor Density (Air = 1): 3 - 4 (Typical)
Boiling Point: 37.8 °C (100°F) - 204.4°C (400°F) (Typical)
Solubility: Insoluble in water; miscible with most organic solvents.
Freezing Point: Not Applicable
Melting Point: Not Applicable
Specific Gravity: 0.7 g/ml - 0.8 g/ml @ 15.6 °C (60.1°F) (Typical)
Viscosity: <1 SUS @ 37.8 °C (100°F)

SECTION 10 STABILITY AND REACTIVITY

Chemical Stability: This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.
Incompatibility With Other Materials: May react with strong acids or strong oxidizing agents, such as chlorates, nitrates, peroxides, etc.
Hazardous Decomposition Products: None known (None expected)
Hazardous Polymerization: Hazardous polymerization will not occur.

SECTION 11 TOXICOLOGICAL INFORMATION

IMMEDIATE HEALTH EFFECTS
Eye Irritation: The Draize eye irritation mean score in rabbits for a 24-hour exposure was: 0/110.
Skin Irritation: For a 4-hour exposure, the Primary Irritation Index (PII) in rabbits is: 4.8/8.0.
Skin Sensitization: This material did not cause skin sensitization reactions in a Buehler guinea pig test.
Acute Dermal Toxicity: LD50: >3.75g/kg (rabbit).
Acute Oral Toxicity: LD50: >5 ml/kg (rat)
Acute Inhalation Toxicity: 4 hour(s) LD50: >20000mg/m3 vapor (rat).
Subchronic Effects: Exposure of rats for 13 weeks (6 hr/day for 5 days/week) to the light ends of gasoline (up to 20,000 mg/m3) resulted in minimal responses of toxicity. There were no indications of neurotoxicity based morphological, functional and biochemical indices. There was also no evidence of immunotoxicity in the rats. However, when rats were exposed to gasoline vapor containing ethanol up to 20,000 mg/m3 there was evidence of both humoral immune suppression and mild astrogliosis. **Reproduction and Birth Defects:** Exposure of rats to the light ends of gasoline at up to 20,000 mg/m3 had generally no impact upon reproductive abilities and did not cause birth defects.
Genetic Toxicity: Gasoline was not mutagenic, with or without activation, in the Ames assay (Salmonella typhimurium), Saccharamyces cerevisesae, or mouse lymphoma assays. In addition, point mutations were not induced in human lymphocytes. Gasoline was not mutagenic when tested in the mouse dominant lethal assay. Administration of gasoline to rats did not cause chromosomal aberrations in their bone marrow cells. Inhalation exposure of rats to the light ends of gasoline caused increased sister chromatid exchange in their peripheral white blood cells but did not cause an increase in micronucleated red blood cells in their bone marrow.
ADDITIONAL TOXICOLOGY INFORMATION:
Gasolines are highly volatile and can produce significant concentrations of vapor at ambient temperatures. Gasoline vapor is heavier than air and at high concentrations may accumulate in confined spaces to present both safety and heath hazards. When vapor exposures are low, or short duration and infrequent, such as during refueling and tanker loading/unloading, neither total hydrocarbon nor components such as benzene are likely to result in any adverse health effects. In situations such as accidents or spills where exposure to gasoline vapor is potentially high, attention should be paid to potential toxic effects of specific components. Information about specific components in gasoline can be found in Sections 2, 8 and 15 of this MSDS. More detailed information on the health hazard of specific gasoline components can be obtained calling the ChevronTexaco Emergency Information Center (see Section 1 for phone numbers).
Pathological misuse of solvents and gasoline, involving repeated and prolonged exposure to high concentrations of vapor is a significant exposure on which there are many reports in the medical literature. As with other solvents, persistent abuse involving repeated and prolonged exposures to high concentrations of vapor has been reported to result in central nervous system damage and eventually, death. In a study in which ten human volunteers were exposed for 30 minutes to approximately 200, 500 or 1000 ppm concentrations of gasoline vapor, irritation of the eyes was the only significant effect observed, based on both subjective and objective assessments.
Lifetime inhalation of wholly vaporized unleaded gasoline at 2056 ppm has caused increased liver tumors in female mice and kidney cancer in male rats. In their 1988 review of carcinogenic risk from gasoline, The International Agency for Research on Cancer (IARC) noted that, because published epidemiology studies did not include any exposure data, only occupations where gasoline exposure may have occurred were reviewed. These included gasoline service station attendants and automobile mechanics. IARC also noted that there was no

opportunity to separate effects of combustion products from those of gasoline itself. Although IARC allocated gasoline a final overall classification of Group 2B, i.e. possibly carcinogenic to humans, this was based on limited evidence in experimental animals plus supporting evidence including the presence in gasoline of benzene. The actual evidence for carcinogenicity in humans was considered inadequate.
To explore the health effects of workers potentially exposed to gasoline vapors in the marketing and distribution sectors of the petroleum industry, the American Petroleum Institute sponsored a cohort mortality study (Publication 4555), a nested case-control study (Publication 4551), and an exposure assessment study (Publication 4552). Histories of exposure to gasoline were reconstructed for cohort of more than 18,000 employees from four companies for the time period between 1946 and 1985. The results of the cohort mortality study indicated that there was no increased mortality from either kidney cancer or leukemia among marketing and marine distribution employees who were exposed to gasoline in the petroleum industry, when compared to the general population. More importantly, based on internal comparisons, there was no association between mortality from kidney cancer or leukemia and various indices of gasoline exposure. In particular, neither duration of employment, duration of exposure, age at first exposure, year of first exposure, job category, cumulative exposure, frequency of peak exposure, nor average intensity of exposure had any effect on kidney cancer or leukemia mortality. The results of the nested case-control study confirmed the findings of the original cohort study. That is, exposure to gasoline at the levels experienced by this cohort of distribution workers is not a significant risk factor for leukemia (all cell types), acute myeloid leukemia, kidney cancer or multiple myeloma.

SECTION 12 ECOLOGICAL INFORMATION

ECOTOXICITY
96 hour(s) LC50: 8.3 mg/l (Cyprinodon variegatus)
96 hour(s) LC50: 1.8 mg/l (Mysidopsis bahia)
48 hour(s) LC50: 3.0 mg/l (Daphnia magna)
96 hour(s) LC50: 2.7 mg/l (Oncorhynchus mykiss)
This material is expected to be toxic to aquatic organisms. The bulk of the available literature on gasoline relates to the environmental impact of monoaromatic (BTEX) and diaromatic (naphthalene, methylnaphthalenes) constituents. In general, non-oxygenated gasoline exhibits some short-term toxicity to freshwater and marine organisms, especially under closed vessel or flow-through exposure conditions in the laboratory. The components which are the most prominent in the water soluble fraction and cause aquatic toxicity, are also highly volatile and can be readily biodegraded by microorganisms.

Gasoline studies have been conducted in the laboratory under a variety of test conditions with a range of fish and invertebrate species. An even more extensive database is available on the aquatic toxicity of individual aromatic constituents. The majority of published studies do not identify the type of gasoline evaluated, or even provide distinguishing characteristics such as aromatic content or presence of lead alkyls. As a result, comparison of results among studies using open and closed vessels, different ages and species of test animals and different gasoline types, is difficult.

ENVIRONMENTAL FATE
This material is expected to be readily biodegradable. Following spillage, the more volatile components of gasoline will be rapidly lost, with concurrent dissolution of these and other constituents into the water. Factors such as local environmental conditions (temperature, wind, mixing or wave action, soil type, etc), photo-oxidation, biodegradation and adsorption onto suspended sediments, can contribute to the weathering of spilled gasoline.

The aqueous solubility of non-oxygenated unleaded gasoline, based on analysis of benzene, toluene, ethylbenzene+xylenes and naphthalene, is reported to be 112 mg/l. Solubility data on individual gasoline constituents also available.

SECTION 13 DISPOSAL CONSIDERATIONS

Use material for its intended purpose or recycle if possible. This material, if it must be discarded, may meet the criteria of a hazardous waste as defined by US EPA under RCRA (40 CFR 261) or other State and local regulations. Measurement of certain physical properties and analysis for regulated components may be necessary to make a correct determination. If this material is classified as a hazardous waste, federal law requires disposal at a licensed hazardous waste disposal facility.

SECTION 14 TRANSPORT INFORMATION

The description shown may not apply to all shipping situations. Consult 49CFR, or appropriate Dangerous Goods Regulations, for additional description requirements (e.g., technical name) and mode-specific or quantity-specific shipping requirements.

DOT Shipping Description: GASOLINE,3,UN1203,II

IMO/IMDG Shipping Description: GASOLINE,3,UN1203,II,FLASH POINT SEE SECTION 5

ICAO/IATA Shipping Description: GASOLINE, 3, UN1203, II

SECTION 15 REGULATORY INFORMATION

EPCRA 311/312 CATEGORIES: 1. Immediate (Acute) Health Effects: YES
2. Delayed (Chronic) Health Effects: YES
3. Fire Hazard: YES
4. Sudden Release of Pressure Hazard: NO
5. Reactivity Hazard: NO

REGULATORY LISTS SEARCHED:

01-1=IARC Group 1	03=EPCRA 313
01-2A=IARC Group 2A	04=CA Proposition 65
01-2B=IARC Group 2B	05=MA RTK
02=NTP Carcinogen	06=NJ RTK
	07=PA RTK

The following components of this material are found on the regulatory lists indicated.

Benzene	01-1, 02, 03, 04, 05, 06, 07
Butane	05, 06, 07
Cyclohexane	03, 05, 06, 07
Ethanol	05, 06, 07
Ethyl benzene	01-2B, 03, 05, 06, 07
Gasoline	01-2B, 07
Heptane	05, 06, 07
Hexane	03, 05, 06, 07
Methyl tert-butyl ether (MTBE)	03, 05, 06, 07
Methylcyclohexane	05, 06, 07
Naphthalene	01-2B, 03, 04, 05, 06, 07
Pentane, 2,2,4-trimethyl- (Isooctane)	05, 06, 07
Toluene (methylbenzene)	03, 04, 05, 06, 07
Xylene (contains o-, m-, & p- xylene isomers in varying amounts)	03, 05, 06, 07

CERCLA REPORTABLE QUANTITIES(RQ)/EPCRA 302 THRESHOLD PLANNING QUANTITIES(TPQ):

Component	Component RQ	Component TPQ	Product RQ
Benzene	10 lbs	None	186 lbs
Butane	100 lbs	None	725 lbs
Cyclohexane	1000 lbs	None	34188 lbs
Ethanol	100 lbs	None	1934 lbs
Ethyl benzene	1000 lbs	None	34964 lbs
Gasoline	100 lbs	None	107 lbs
Heptane	100 lbs	None	3644 lbs

Hexane	5000 lbs	None	129149 lbs
Methyl tert-butyl ether (MTBE)	1000 lbs	None	7513 lbs
Methylcyclohexane	100 lbs	None	4278 lbs
Naphthalene	100 lbs	None	4000 lbs
Pentane, 2,2,4-trimethyl- (Isooctane)	1000 lbs	None	6270 lbs
Toluene (methylbenzene)	1000 lbs	None	5480 lbs
Xylene (contains o-, m-, & p- xylene isomers in varying amounts)	100 lbs	None	649 lbs

CHEMICAL INVENTORIES:
All components comply with the following chemical inventory requirements: DSL (Canada), EINECS (European Union), KECI (Korea), TSCA (United States).

WHMIS CLASSIFICATION:
Class B, Division 2: Flammable Liquids
Class D, Division 2, Subdivision A: Very Toxic Material - Carcinogenicity
Class D, Division 2, Subdivision B: Toxic Material - Skin or Eye Irritation

SECTION 16 OTHER INFORMATION

NFPA RATINGS: Health: 1 Flammability: 3 Reactivity: 0

(0-Least, 1-Slight, 2-Moderate, 3-High, 4-Extreme, PPE:- Personal Protection Equipment Index recommendation, *- Chronic Effect Indicator). These values are obtained using the guidelines or published evaluations prepared by the National Fire Protection Association (NFPA) or the National Paint and Coating Association (for HMIS ratings).
Additional Product Number(s): CPS201003, CPS201004, CPS201006, CPS201007, CPS201008, CPS201010, CPS201011, CPS201018, CPS201021, CPS201025, CPS201031, CPS201032, CPS201033, CPS201034, CPS201036, CPS201037, CPS201038, CPS201041, CPS201043, CPS201046, CPS201048, CPS201064, CPS201208, CPS201210, CPS201211, CPS201212, CPS201230, CPS201231, CPS201232, CPS201260, CPS201261, CPS201262, CPS201271, CPS201272, CPS201273, CPS201280, CPS201281, CPS201282, CPS201288, CPS201290, CPS201291, CPS201292, CPS201851, CPS201852, CPS201858, CPS201859, CPS201860, CPS204004, CPS204005, CPS204012, CPS204013, CPS204024, CPS204025, CPS204048, CPS204049, CPS204072, CPS204073, CPS204090, CPS204091, CPS204106, CPS204107, CPS204118, CPS204119, CPS204142, CPS204143, CPS204166, CPS204167, CPS204190, CPS204191, CPS204202, CPS204203, CPS204214, CPS204215, CPS204226, CPS204227, CPS204250, CPS204251, CPS204274, CPS204275, CPS204292, CPS204293, CPS204325, CPS204326, CPS204360, CPS204361, CPS204366, CPS204367, CPS204372, CPS204373, CPS204378, CPS204379, CPS204384, CPS204385, CPS204390, CPS204391, CPS204396, CPS204397, CPS204402, CPS204403, CPS204408, CPS204409, CPS204414, CPS204415, CPS204420, CPS204421, CPS204426, CPS204427, CPS204432, CPS204433, CPS204438, CPS204439, CPS204468, CPS204469, CPS204486, CPS204487, CPS204504, CPS204505, CPS204522, CPS204523, CPS204540, CPS204541, CPS204558, CPS204559, CPS204576, CPS204577, CPS204594, CPS204595, CPS204612, CPS204613, CPS204630, CPS204631, CPS204648, CPS204649, CPS204666, CPS204667, CPS204692, CPS204693, CPS204698, CPS204699, CPS204704, CPS204705, CPS204710, CPS204711, CPS204723, CPS204724, CPS204729, CPS204730
REVISION STATEMENT: This revision updates the following sections of this Material Safety Data Sheet: 1, 2, 8, 11, 14, 15.
Revision Date: 06/25/2004

ABBREVIATIONS THAT MAY HAVE BEEN USED IN THIS DOCUMENT:

TLV - Threshold Limit Value	TWA - Time Weighted Average
STEL - Short-term Exposure Limit	PEL - Permissible Exposure Limit
	CAS - Chemical Abstract Service Number
ACGIH - American Conference of Government Industrial Hygienists	IMO/IMDG - International Maritime Dangerous Goods Code

API - American Petroleum Institute	MSDS - Material Safety Data Sheet
CVX - ChevronTexaco	NFPA - National Fire Protection Association (USA)
DOT - Department of Transportation (USA)	NTP - National Toxicology Program (USA)
IARC - International Agency for Research on Cancer	OSHA - Occupational Safety and Health Administration

Prepared according to the OSHA Hazard Communication Standard (29 CFR 1910.1200) and the ANSI MSDS Standard (Z400.1) by the ChevronTexaco Energy Research & Technology Company, 100 Chevron Way, Richmond, California 94802.

The above information is based on the data of which we are aware and is believed to be correct as of the date hereof. Since this information may be applied under conditions beyond our control and with which we may be unfamiliar and since data made available subsequent to the date hereof may suggest modifications of the information, we do not assume any responsibility for the results of its use. This information is furnished upon condition that the person receiving it shall make his own determination of the suitability of the material for his particular purpose.

Fuel

Material Safety Data Sheet

SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

CHEVRON and TEXACO PREMIUM UNLEADED GASOLINES

Product Use: Fuel
Product Number(s): CPS201019 [See Section 16 for Additional Product Numbers]
Synonyms: Calco Premium Gasoline, Chevron Premium Unleaded Gasoline, Chevron Supreme Unleaded Gasoline, Texaco Power Premium Unleaded Gasoline
Company Identification
Chevron Products Company
Marketing, MSDS Coordinator
6001 Bollinger Canyon Road
San Ramon, CA 94583
United States of America

Transportation Emergency Response
CHEMTREC: (800) 424-9300 or (703) 527-3887
Health Emergency
ChevronTexaco Emergency Information Center: Located in the USA. International collect calls accepted. (800) 231-0623 or (510) 231-0623
Product Information
Technical Information: (510) 242-5357

SPECIAL NOTES: This MSDS applies to: all motor gasoline.

SECTION 2 COMPOSITION/ INFORMATION ON INGREDIENTS

COMPONENTS	CAS NUMBER	AMOUNT
Gasoline	86290-81-5	100 %volume
Benzene	71-43-2	0.1 - 4.9 %volume
Toluene (methylbenzene)	108-88-3	1 - 17 %volume
Ethyl benzene	100-41-4	0.1 - 3 %volume
Xylene (contains o-, m-, & p- xylene isomers in varying amounts)	1330-20-7	1 - 15 %volume
Butane	106-97-8	1 - 12 %volume
Heptane	142-82-5	1 - 4 %volume
Hexane	110-54-3	1 - 5 %volume
Cyclohexane	110-82-7	1 - 3 %volume
Methylcyclohexane	108-87-2	1 - 2 %volume
Pentane, 2,2,4-trimethyl- (Isooctane)	540-84-1	1 - 13 %volume
Naphthalene	91-20-3	0.1 - 2 %volume
Ethanol	64-17-5	0 - 10 %volume

Methyl tert-butyl ether (MTBE)	1634-04-4	0 - 15 %volume
Tertiary amyl methyl ether (TAME)	994-05-8	0 - 17 %volume
Ethyl tert-butyl ether (ETBE)	637-92-3	0 - 18 %volume

Motor gasoline is considered a mixture by EPA under the Toxic Substances Control Act (TSCA). The refinery streams used to blend motor gasoline are all on the TSCA Chemical Substances Inventory. The appropriate CAS number for refinery blended motor gasoline is 86290-81-5. The product specifications of motor gasoline sold in your area will depend on applicable Federal and State regulations.

SECTION 3 HAZARDS IDENTIFICATION

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EMERGENCY OVERVIEW

- EXTREMELY FLAMMABLE LIQUID AND VAPOR. VAPOR MAY CAUSE FLASH FIRE
- HARMFUL OR FATAL IF SWALLOWED - MAY CAUSE LUNG DAMAGE IF SWALLOWED
- VAPOR HARMFUL
- CAUSES EYE AND SKIN IRRITATION
- LONG-TERM EXPOSURE TO VAPOR HAS CAUSED CANCER IN LABORATORY ANIMALS
- KEEP OUT OF REACH OF CHILDREN
- TOXIC TO AQUATIC ORGANISMS

****

IMMEDIATE HEALTH EFFECTS
Eye: Contact with the eyes causes irritation. Symptoms may include pain, tearing, reddening, swelling and impaired vision.
Skin: Contact with the skin causes irritation. Skin contact may cause drying or defatting of the skin. Contact with the skin is not expected to cause an allergic skin response. Symptoms may include pain, itching, discoloration, swelling, and blistering. Not expected to be harmful to internal organs if absorbed through the skin.
Ingestion: Because of its low viscosity, this material can directly enter the lungs, if swallowed, or if subsequently vomited. Once in the lungs it is very difficult to remove and can cause severe injury or death.
Inhalation: The vapor or fumes from this material may cause respiratory irritation. Symptoms of respiratory irritation may include coughing and difficulty breathing. Breathing this material at concentrations above the recommended exposure limits may cause central nervous system effects. Central nervous system effects may include headache, dizziness, nausea, vomiting, weakness, loss of coordination, blurred vision, drowsiness, confusion, or disorientation. At extreme exposures, central nervous system effects may include respiratory depression, tremors or convulsions, loss of consciousness, coma or death.

DELAYED OR OTHER HEALTH EFFECTS:
Reproduction and Birth Defects: This material is not expected to cause birth defects or other harm to the developing fetus based on animal data.
Cancer: Prolonged or repeated exposure to this material may cause cancer. Gasoline has been classified as a Group 2B carcinogen (possibly carcinogenic to humans) by the International Agency for Research on Cancer (IARC).

Whole gasoline exhaust has been classified as a Group 2B carcinogen (possibly carcinogenic to humans) by the International Agency for Research on Cancer (IARC).

Contains benzene, which has been classified as a carcinogen by the National Toxicology Program (NTP) and a Group 1 carcinogen (carcinogenic to humans) by the International Agency for Research on Cancer (IARC).
Contains ethylbenzene which has been classified as a Group 2B carcinogen (possibly carcinogenic to humans) by the International Agency for Research on Cancer (IARC).
Contains naphthalene, which has been classified as a Group 2B carcinogen (possibly carcinogenic to humans) by the International Agency for Research on Cancer (IARC).
See Section 11 for additional information. Risk depends on duration and level of exposure.

SECTION 4 FIRST AID MEASURES

Eye: Flush eyes with water immediately while holding the eyelids open. Remove contact lenses, if worn, after initial flushing, and continue flushing for at least 15 minutes. Get medical attention if irritation persists.
Skin: Wash skin with water immediately and remove contaminated clothing and shoes. Get medical attention if any symptoms develop. To remove the material from skin, use soap and water. Discard contaminated clothing and shoes or thoroughly clean before reuse.
Ingestion: If swallowed, get immediate medical attention. Do not induce vomiting. Never give anything by mouth to an unconscious person. If swallowed, get medical attention. Do not induce vomiting. Never give anything by mouth to an unconscious person.
Inhalation: Move the exposed person to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention if breathing difficulties continue.
Note to Physicians: Ingestion of this product or subsequent vomiting may result in aspiration of light hydrocarbon liquid, which may cause pneumonitis.

SECTION 5 FIRE FIGHTING MEASURES

See Section 7 for proper handling and storage.

FIRE CLASSIFICATION:
OSHA Classification (29 CFR 1910.1200): Flammable liquid.

NFPA RATINGS: Health: 1 Flammability: 3 Reactivity: 0

FLAMMABLE PROPERTIES:
Flashpoint: (Tagliabue Closed Cup ASTM D56) < -45 °C (< -49 °F)
Autoignition: > 280 °C (> 536 °F)
Flammability (Explosive) Limits (% by volume in air): Lower: 1.4 Upper: 7.6 (Typical)

EXTINGUISHING MEDIA: Dry Chemical, CO2, AFFF Foam or alcohol resistant foam if >15% volume polar solvents (oxygenates).
PROTECTION OF FIRE FIGHTERS:
Fire Fighting Instructions: Use water spray to cool fire-exposed containers and to protect personnel. For fires involving this material, do not enter any enclosed or confined fire space without proper protective equipment, including self-contained breathing apparatus.
Combustion Products: Highly dependent on combustion conditions. A complex mixture of airborne solids, liquids, and gases including carbon monoxide, carbon dioxide, and unidentified organic compounds will be evolved when this material undergoes combustion.

SECTION 6 ACCIDENTAL RELEASE MEASURES

Protective Measures: Eliminate all sources of ignition in the vicinity of the spill or released vapor. If this material is released into the work area, evacuate the area immediately. Monitor area with combustible gas indicator.
Spill Management: Stop the source of the release if you can do it without risk. Contain release to prevent further contamination of soil, surface water or groundwater. Clean up spill as soon as possible, observing precautions in Exposure Controls/Personal Protection. Use appropriate techniques such as applying non-combustible absorbent materials or pumping. All equipment used when handling the product must be grounded. A vapor suppressing foam may be used to reduce vapors. Use clean non-sparking tools to collect absorbed material. Where feasible and appropriate, remove contaminated soil. Place contaminated materials in disposable containers and dispose of in a manner consistent with applicable regulations.
Reporting: Report spills to local authorities and/or the U.S. Coast Guard's National Response Center at (800) 424-8802 as appropriate or required. This material is covered by EPA's Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) Petroleum Exclusion. Therefore, releases to the environment may not be reportable under CERCLA.

SECTION 7 HANDLING AND STORAGE

Precautionary Measures: READ AND OBSERVE ALL PRECAUTIONS ON PRODUCT LABEL. This product presents an extreme fire hazard. Liquid very quickly evaporates, even at low temperatures, and forms vapor (fumes) which can catch fire and burn with explosive violence. Invisible vapor spreads easily and can be set on

fire by many sources such as pilot lights, welding equipment, and electrical motors and switches. Do not store in open or unlabeled containers. Use only as a motor fuel. Do not use for cleaning, pressure appliance fuel, or any other such use. Never siphon gasoline by mouth.
Do not get in eyes, on skin, or on clothing. Do not taste or swallow. Do not breathe vapor or fumes. Wash thoroughly after handling. Keep out of the reach of children.
Unusual Handling Hazards: WARNING! Do not use as portable heater or appliance fuel. Toxic fumes may accumulate and cause death.
General Handling Information: Avoid contaminating soil or releasing this material into sewage and drainage systems and bodies of water.
Static Hazard: Electrostatic charge may accumulate and create a hazardous condition when handling this material. To minimize this hazard, bonding and grounding may be necessary but may not, by themselves, be sufficient. Review all operations which have the potential of generating and accumulating an electrostatic charge and/or a flammable atmosphere (including tank and container filling, splash filling, tank cleaning, sampling, gauging, switch loading, filtering, mixing, agitation, and vacuum truck operations) and use appropriate mitigating procedures. For more information, refer to OSHA Standard 29 CFR 1910.106, 'Flammable and Combustible Liquids', National Fire Protection Association (NFPA 77, 'Recommended Practice on Static Electricity', and/or the American Petroleum Institute (API) Recommended Practice 2003, 'Protection Against Ignitions Arising Out of Static, Lightning, and Stray Currents'. Improper filling of portable gasoline containers creates danger of fire. Only dispense gasoline into approved and properly labeled gasoline containers. Always place portable containers on the ground. Be sure pump nozzle is in contact with the container while filling. Do not use a nozzle's lock-open device. Do not fill portable containers that are inside a vehicle or truck/trailer bed.
General Storage Information: DO NOT USE OR STORE near heat, sparks, flames, or hot surfaces . USE AND STORE ONLY IN WELL VENTILATED AREA. Keep container closed when not in use.
Container Warnings: Container is not designed to contain pressure. Do not use pressure to empty container or it may rupture with explosive force. Empty containers retain product residue (solid, liquid, and/or vapor) and can be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, static electricity, or other sources of ignition. They may explode and cause injury or death. Empty containers should be completely drained, properly closed, and promptly returned to a drum reconditioner or disposed of properly.

SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

GENERAL CONSIDERATIONS:
Consider the potential hazards of this material (see Section 3), applicable exposure limits, job activities, and other substances in the work place when designing engineering controls and selecting personal protective equipment. If engineering controls or work practices are not adequate to prevent exposure to harmful levels of this material, the personal protective equipment listed below is recommended. The user should read and understand all instructions and limitations supplied with the equipment since protection is usually provided for a limited time or under certain circumstances.

ENGINEERING CONTROLS:
Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below the recommended exposure limits.

PERSONAL PROTECTIVE EQUIPMENT
Eye/Face Protection: No special eye protection is normally required. Where splashing is possible, wear safety glasses with side shields as a good safety practice.
Skin Protection: No special protective clothing is normally required. Where splashing is possible, select protective clothing depending on operations conducted, physical requirements and other substances in the workplace. Suggested materials for protective gloves include: Chlorinated Polyethylene (or Chlorosulfonated Polyethylene), Nitrile Rubber, Polyurethane, Viton.
Respiratory Protection: Determine if airborne concentrations are below the recommended occupational exposure limits for jurisdiction of use. If airborne concentrations are above the acceptable limits, wear an approved respirator that provides adequate protection from this material, such as: Air-Purifying Respirator for Organic Vapors.
When used as a fuel, this material can produce carbon monoxide in the exhaust. Determine if airborne concentrations are below the occupational exposure limit for carbon monoxide. If not, wear an approved positive-pressure air-supplying respirator.
Use a positive pressure air-supplying respirator in circumstances where air-purifying respirators may not provide adequate protection.
Occupational Exposure Limits:

Component	Agency	TWA	STEL	Ceiling	Notation
Benzene	ACGIH	.5 ppm (weight)	2.5 ppm (weight)	--	Skin A1
Benzene	OSHA SRS	1 ppm (weight)	5 ppm (weight)	--	--
Benzene	OSHA Z-2	10 ppm (weight)	--	25 ppm (weight)	--
Butane	ACGIH	800 ppm (weight)	--	--	--
Cyclohexane	ACGIH	100 ppm (weight)	--	--	--
Cyclohexane	OSHA Z-1	1050 mg/m3	--	--	--
Ethanol	ACGIH	1000 ppm (weight)	--	--	A4
Ethanol	OSHA Z-1	1900 mg/m3	--	--	--
Ethyl benzene	ACGIH	100 ppm (weight)	125 ppm (weight)	--	A3
Ethyl benzene	OSHA Z-1	435 mg/m3	--	--	--
Ethyl tert-butyl ether (ETBE)	ACGIH	5 ppm (weight)	--	--	--
Heptane	ACGIH	400 ppm (weight)	500 ppm (weight)	--	--
Heptane	OSHA Z-1	2000 mg/m3	--	--	--
Hexane	ACGIH	50 ppm (weight)	--	--	Skin
Hexane	OSHA Z-1	1800 mg/m3	--	--	--
Methyl tert-butyl ether (MTBE)	ACGIH	50 ppm (weight)	--	--	A3
Methyl tert-butyl ether (MTBE)	CVX	--	50 ppm	--	--
Methylcyclohexane	ACGIH	400 ppm (weight)	--	--	--
Methylcyclohexane	OSHA Z-1	2000 mg/m3	--	--	--
Naphthalene	ACGIH	10 ppm	15 ppm	--	A4 Skin
Naphthalene	OSHA Z-1	50 mg/m3	--	--	--
Pentane, 2,2,4-trimethyl- (Isooctane)	ACGIH	300 ppm (weight)	--	--	--
Pentane, 2,2,4-trimethyl- (Isooctane)	OSHA Z-1	2350 mg/m3	--	--	--
Tertiary amyl methyl ether (TAME)	ACGIH	20 ppm (weight)	--	--	--
Tertiary amyl methyl ether (TAME)	CVX	--	50 ppm	--	--
Toluene (methylbenzene)	ACGIH	50 ppm (weight)	--	--	Skin A4
Toluene (methylbenzene)	OSHA Z-2	200 ppm (weight)	--	300 ppm (weight)	--
Xylene (contains o-, m-, & p- xylene isomers in varying amounts)	ACGIH	100 ppm (weight)	150 ppm (weight)	--	A4
Xylene (contains o-, m-, & p- xylene isomers in varying amounts)	OSHA Z-1	435 mg/m3	--	--	--

Refer to the OSHA Benzene Standard (29 CFR 1910.1028) and Table Z-2 for detailed training, exposure monitoring, respiratory protection and medical surveillance requirements before using this product.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Attention: the data below are typical values and do not constitute a specification.

Color: Colorless to yellow
Physical State: Liquid
Odor: Petroleum odor
pH: Not Applicable
Vapor Pressure: 5 psi - 15 psi (Typical) @ 37.8 °C (100 °F)

Vapor Density (Air = 1): 3 - 4 (Typical)
Boiling Point: 37.8 °C (100°F) - 204.4°C (400°F) (Typical)
Solubility: Insoluble in water; miscible with most organic solvents.
Freezing Point: Not Applicable
Melting Point: Not Applicable
Specific Gravity: 0.7 g/ml - 0.8 g/ml @ 15.6 °C (60.1°F) (Typical)
Viscosity: <1 SUS @ 37.8 °C (100°F)

SECTION 10 STABILITY AND REACTIVITY

Chemical Stability: This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.
Incompatibility With Other Materials: May react with strong acids or strong oxidizing agents, such as chlorates, nitrates, peroxides, etc.
Hazardous Decomposition Products: None known (None expected)
Hazardous Polymerization: Hazardous polymerization will not occur.

SECTION 11 TOXICOLOGICAL INFORMATION

IMMEDIATE HEALTH EFFECTS
Eye Irritation: The Draize eye irritation mean score in rabbits for a 24-hour exposure was: 0/110.
Skin Irritation: For a 4-hour exposure, the Primary Irritation Index (PII) in rabbits is: 4.8/8.0.
Skin Sensitization: This material did not cause skin sensitization reactions in a Buehler guinea pig test.
Acute Dermal Toxicity: LD50: >3.75g/kg (rabbit).
Acute Oral Toxicity: LD50: >5 ml/kg (rat)
Acute Inhalation Toxicity: 4 hour(s) LD50: >20000mg/m3 vapor (rat).
Subchronic Effects: Exposure of rats for 13 weeks (6 hr/day for 5 days/week) to the light ends of gasoline (up to 20,000 mg/m3) resulted in minimal responses of toxicity. There were no indications of neurotoxicity based morphological, functional and biochemical indices. There was also no evidence of immunotoxicity in the rats. However, when rats were exposed to gasoline vapor containing ethanol up to 20,000 mg/m3 there was evidence of both humoral immune suppression and mild astrogliosis. **Reproduction and Birth Defects:** Exposure of rats to the light ends of gasoline at up to 20,000 mg/m3 had generally no impact upon reproductive abilities and did not cause birth defects.
Genetic Toxicity: Gasoline was not mutagenic, with or without activation, in the Ames assay (Salmonella typhimurium), Saccharamyces cerevisesae, or mouse lymphoma assays. In addition, point mutations were not induced in human lymphocytes. Gasoline was not mutagenic when tested in the mouse dominant lethal assay. Administration of gasoline to rats did not cause chromosomal aberrations in their bone marrow cells. Inhalation exposure of rats to the light ends of gasoline caused increased sister chromatid exchange in their peripheral white blood cells but did not cause an increase in micronucleated red blood cells in their bone marrow.
ADDITIONAL TOXICOLOGY INFORMATION:
Gasolines are highly volatile and can produce significant concentrations of vapor at ambient temperatures. Gasoline vapor is heavier than air and at high concentrations may accumulate in confined spaces to present both safety and heath hazards. When vapor exposures are low, or short duration and infrequent, such as during refueling and tanker loading/unloading, neither total hydrocarbon nor components such as benzene are likely to result in any adverse health effects. In situations such as accidents or spills where exposure to gasoline vapor is potentially high, attention should be paid to potential toxic effects of specific components. Information about specific components in gasoline can be found in Sections 2, 8 and 15 of this MSDS. More detailed information on the health hazard of specific gasoline components can be obtained calling the ChevronTexaco Emergency Information Center (see Section 1 for phone numbers).
Pathological misuse of solvents and gasoline, involving repeated and prolonged exposure to high concentrations of vapor is a significant exposure on which there are many reports in the medical literature. As with other solvents, persistent abuse involving repeated and prolonged exposures to high concentrations of vapor has been reported to result in central nervous system damage and eventually, death. In a study in which ten human volunteers were exposed for 30 minutes to approximately 200, 500 or 1000 ppm concentrations of gasoline vapor, irritation of the eyes was the only significant effect observed, based on both subjective and objective assessments.
Lifetime inhalation of wholly vaporized unleaded gasoline at 2056 ppm has caused increased liver tumors in female mice and kidney cancer in male rats. In their 1988 review of carcinogenic risk from gasoline, The International Agency for Research on Cancer (IARC) noted that, because published epidemiology studies did not include any exposure data, only occupations where gasoline exposure may have occurred were reviewed. These included gasoline service station attendants and automobile mechanics. IARC also noted that there was no

opportunity to separate effects of combustion products from those of gasoline itself. Although IARC allocated gasoline a final overall classification of Group 2B, i.e. possibly carcinogenic to humans, this was based on limited evidence in experimental animals plus supporting evidence including the presence in gasoline of benzene. The actual evidence for carcinogenicity in humans was considered inadequate.
To explore the health effects of workers potentially exposed to gasoline vapors in the marketing and distribution sectors of the petroleum industry, the American Petroleum Institute sponsored a cohort mortality study (Publication 4555), a nested case-control study (Publication 4551), and an exposure assessment study (Publication 4552). Histories of exposure to gasoline were reconstructed for cohort of more than 18,000 employees from four companies for the time period between 1946 and 1985. The results of the cohort mortality study indicated that there was no increased mortality from either kidney cancer or leukemia among marketing and marine distribution employees who were exposed to gasoline in the petroleum industry, when compared to the general population. More importantly, based on internal comparisons, there was no association between mortality from kidney cancer or leukemia and various indices of gasoline exposure. In particular, neither duration of employment, duration of exposure, age at first exposure, year of first exposure, job category, cumulative exposure, frequency of peak exposure, nor average intensity of exposure had any effect on kidney cancer or leukemia mortality. The results of the nested case-control study confirmed the findings of the original cohort study. That is, exposure to gasoline at the levels experienced by this cohort of distribution workers is not a significant risk factor for leukemia (all cell types), acute myeloid leukemia, kidney cancer or multiple myeloma.

SECTION 12 ECOLOGICAL INFORMATION

ECOTOXICITY

96 hour(s) LC50: 8.3 mg/l (Cyprinodon variegatus)
96 hour(s) LC50: 1.8 mg/l (Mysidopsis bahia)
48 hour(s) LC50: 3.0 mg/l (Daphnia magna)
96 hour(s) LC50: 2.7 mg/l (Oncorhynchus mykiss)
This material is expected to be toxic to aquatic organisms. The bulk of the available literature on gasoline relates to the environmental impact of monoaromatic (BTEX) and diaromatic (naphthalene, methylnaphthalenes) constituents. In general, non-oxygenated gasoline exhibits some short-term toxicity to freshwater and marine organisms, especially under closed vessel or flow-through exposure conditions in the laboratory. The components which are the most prominent in the water soluble fraction and cause aquatic toxicity, are also highly volatile and can be readily biodegraded by microorganisms.

Gasoline studies have been conducted in the laboratory under a variety of test conditions with a range of fish and invertebrate species. An even more extensive database is available on the aquatic toxicity of individual aromatic constituents. The majority of published studies do not identify the type of gasoline evaluated, or even provide distinguishing characteristics such as aromatic content or presence of lead alkyls. As a result, comparison of results among studies using open and closed vessels, different ages and species of test animals and different gasoline types, is difficult.

ENVIRONMENTAL FATE

This material is expected to be readily biodegradable. Following spillage, the more volatile components of gasoline will be rapidly lost, with concurrent dissolution of these and other constituents into the water. Factors such as local environmental conditions (temperature, wind, mixing or wave action, soil type, etc), photo-oxidation, biodegradation and adsorption onto suspended sediments, can contribute to the weathering of spilled gasoline.

The aqueous solubility of non-oxygenated unleaded gasoline, based on analysis of benzene, toluene, ethylbenzene+xylenes and naphthalene, is reported to be 112 mg/l. Solubility data on individual gasoline constituents also available.

SECTION 13 DISPOSAL CONSIDERATIONS

Use material for its intended purpose or recycle if possible. This material, if it must be discarded, may meet the criteria of a hazardous waste as defined by US EPA under RCRA (40 CFR 261) or other State and local regulations. Measurement of certain physical properties and analysis for regulated components may be necessary to make a correct determination. If this material is classified as a hazardous waste, federal law requires disposal at a licensed hazardous waste disposal facility.

SECTION 14 TRANSPORT INFORMATION

The description shown may not apply to all shipping situations. Consult 49CFR, or appropriate Dangerous Goods Regulations, for additional description requirements (e.g., technical name) and mode-specific or quantity-specific shipping requirements.

DOT Shipping Description: GASOLINE,3,UN1203,II

IMO/IMDG Shipping Description: GASOLINE,3,UN1203,II,FLASH POINT SEE SECTION 5

ICAO/IATA Shipping Description: GASOLINE, 3, UN1203, II

SECTION 15 REGULATORY INFORMATION

EPCRA 311/312 CATEGORIES: 1. Immediate (Acute) Health Effects: YES
2. Delayed (Chronic) Health Effects: YES
3. Fire Hazard: YES
4. Sudden Release of Pressure Hazard: NO
5. Reactivity Hazard: NO

REGULATORY LISTS SEARCHED:

01-1=IARC Group 1	03=EPCRA 313
01-2A=IARC Group 2A	04=CA Proposition 65
01-2B=IARC Group 2B	05=MA RTK
02=NTP Carcinogen	06=NJ RTK
	07=PA RTK

The following components of this material are found on the regulatory lists indicated.

Benzene	01-1, 02, 03, 04, 05, 06, 07
Butane	05, 06, 07
Cyclohexane	03, 05, 06, 07
Ethanol	05, 06, 07
Ethyl benzene	01-2B, 03, 05, 06, 07
Gasoline	01-2B, 07
Heptane	05, 06, 07
Hexane	03, 05, 06, 07
Methyl tert-butyl ether (MTBE)	03, 05, 06, 07
Methylcyclohexane	05, 06, 07
Naphthalene	01-2B, 03, 04, 05, 06, 07
Pentane, 2,2,4-trimethyl- (Isooctane)	05, 06, 07
Toluene (methylbenzene)	03, 04, 05, 06, 07
Xylene (contains o-, m-, & p- xylene isomers in varying amounts)	03, 05, 06, 07

CERCLA REPORTABLE QUANTITIES(RQ)/EPCRA 302 THRESHOLD PLANNING QUANTITIES(TPQ):

Component	Component RQ	Component TPQ	Product RQ
Benzene	10 lbs	None	186 lbs
Butane	100 lbs	None	725 lbs
Cyclohexane	1000 lbs	None	34188 lbs
Ethanol	100 lbs	None	1934 lbs
Ethyl benzene	1000 lbs	None	34964 lbs
Gasoline	100 lbs	None	107 lbs
Heptane	100 lbs	None	3644 lbs

Hexane	5000 lbs	None	129149 lbs
Methyl tert-butyl ether (MTBE)	1000 lbs	None	7513 lbs
Methylcyclohexane	100 lbs	None	4278 lbs
Naphthalene	100 lbs	None	4000 lbs
Pentane, 2,2,4-trimethyl- (Isooctane)	1000 lbs	None	6270 lbs
Toluene (methylbenzene)	1000 lbs	None	5480 lbs
Xylene (contains o-, m-, & p- xylene isomers in varying amounts)			

CARG003860

MSDS - Lubes

Lubricants – Oil & Grease & Gas & Diesel

Lubrication

Material Safety Data Sheet

SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

Chevron Automatic Transmission Fluid DEXRON®-III/Mercon®

Product Number(s): CPS226502
Synonyms: Automatic Transmission Fluid, DEXRON® - III, MERCON®
Company Identification
ChevronTexaco Global Lubricants
6001 Bollinger Canyon Rd.
San Ramon, CA 94583
United States of America
www.chevron-lubricants.com

Transportation Emergency Response
CHEMTREC: (800) 424-9300 or (703) 527-3887
Health Emergency
ChevronTexaco Emergency Information Center: Located in the USA. International collect calls accepted. (800) 231-0623 or (510) 231-0623
Product Information
email : lubemsds@chevrontexaco.com
Product Information: (800) LUBE TEK
MSDS Requests: (800) 414-6737

SECTION 2 COMPOSITION/ INFORMATION ON INGREDIENTS

COMPONENTS	CAS NUMBER	AMOUNT
Distillates, hydrotreated heavy paraffinic	64742-54-7	80 - 100 %weight

SECTION 3 HAZARDS IDENTIFICATION

IMMEDIATE HEALTH EFFECTS
Eye: Not expected to cause prolonged or significant eye irritation.
Skin: Contact with the skin is not expected to cause prolonged or significant irritation. Not expected to be harmful to internal organs if absorbed through the skin. High-Pressure Equipment Information: Accidental high-velocity injection under the skin of materials of this type may result in serious injury. Seek medical attention at once should an accident like this occur. The initial wound at the injection site may not appear to be serious at first; but, if left untreated, could result in disfigurement or amputation of the affected part.

Ingestion: Not expected to be harmful if swallowed.
Inhalation: Not expected to be harmful if inhaled. Contains a petroleum-based mineral oil. May cause respiratory irritation or other pulmonary effects following prolonged or repeated inhalation of oil mist at airborne levels above the recommended mineral oil mist exposure limit. Symptoms of respiratory irritation may include coughing and difficulty breathing.

SECTION 4 FIRST AID MEASURES

Eye: No specific first aid measures are required. As a precaution, remove contact lenses, if worn, and flush eyes with water.
Skin: No specific first aid measures are required. As a precaution, remove clothing and shoes if contaminated. To

remove the material from skin, use soap and water. Discard contaminated clothing and shoes or thoroughly clean before reuse.
Ingestion: No specific first aid measures are required. Do not induce vomiting. As a precaution, get medical advice.
Inhalation: No specific first aid measures are required. If exposed to excessive levels of material in the air, move the exposed person to fresh air. Get medical attention if coughing or respiratory discomfort occurs.
Note to Physicians: In an accident involving high-pressure equipment, this product may be injected under the skin. Such an accident may result in a small, sometimes bloodless, puncture wound. However, because of its driving force, material injected into a fingertip can be deposited into the palm of the hand. Within 24 hours, there is usually a great deal of swelling, discoloration, and intense throbbing pain. Immediate treatment at a surgical emergency center is recommended.

SECTION 5 FIRE FIGHTING MEASURES

Leaks/ruptures in high pressure system using materials of this type can create a fire hazard when in the vicinity of ignition sources (eg. open flame, pilot lights, sparks, or electric arcs).

FIRE CLASSIFICATION:
OSHA Classification (29 CFR 1910.1200): Not classified by OSHA as flammable or combustible.

NFPA RATINGS: Health: 0 Flammability: 1 Reactivity: 0

FLAMMABLE PROPERTIES:
Flashpoint: (Cleveland Open Cup) 178 °C (352 °F) (Min)
Autoignition: No Data Available
Flammability (Explosive) Limits (% by volume in air): Lower: Not Applicable Upper: Not Applicable

EXTINGUISHING MEDIA: Use water fog, foam, dry chemical or carbon dioxide (CO_2) to extinguish flames.
PROTECTION OF FIRE FIGHTERS:
Fire Fighting Instructions: This material will burn although it is not easily ignited. For fires involving this material, do not enter any enclosed or confined fire space without proper protective equipment, including self-contained breathing apparatus.
Combustion Products: Highly dependent on combustion conditions. A complex mixture of airborne solids, liquids, and gases including carbon monoxide, carbon dioxide, and unidentified organic compounds will be evolved when this material undergoes combustion. Combustion may form oxides of: Sulfur, Phosphorus .

SECTION 6 ACCIDENTAL RELEASE MEASURES

Protective Measures: Eliminate all sources of ignition in vicinity of spilled material.
Spill Management: Stop the source of the release if you can do it without risk. Contain release to prevent further contamination of soil, surface water or groundwater. Clean up spill as soon as possible, observing precautions in Exposure Controls/Personal Protection. Use appropriate techniques such as applying non-combustible absorbent materials or pumping. Where feasible and appropriate, remove contaminated soil. Place contaminated materials in disposable containers and dispose of in a manner consistent with applicable regulations.
Reporting: Report spills to local authorities and/or the U.S. Coast Guard's National Response Center at (800) 424-8802 as appropriate or required.

SECTION 7 HANDLING AND STORAGE

Precautionary Measures: DO NOT USE IN HIGH PRESSURE SYSTEMS in the vicinity of flames, sparks and hot surfaces. Use only in well ventilated areas. Keep container closed.
Keep out of the reach of children.
General Handling Information: Avoid contaminating soil or releasing this material into sewage and drainage systems and bodies of water.
Static Hazard: Electrostatic charge may accumulate and create a hazardous condition when handling this material. To minimize this hazard, bonding and grounding may be necessary but may not, by themselves, be sufficient. Review all operations which have the potential of generating and accumulating an electrostatic charge and/or a flammable atmosphere (including tank and container filling, splash filling, tank cleaning, sampling, gauging, switch loading, filtering, mixing, agitation, and vacuum truck operations) and use appropriate mitigating procedures. For more information, refer to OSHA Standard 29 CFR 1910.106, 'Flammable and Combustible Liquids', National Fire Protection Association (NFPA 77, 'Recommended Practice on Static Electricity', and/or the

American Petroleum Institute (API) Recommended Practice 2003, 'Protection Against Ignitions Arising Out of Static, Lightning, and Stray Currents'.
Container Warnings: Container is not designed to contain pressure. Do not use pressure to empty container or it may rupture with explosive force. Empty containers retain product residue (solid, liquid, and/or vapor) and can be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, static electricity, or other sources of ignition. They may explode and cause injury or death. Empty containers should be completely drained, properly closed, and promptly returned to a drum reconditioner or disposed of properly.

SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

GENERAL CONSIDERATIONS:
Special note: Do not use in breathing air apparatus or medical equipment.
Consider the potential hazards of this material (see Section 3), applicable exposure limits, job activities, and other substances in the work place when designing engineering controls and selecting personal protective equipment. If engineering controls or work practices are not adequate to prevent exposure to harmful levels of this material, the personal protective equipment listed below is recommended. The user should read and understand all instructions and limitations supplied with the equipment since protection is usually provided for a limited time or under certain circumstances.

ENGINEERING CONTROLS:
Use in a well-ventilated area.

PERSONAL PROTECTIVE EQUIPMENT
Eye/Face Protection: No special eye protection is normally required. Where splashing is possible, wear safety glasses with side shields as a good safety practice.
Skin Protection: No special protective clothing is normally required. Where splashing is possible, select protective clothing depending on operations conducted, physical requirements and other substances in the workplace. Suggested materials for protective gloves include: 4H (PE/EVAL), Nitrile Rubber, Silver Shield, Viton.
Respiratory Protection: No respiratory protection is normally required.
If user operations generate an oil mist, determine if airborne concentrations are below the occupational exposure limit for mineral oil mist. If not, wear an approved respirator that provides adequate protection from the measured concentrations of this material. For air-purifying respirators use a particulate cartridge.
Use a positive pressure air-supplying respirator in circumstances where air-purifying respirators may not provide adequate protection.
Occupational Exposure Limits:

Component	Agency	TWA	STEL	Ceiling	Notation
Distillates, hydrotreated heavy paraffinic	ACGIH	5 mg/m3	10 mg/m3	--	--
Distillates, hydrotreated heavy paraffinic	OSHA Z-1	5 mg/m3	--	--	--

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Attention: the data below are typical values and do not constitute a specification.

Color: Red
Physical State: Liquid
Odor: Petroleum odor
pH: Not Applicable
Vapor Pressure: <0.01 mmHg @ 37.8 °C (100 °F)
Vapor Density (Air = 1): >1
Boiling Point: >315°C (599°F)
Solubility: Soluble in hydrocarbons; insoluble in water
Freezing Point: Not Applicable
Melting Point: Not Applicable
Specific Gravity: 0.86 @ 15.6°C (60.1°F) / 15.6°C (60.1°F)
Viscosity: 6.8 mm2/s @ 100°C (212°F) (Min)

SECTION 10 STABILITY AND REACTIVITY

Chemical Stability: This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.
Incompatibility With Other Materials: May react with strong acids or strong oxidizing agents, such as chlorates, nitrates, peroxides, etc.
Hazardous Decomposition Products: None known (None expected)
Hazardous Polymerization: Hazardous polymerization will not occur.

SECTION 11 TOXICOLOGICAL INFORMATION

IMMEDIATE HEALTH EFFECTS

Eye Irritation: The eye irritation hazard is based on evaluation of data for similar materials or product components.
Skin Irritation: The skin irritation hazard is based on evaluation of data for similar materials or product components.
Skin Sensitization: No product toxicology data available.
Acute Dermal Toxicity: The acute dermal toxicity hazard is based on evaluation of data for similar materials or product components.
Acute Oral Toxicity: The acute oral toxicity hazard is based on evaluation of data for similar materials or product components.
Acute Inhalation Toxicity: The acute inhalation toxicity hazard is based on evaluation of data for similar materials or product components.

ADDITIONAL TOXICOLOGY INFORMATION:

This product contains petroleum base oils which may be refined by various processes including severe solvent extraction, severe hydrocracking, or severe hydrotreating. None of the oils requires a cancer warning under the OSHA Hazard Communication Standard (29 CFR 1910.1200). These oils have not been listed in the National Toxicology Program (NTP) Annual Report nor have they been classified by the International Agency for Research on Cancer (IARC) as; carcinogenic to humans (Group 1), probably carcinogenic to humans (Group 2A), or possibly carcinogenic to humans (Group 2B). These oils have not been classified by the American Conference of Governmental Industrial Hygienists (ACGIH) as: confirmed human carcinogen (A1), suspected human carcinogen (A2), or confirmed animal carcinogen with unknown relevance to humans (A3).

SECTION 12 ECOLOGICAL INFORMATION

ECOTOXICITY

The toxicity of this material to aquatic organisms has not been evaluated. Consequently, this material should be kept out of sewage and drainage systems and all bodies of water.

ENVIRONMENTAL FATE

This material is not expected to be readily biodegradable.

SECTION 13 DISPOSAL CONSIDERATIONS

Use material for its intended purpose or recycle if possible. Oil collection services are available for used oil recycling or disposal. Place contaminated materials in containers and dispose of in a manner consistent with applicable regulations. Contact your sales representative or local environmental or health authorities for approved disposal or recycling methods.

SECTION 14 TRANSPORT INFORMATION

The description shown may not apply to all shipping situations. Consult 49CFR, or appropriate Dangerous Goods Regulations, for additional description requirements (e.g., technical name) and mode-specific or quantity-specific shipping requirements.
DOT Shipping Description: PETROLEUM LUBRICATING OIL, NOT REGULATED AS A HAZARDOUS

MATERIAL FOR TRANSPORTATION UNDER 49 CFR
Additional Information:NOT HAZARDOUS BY U.S. DOT. ADR/RID HAZARD CLASS NOT APPLICABLE.

IMO/IMDG Shipping Description: PETROLEUM LUBRICATING OIL; NOT REGULATED AS DANGEROUS GOODS FOR TRANSPORT UNDER THE IMDG CODE

ICAO/IATA Shipping Description: PETROLEUM LUBRICATING OIL; NOT REGULATED AS DANGEROUS GOODS FOR TRANSPORT UNDER ICAO

SECTION 15 REGULATORY INFORMATION

EPCRA 311/312 CATEGORIES: 1. Immediate (Acute) Health Effects: NO
2. Delayed (Chronic) Health Effects: NO
3. Fire Hazard: NO
4. Sudden Release of Pressure Hazard: NO
5. Reactivity Hazard: NO

REGULATORY LISTS SEARCHED:

01-1=IARC Group 1	03=EPCRA 313
01-2A=IARC Group 2A	04=CA Proposition 65
01-2B=IARC Group 2B	05=MA RTK
02=NTP Carcinogen	06=NJ RTK
	07=PA RTK

No components of this material were found on the regulatory lists above.

CHEMICAL INVENTORIES:
All components comply with the following chemical inventory requirements: AICS (Australia), DSL (Canada), ENCS (Japan), IECSC (China), KECI (Korea), TSCA (United States).

One or more components is listed on ELINCS (European Union). Secondary notification by the importer may be required.

NEW JERSEY RTK CLASSIFICATION:
Under the New Jersey Right-to-Know Act L. 1983 Chapter 315 N.J.S.A. 34:5A-1 et. seq., the product is to be identified as follows: PETROLEUM OIL (Automatic transmission fluid)

WHMIS CLASSIFICATION:
This product is not considered a controlled product according to the criteria of the Canadian Controlled Products Regulations.

SECTION 16 OTHER INFORMATION

NFPA RATINGS: Health: 0 Flammability: 1 Reactivity: 0

HMIS RATINGS: Health: 1 Flammability: 1 Reactivity: 0
(0-Least, 1-Slight, 2-Moderate, 3-High, 4-Extreme, PPE:- Personal Protection Equipment Index recommendation, *- Chronic Effect Indicator). These values are obtained using the guidelines or published evaluations prepared by the National Fire Protection Association (NFPA) or the National Paint and Coating Association (for HMIS ratings).

REVISION STATEMENT: This revision updates the following sections of this Material Safety Data Sheet: 2,14,15
Revision Date: 05/10/2004

ABBREVIATIONS THAT MAY HAVE BEEN USED IN THIS DOCUMENT:

TLV - Threshold Limit Value	TWA - Time Weighted Average

STEL - Short-term Exposure Limit	PEL - Permissible Exposure Limit
	CAS - Chemical Abstract Service Number
ACGIH - American Conference of Government Industrial Hygienists	IMO/IMDG - International Maritime Dangerous Goods Code
API - American Petroleum Institute	MSDS - Material Safety Data Sheet
CVX - ChevronTexaco	NFPA - National Fire Protection Association (USA)
DOT - Department of Transportation (USA)	NTP - National Toxicology Program (USA)
IARC - International Agency for Research on Cancer	OSHA - Occupational Safety and Health Administration

Prepared according to the OSHA Hazard Communication Standard (29 CFR 1910.1200) and the ANSI MSDS Standard (Z400.1) by the ChevronTexaco Energy Research & Technology Company, 100 Chevron Way, Richmond, California 94802.

The above information is based on the data of which we are aware and is believed to be correct as of the date hereof. Since this information may be applied under conditions beyond our control and with which we may be unfamiliar and since data made available subsequent to the date hereof may suggest modifications of the information, we do not assume any responsibility for the results of its use. This information is furnished upon condition that the person receiving it shall make his own determination of the suitability of the material for his particular purpose.

Material Safety Data Sheet

SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

Chevron 2-Cycle Oil TC-W3

Product Use: Engine Oil
Product Number(s): CPS226477
Company Identification
ChevronTexaco Global Lubricants
6001 Bollinger Canyon Rd.
San Ramon, CA 94583
United States of America
www.chevron-lubricants.com

Transportation Emergency Response
CHEMTREC: (800) 424-9300 or (703) 527-3887
Health Emergency
ChevronTexaco Emergency Information Center: Located in the USA. International collect calls accepted. (800) 231-0623 or (510) 231-0623
Product Information
email : lubemsds@chevrontexaco.com
Product Information: (800) LUBE TEK
MSDS Requests: (800) 414-6737

SECTION 2 COMPOSITION/ INFORMATION ON INGREDIENTS

COMPONENTS	CAS NUMBER	AMOUNT
Highly refined mineral oil (C15 - C50)	Mixture	60 - 80 %weight
Distillates, straight run middle (gas oil, light)	64741-44-2	15 - 25 %weight

SECTION 3 HAZARDS IDENTIFICATION

****
EMERGENCY OVERVIEW

- COMBUSTIBLE LIQUID AND VAPOR
****

IMMEDIATE HEALTH EFFECTS
Eye: Not expected to cause prolonged or significant eye irritation.
Skin: Contact with the skin is not expected to cause prolonged or significant irritation. Not expected to be harmful to internal organs if absorbed through the skin.
Ingestion: Not expected to be harmful if swallowed.
Inhalation: Not expected to be harmful if inhaled. Contains a petroleum-based mineral oil. May cause respiratory irritation or other pulmonary effects following prolonged or repeated inhalation of oil mist at airborne levels above the recommended mineral oil mist exposure limit. Symptoms of respiratory irritation may include coughing and difficulty breathing.

SECTION 4 FIRST AID MEASURES

Eye: No specific first aid measures are required. As a precaution, remove contact lenses, if worn, and flush eyes with water.
Skin: No specific first aid measures are required. As a precaution, remove clothing and shoes if contaminated. To remove the material from skin, use soap and water. Discard contaminated clothing and shoes or thoroughly clean before reuse.
Ingestion: No specific first aid measures are required. Do not induce vomiting. As a precaution, get medical advice.
Inhalation: No specific first aid measures are required. If exposed to excessive levels of material in the air, move the exposed person to fresh air. Get medical attention if coughing or respiratory discomfort occurs.

SECTION 5 FIRE FIGHTING MEASURES

See Section 7 for proper handling and storage.

FIRE CLASSIFICATION:
OSHA Classification (29 CFR 1910.1200): Combustible liquid.

NFPA RATINGS: Health: 1 Flammability: 2 Reactivity: 0

FLAMMABLE PROPERTIES:
Flashpoint: (Cleveland Open Cup) 66 °C (150 °F) (Min)
Autoignition: > 315 °C (> 599 °F)
Flammability (Explosive) Limits (% by volume in air): Lower: 0.7 Upper: 6 (Estimated)

EXTINGUISHING MEDIA: Use water fog, foam, dry chemical or carbon dioxide (CO_2) to extinguish flames.
PROTECTION OF FIRE FIGHTERS:
Fire Fighting Instructions: For fires involving this material, do not enter any enclosed or confined fire space without proper protective equipment, including self-contained breathing apparatus.
Combustion Products: Highly dependent on combustion conditions. A complex mixture of airborne solids, liquids, and gases including carbon monoxide, carbon dioxide, and unidentified organic compounds will be evolved when this material undergoes combustion.

SECTION 6 ACCIDENTAL RELEASE MEASURES

Protective Measures: Eliminate all sources of ignition in the vicinity of the spill or released vapor. If this material is released into the work area, evacuate the area immediately. Monitor area with combustible gas indicator.
Spill Management: Stop the source of the release if you can do it without risk. Contain release to prevent further contamination of soil, surface water or groundwater. Clean up spill as soon as possible, observing precautions in Exposure Controls/Personal Protection. Use appropriate techniques such as applying non-combustible absorbent materials or pumping. All equipment used when handling the product must be grounded. A vapor suppressing foam may be used to reduce vapors. Use clean non-sparking tools to collect absorbed material. Where feasible and appropriate, remove contaminated soil. Place contaminated materials in disposable containers and dispose of in a manner consistent with applicable regulations.
Reporting: Report spills to local authorities and/or the U.S. Coast Guard's National Response Center at (800) 424-8802 as appropriate or required.

SECTION 7 HANDLING AND STORAGE

Precautionary Measures: Liquid evaporates and forms vapor (fumes) which can catch fire and burn with explosive force. Invisible vapor spreads easily and can be set on fire by many sources such as pilot lights, welding equipment, and electrical motors and switches. Fire hazard is greater as liquid temperature rises above 29C (85F).
Keep out of the reach of children.
General Handling Information: Avoid contaminating soil or releasing this material into sewage and drainage systems and bodies of water.
Static Hazard: Electrostatic charge may accumulate and create a hazardous condition when handling this material. To minimize this hazard, bonding and grounding may be necessary but may not, by themselves, be sufficient. Review all operations which have the potential of generating and accumulating an electrostatic charge and/or a flammable atmosphere (including tank and container filling, splash filling, tank cleaning, sampling, gauging, switch loading, filtering, mixing, agitation, and vacuum truck operations) and use appropriate mitigating

procedures. For more information, refer to OSHA Standard 29 CFR 1910.106, 'Flammable and Combustible Liquids', National Fire Protection Association (NFPA 77, 'Recommended Practice on Static Electricity', and/or the American Petroleum Institute (API) Recommended Practice 2003, 'Protection Against Ignitions Arising Out of Static, Lightning, and Stray Currents'.
General Storage Information: DO NOT USE OR STORE near heat, sparks, flames, or hot surfaces . USE AND STORE ONLY IN WELL VENTILATED AREA. Keep container closed when not in use.
Container Warnings: Container is not designed to contain pressure. Do not use pressure to empty container or it may rupture with explosive force. Empty containers retain product residue (solid, liquid, and/or vapor) and can be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, static electricity, or other sources of ignition. They may explode and cause injury or death. Empty containers should be completely drained, properly closed, and promptly returned to a drum reconditioner or disposed of properly.

SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

GENERAL CONSIDERATIONS:
Consider the potential hazards of this material (see Section 3), applicable exposure limits, job activities, and other substances in the work place when designing engineering controls and selecting personal protective equipment. If engineering controls or work practices are not adequate to prevent exposure to harmful levels of this material, the personal protective equipment listed below is recommended. The user should read and understand all instructions and limitations supplied with the equipment since protection is usually provided for a limited time or under certain circumstances.

ENGINEERING CONTROLS:
Use in a well-ventilated area.

PERSONAL PROTECTIVE EQUIPMENT
Eye/Face Protection: No special eye protection is normally required. Where splashing is possible, wear safety glasses with side shields as a good safety practice.
Skin Protection: No special protective clothing is normally required. Where splashing is possible, select protective clothing depending on operations conducted, physical requirements and other substances in the workplace. Suggested materials for protective gloves include: 4H (PE/EVAL), Nitrile Rubber, Silver Shield, Viton.
Respiratory Protection: No respiratory protection is normally required.
If user operations generate an oil mist, determine if airborne concentrations are below the occupational exposure limit for mineral oil mist. If not, wear an approved respirator that provides adequate protection from the measured concentrations of this material. For air-purifying respirators use a particulate cartridge.
Use a positive pressure air-supplying respirator in circumstances where air-purifying respirators may not provide adequate protection.
Occupational Exposure Limits:

Component	Agency	TWA	STEL	Ceiling	Notation
Highly refined mineral oil (C15 - C50)	ACGIH	5 mg/m3	10 mg/m3	--	--
Highly refined mineral oil (C15 - C50)	OSHA Z-1	5 mg/m3	--	--	--

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Attention: the data below are typical values and do not constitute a specification.

Color: Brown
Physical State: Liquid
Odor: Petroleum odor
pH: Not Applicable
Vapor Pressure: <0.2 mmHg @ 37.8 °C (100 °F)
Vapor Density (Air = 1): >1
Boiling Point: >204 °C (399.2°F)
Solubility: Soluble in hydrocarbons; insoluble in water
Freezing Point: Not Applicable
Specific Gravity: 0.85 @ 15.6 °C (60.1°F) / 15.6°C (60.1°F)
Viscosity: 44 cSt @ 40 °C (104°F) (Typical)

SECTION 10 STABILITY AND REACTIVITY

Chemical Stability: This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.
Incompatibility With Other Materials: May react with strong acids or strong oxidizing agents, such as chlorates, nitrates, peroxides, etc.
Hazardous Decomposition Products: None known (None expected)
Hazardous Polymerization: Hazardous polymerization will not occur.

SECTION 11 TOXICOLOGICAL INFORMATION

IMMEDIATE HEALTH EFFECTS
Eye Irritation: The Draize eye irritation mean score in rabbits for a 24-hour exposure was: 3.3.
Skin Irritation: For a 24-hour exposure, the Primary Irritation Score (PIS) in rabbits is: 2.0.
Skin Sensitization: No product toxicology data available.
Acute Dermal Toxicity: The acute dermal toxicity hazard is based on evaluation of data for similar materials or product components.
Acute Oral Toxicity: LD50: >5000 mg/kg (rabbit)
Acute Inhalation Toxicity: The acute inhalation toxicity hazard is based on evaluation of data for similar materials or product components.

ADDITIONAL TOXICOLOGY INFORMATION:
This product contains petroleum base oils which may be refined by various processes including severe solvent extraction, severe hydrocracking, or severe hydrotreating. None of the oils requires a cancer warning under the OSHA Hazard Communication Standard (29 CFR 1910.1200). These oils have not been listed in the National Toxicology Program (NTP) Annual Report nor have they been classified by the International Agency for Research on Cancer (IARC) as; carcinogenic to humans (Group 1), probably carcinogenic to humans (Group 2A), or possibly carcinogenic to humans (Group 2B). These oils have not been classified by the American Conference of Governmental Industrial Hygienists (ACGIH) as: confirmed human carcinogen (A1), suspected human carcinogen (A2), or confirmed animal carcinogen with unknown relevance to humans (A3).

During use in engines, contamination of oil with low levels of cancer-causing combustion products occurs. Used motor oils have been shown to cause skin cancer in mice following repeated application and continuous exposure. Brief or intermittent skin contact with used motor oil is not expected to have serious effects in humans if the oil is thoroughly removed by washing with soap and water.

SECTION 12 ECOLOGICAL INFORMATION

ECOTOXICITY
The toxicity of this material to aquatic organisms has not been evaluated. Consequently, this material should be kept out of sewage and drainage systems and all bodies of water.

ENVIRONMENTAL FATE
This material is not expected to be readily biodegradable.

SECTION 13 DISPOSAL CONSIDERATIONS

Use material for its intended purpose or recycle if possible. This material, if it must be discarded, may meet the criteria of a hazardous waste as defined by US EPA under RCRA (40 CFR 261) or other State and local regulations. Measurement of certain physical properties and analysis for regulated components may be necessary to make a correct determination. If this material is classified as a hazardous waste, federal law requires disposal at a licensed hazardous waste disposal facility.

SECTION 14 TRANSPORT INFORMATION

The description shown may not apply to all shipping situations. Consult 49CFR, or appropriate Dangerous Goods

Regulations, for additional description requirements (e.g., technical name) and mode-specific or quantity-specific shipping requirements.
DOT Shipping Description: PETROLEUM PRODUCTS, N.O.S., Combustible Liquid, UN1268, III

IMO/IMDG Shipping Description: PETROLEUM PRODUCTS, N.O.S.,3,UN1268,III,FLASH POINT SEE SECTION 5

ICAO/IATA Shipping Description: PETROLEUM PRODUCTS, N.O.S.,3,UN1268,III,

SECTION 15 REGULATORY INFORMATION

EPCRA 311/312 CATEGORIES: 1. Immediate (Acute) Health Effects: NO
2. Delayed (Chronic) Health Effects: NO
3. Fire Hazard: YES
4. Sudden Release of Pressure Hazard: NO
5. Reactivity Hazard: NO

REGULATORY LISTS SEARCHED:

01-1=IARC Group 1	03=EPCRA 313
01-2A=IARC Group 2A	04=CA Proposition 65
01-2B=IARC Group 2B	05=MA RTK
02=NTP Carcinogen	06=NJ RTK
	07=PA RTK

The following components of this material are found on the regulatory lists indicated.
Distillates, straight run middle (gas oil, light) 06

CHEMICAL INVENTORIES:
All components comply with the following chemical inventory requirements: AICS (Australia), DSL (Canada), EINECS (European Union), ENCS (Japan), IECSC (China), KECI (Korea), PICCS (Philippines), TSCA (United States).

NEW JERSEY RTK CLASSIFICATION:
Under the New Jersey Right-to-Know Act L. 1983 Chapter 315 N.J.S.A. 34:5A-1 et. seq., the product is to be identified as follows: PETROLEUM OIL (Motor oil)

WHMIS CLASSIFICATION:
Class B, Division 3: Combustible Liquids

SECTION 16 OTHER INFORMATION

NFPA RATINGS: Health: 1 Flammability: 2 Reactivity: 0

HMIS RATINGS: Health: 1 Flammability: 2 Reactivity: 0
(0-Least, 1-Slight, 2-Moderate, 3-High, 4-Extreme, PPE:- Personal Protection Equipment Index recommendation, *- Chronic Effect Indicator). These values are obtained using the guidelines or published evaluations prepared by the National Fire Protection Association (NFPA) or the National Paint and Coating Association (for HMIS ratings).

LABEL RECOMMENDATION:
Label Category : ENGINE OIL 1, COMBUSTIBLE 1

REVISION STATEMENT: This revision updates the following sections of this Material Safety Data Sheet: 1-16
Revision Date: 10/06/2004

ABBREVIATIONS THAT MAY HAVE BEEN USED IN THIS DOCUMENT:

TLV - Threshold Limit Value	TWA - Time Weighted Average
STEL - Short-term Exposure Limit	PEL - Permissible Exposure Limit
	CAS - Chemical Abstract Service Number
ACGIH - American Conference of Government Industrial Hygienists	IMO/IMDG - International Maritime Dangerous Goods Code
API - American Petroleum Institute	MSDS - Material Safety Data Sheet
CVX - ChevronTexaco	NFPA - National Fire Protection Association (USA)
DOT - Department of Transportation (USA)	NTP - National Toxicology Program (USA)
IARC - International Agency for Research on Cancer	OSHA - Occupational Safety and Health Administration

Prepared according to the OSHA Hazard Communication Standard (29 CFR 1910.1200) and the ANSI MSDS Standard (Z400.1) by the ChevronTexaco Energy Research & Technology Company, 100 Chevron Way, Richmond, California 94802.

The above information is based on the data of which we are aware and is believed to be correct as of the date hereof. Since this information may be applied under conditions beyond our control and with which we may be unfamiliar and since data made available subsequent to the date hereof may suggest modifications of the information, we do not assume any responsibility for the results of its use. This information is furnished upon condition that the person receiving it shall make his own determination of the suitability of the material for his particular purpose.

Material Safety Data Sheet

SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

Chevron Supreme Motor Oil

Product Use: Automotive Motor Oil
Product Number(s): CPS220002, CPS220011, CPS220013, CPS220019, CPS220059, CPS220060, CPS220135, CPS220153, CPS220155
Synonyms: Chevron Supreme Motor Oil SAE 10W-30, Chevron Supreme Motor Oil SAE 10W-30 (GF-3), Chevron Supreme Motor Oil SAE 10W-40, Chevron Supreme Motor Oil SAE 20W-50, Chevron Supreme Motor Oil SAE 30, Chevron Supreme Motor Oil SAE 40, Chevron Supreme Motor Oil SAE 5W-20, Chevron Supreme Motor Oil SAE 5W-30, Chevron Supreme Motor Oil SAE 5W-30 (GF-3)
Company Identification
ChevronTexaco Global Lubricants
6001 Bollinger Canyon Rd.
San Ramon, CA 94583
United States of America
www.chevron-lubricants.com

Transportation Emergency Response
CHEMTREC: (800) 424-9300 or (703) 527-3887
Health Emergency
ChevronTexaco Emergency Information Center: Located in the USA. International collect calls accepted. (800) 231-0623 or (510) 231-0623
Product Information
email : lubemsds@chevrontexaco.com
Product Information: (800) LUBE TEK
MSDS Requests: (800) 414-6737

SECTION 2 COMPOSITION/ INFORMATION ON INGREDIENTS

COMPONENTS	CAS NUMBER	AMOUNT
Highly refined mineral oil (C15 - C50)	Mixture	75 - 95 %weight

SECTION 3 HAZARDS IDENTIFICATION

IMMEDIATE HEALTH EFFECTS
Eye: Not expected to cause prolonged or significant eye irritation.
Skin: Contact with the skin is not expected to cause prolonged or significant irritation. Not expected to be harmful to internal organs if absorbed through the skin.
Ingestion: Not expected to be harmful if swallowed.
Inhalation: Not expected to be harmful if inhaled. Contains a petroleum-based mineral oil. May cause respiratory irritation or other pulmonary effects following prolonged or repeated inhalation of oil mist at airborne levels above the recommended mineral oil mist exposure limit. Symptoms of respiratory irritation may include coughing and difficulty breathing.

SECTION 4 FIRST AID MEASURES

Eye: No specific first aid measures are required. As a precaution, remove contact lenses, if worn, and flush eyes with water.

Skin: No specific first aid measures are required. As a precaution, remove clothing and shoes if contaminated. To remove the material from skin, use soap and water. Discard contaminated clothing and shoes or thoroughly clean before reuse.
Ingestion: No specific first aid measures are required. Do not induce vomiting. As a precaution, get medical advice.
Inhalation: No specific first aid measures are required. If exposed to excessive levels of material in the air, move the exposed person to fresh air. Get medical attention if coughing or respiratory discomfort occurs.

SECTION 5 FIRE FIGHTING MEASURES

FIRE CLASSIFICATION:
OSHA Classification (29 CFR 1910.1200): Not classified by OSHA as flammable or combustible.

NFPA RATINGS: Health: 0 Flammability: 1 Reactivity: 0

FLAMMABLE PROPERTIES:
Flashpoint: (Cleveland Open Cup) 200 °C (392 °F) (Min)
Autoignition: No Data Available
Flammability (Explosive) Limits (% by volume in air): Lower: Not Applicable Upper: Not Applicable

EXTINGUISHING MEDIA: Use water fog, foam, dry chemical or carbon dioxide (CO_2) to extinguish flames.
PROTECTION OF FIRE FIGHTERS:
Fire Fighting Instructions: This material will burn although it is not easily ignited. For fires involving this material, do not enter any enclosed or confined fire space without proper protective equipment, including self-contained breathing apparatus.
Combustion Products: Highly dependent on combustion conditions. A complex mixture of airborne solids, liquids, and gases including carbon monoxide, carbon dioxide, and unidentified organic compounds will be evolved when this material undergoes combustion.

SECTION 6 ACCIDENTAL RELEASE MEASURES

Protective Measures: Eliminate all sources of ignition in vicinity of spilled material.
Spill Management: Stop the source of the release if you can do it without risk. Contain release to prevent further contamination of soil, surface water or groundwater. Clean up spill as soon as possible, observing precautions in Exposure Controls/Personal Protection. Use appropriate techniques such as applying non-combustible absorbent materials or pumping. Where feasible and appropriate, remove contaminated soil. Place contaminated materials in disposable containers and dispose of in a manner consistent with applicable regulations.
Reporting: Report spills to local authorities and/or the U.S. Coast Guard's National Response Center at (800) 424-8802 as appropriate or required.

SECTION 7 HANDLING AND STORAGE

Precautionary Measures: Keep out of the reach of children.
General Handling Information: Avoid contaminating soil or releasing this material into sewage and drainage systems and bodies of water.
Static Hazard: Electrostatic charge may accumulate and create a hazardous condition when handling this material. To minimize this hazard, bonding and grounding may be necessary but may not, by themselves, be sufficient. Review all operations which have the potential of generating and accumulating an electrostatic charge and/or a flammable atmosphere (including tank and container filling, splash filling, tank cleaning, sampling, gauging, switch loading, filtering, mixing, agitation, and vacuum truck operations) and use appropriate mitigating procedures. For more information, refer to OSHA Standard 29 CFR 1910.106, 'Flammable and Combustible Liquids', National Fire Protection Association (NFPA 77, 'Recommended Practice on Static Electricity', and/or the American Petroleum Institute (API) Recommended Practice 2003, 'Protection Against Ignitions Arising Out of Static, Lightning, and Stray Currents'.
Container Warnings: Container is not designed to contain pressure. Do not use pressure to empty container or it may rupture with explosive force. Empty containers retain product residue (solid, liquid, and/or vapor) and can be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, static electricity, or other sources of ignition. They may explode and cause injury or death. Empty containers should be completely drained, properly closed, and promptly returned to a drum reconditioner or disposed of properly.

SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

GENERAL CONSIDERATIONS:
Consider the potential hazards of this material (see Section 3), applicable exposure limits, job activities, and other substances in the work place when designing engineering controls and selecting personal protective equipment. If engineering controls or work practices are not adequate to prevent exposure to harmful levels of this material, the personal protective equipment listed below is recommended. The user should read and understand all instructions and limitations supplied with the equipment since protection is usually provided for a limited time or under certain circumstances.

ENGINEERING CONTROLS:
Use in a well-ventilated area.

PERSONAL PROTECTIVE EQUIPMENT
Eye/Face Protection: No special eye protection is normally required. Where splashing is possible, wear safety glasses with side shields as a good safety practice.
Skin Protection: No special protective clothing is normally required. Where splashing is possible, select protective clothing depending on operations conducted, physical requirements and other substances in the workplace. Suggested materials for protective gloves include: 4H (PE/EVAL), Nitrile Rubber, Silver Shield, Viton.
Respiratory Protection: No respiratory protection is normally required.
If user operations generate an oil mist, determine if airborne concentrations are below the occupational exposure limit for mineral oil mist. If not, wear an approved respirator that provides adequate protection from the measured concentrations of this material. For air-purifying respirators use a particulate cartridge.
Use a positive pressure air-supplying respirator in circumstances where air-purifying respirators may not provide adequate protection.
Occupational Exposure Limits:

Component	Agency	TWA	STEL	Ceiling	Notation
Highly refined mineral oil (C15 - C50)	ACGIH	5 mg/m3	10 mg/m3	--	--
Highly refined mineral oil (C15 - C50)	OSHA Z-1	5 mg/m3	--	--	--

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Attention: the data below are typical values and do not constitute a specification.

Color: Amber
Physical State: Liquid
Odor: Petroleum odor
pH: Not Applicable
Vapor Pressure: <0.01 mmHg @ 100 °C (212 °F)
Vapor Density (Air = 1): >1
Boiling Point: >315 °C (599°F)
Solubility: Soluble in hydrocarbons; insoluble in water
Freezing Point: Not Applicable
Specific Gravity: 0.86 - 0.9 @ 15.6 °C (60.1°F) / 15.6°C (60.1°F)
Viscosity: 8 cSt @ 100 °C (212°F) (Min)

SECTION 10 STABILITY AND REACTIVITY

Chemical Stability: This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.
Incompatibility With Other Materials: May react with strong acids or strong oxidizing agents, such as chlorates, nitrates, peroxides, etc.
Hazardous Decomposition Products: None known (None expected)
Hazardous Polymerization: Hazardous polymerization will not occur.

SECTION 11 TOXICOLOGICAL INFORMATION

IMMEDIATE HEALTH EFFECTS

Eye Irritation: The eye irritation hazard is based on evaluation of data for similar materials or product components.
Skin Irritation: The skin irritation hazard is based on evaluation of data for similar materials or product components.
Skin Sensitization: No product toxicology data available.
Acute Dermal Toxicity: The acute dermal toxicity hazard is based on evaluation of data for similar materials or product components.
Acute Oral Toxicity: The acute oral toxicity hazard is based on evaluation of data for similar materials or product components.
Acute Inhalation Toxicity: The acute inhalation toxicity hazard is based on evaluation of data for similar materials or product components.

ADDITIONAL TOXICOLOGY INFORMATION:
This product contains petroleum base oils which may be refined by various processes including severe solvent extraction, severe hydrocracking, or severe hydrotreating. None of the oils requires a cancer warning under the OSHA Hazard Communication Standard (29 CFR 1910.1200). These oils have not been listed in the National Toxicology Program (NTP) Annual Report nor have they been classified by the International Agency for Research on Cancer (IARC) as; carcinogenic to humans (Group 1), probably carcinogenic to humans (Group 2A), or possibly carcinogenic to humans (Group 2B). These oils have not been classified by the American Conference of Governmental Industrial Hygienists (ACGIH) as: confirmed human carcinogen (A1), suspected human carcinogen (A2), or confirmed animal carcinogen with unknown relevance to humans (A3).

During use in engines, contamination of oil with low levels of cancer-causing combustion products occurs. Used motor oils have been shown to cause skin cancer in mice following repeated application and continuous exposure. Brief or intermittent skin contact with used motor oil is not expected to have serious effects in humans if the oil is thoroughly removed by washing with soap and water.

SECTION 12 ECOLOGICAL INFORMATION

ECOTOXICITY
The toxicity of this material to aquatic organisms has not been evaluated. Consequently, this material should be kept out of sewage and drainage systems and all bodies of water.

ENVIRONMENTAL FATE
This material is not expected to be readily biodegradable.

SECTION 13 DISPOSAL CONSIDERATIONS

Use material for its intended purpose or recycle if possible. Oil collection services are available for used oil recycling or disposal. Place contaminated materials in containers and dispose of in a manner consistent with applicable regulations. Contact your sales representative or local environmental or health authorities for approved disposal or recycling methods.

SECTION 14 TRANSPORT INFORMATION

The description shown may not apply to all shipping situations. Consult 49CFR, or appropriate Dangerous Goods Regulations, for additional description requirements (e.g., technical name) and mode-specific or quantity-specific shipping requirements.
DOT Shipping Description: PETROLEUM LUBRICATING OIL

IMO/IMDG Shipping Description: PETROLEUM LUBRICATING OIL

ICAO/IATA Shipping Description: PETROLEUM LUBRICATING OIL

SECTION 15 REGULATORY INFORMATION

EPCRA 311/312 CATEGORIES: 1. Immediate (Acute) Health Effects: NO

2. Delayed (Chronic) Health Effects: NO
3. Fire Hazard: NO
4. Sudden Release of Pressure Hazard: NO
5. Reactivity Hazard: NO

REGULATORY LISTS SEARCHED:

01-1=IARC Group 1	03=EPCRA 313
01-2A=IARC Group 2A	04=CA Proposition 65
01-2B=IARC Group 2B	05=MA RTK
02=NTP Carcinogen	06=NJ RTK
	07=PA RTK

No components of this material were found on the regulatory lists above.

CHEMICAL INVENTORIES:
All components comply with the following chemical inventory requirements: EINECS (European Union), ENCS (Japan), IECSC (China), KECI (Korea), PICCS (Philippines), TSCA (United States).

One or more components has been notified but may not be listed in the following chemical inventories: DSL (Canada). Secondary notification by the importer may be required.

One or more components does not comply with the following chemical inventory requirements: AICS (Australia).

NEW JERSEY RTK CLASSIFICATION:
Under the New Jersey Right-to-Know Act L. 1983 Chapter 315 N.J.S.A. 34:5A-1 et. seq., the product is to be identified as follows: PETROLEUM OIL (Motor oil)

WHMIS CLASSIFICATION:
This product is not considered a controlled product according to the criteria of the Canadian Controlled Products Regulations.

SECTION 16 OTHER INFORMATION

NFPA RATINGS: Health: 0 Flammability: 1 Reactivity: 0

HMIS RATINGS: Health: 1 Flammability: 1 Reactivity: 0
(0-Least, 1-Slight, 2-Moderate, 3-High, 4-Extreme, PPE:- Personal Protection Equipment Index recommendation, *- Chronic Effect Indicator). These values are obtained using the guidelines or published evaluations prepared by the National Fire Protection Association (NFPA) or the National Paint and Coating Association (for HMIS ratings).

LABEL RECOMMENDATION:
Label Category : ENGINE OIL 1

REVISION STATEMENT: This revision updates the following sections of this Material Safety Data Sheet: 1,5,9,10
Revision Date: 01/06/2005

ABBREVIATIONS THAT MAY HAVE BEEN USED IN THIS DOCUMENT:

TLV - Threshold Limit Value	TWA - Time Weighted Average
STEL - Short-term Exposure Limit	PEL - Permissible Exposure Limit
	CAS - Chemical Abstract Service Number
ACGIH - American Conference of Government Industrial Hygienists	IMO/IMDG - International Maritime Dangerous Goods Code
API - American Petroleum Institute	MSDS - Material Safety Data Sheet
CVX - ChevronTexaco	NFPA - National Fire Protection Association (USA)

DOT - Department of Transportation (USA)	NTP - National Toxicology Program (USA)
IARC - International Agency for Research on Cancer	OSHA - Occupational Safety and Health Administration

Prepared according to the OSHA Hazard Communication Standard (29 CFR 1910.1200) and the ANSI MSDS Standard (Z400.1) by the ChevronTexaco Energy Research & Technology Company, 100 Chevron Way, Richmond, California 94802.

The above information is based on the data of which we are aware and is believed to be correct as of the date hereof. Since this information may be applied under conditions beyond our control and with which we may be unfamiliar and since data made available subsequent to the date hereof may suggest modifications of the information, we do not assume any responsibility for the results of its use. This information is furnished upon condition that the person receiving it shall make his own determination of the suitability of the material for his particular purpose.

Lubrication

Material Safety Data Sheet

SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

Havoline ® Motor Oil

Product Use: Engine Oil
Product Number(s): CPS222190, CPS222191, CPS222192, CPS222193, CPS222194, CPS222195, CPS222196, CPS222197, CPS222199
Synonyms: Havoline ® Motor Oil SAE 10W-30, Havoline® Motor Oil SAE 10W-30 (GF-3), Havoline® Motor Oil SAE 10W-40, Havoline® Motor Oil SAE 20W-50, Havoline® Motor Oil SAE 30, Havoline® Motor Oil SAE 40, Havoline® Motor Oil SAE 5W-20, Havoline® Motor Oil SAE 5W-30, Havoline® Motor Oil SAE 5W-30 (GF-3)
Company Identification
ChevronTexaco Global Lubricants
6001 Bollinger Canyon Road
San Ramon, CA 94583
United States of America

Transportation Emergency Response
CHEMTREC: (800) 424-9300 or (703) 527-3887
Health Emergency
ChevronTexaco Emergency Information Center: Located in the USA. International collect calls accepted. (800) 231-0623 or (510) 231-0623
Product Information
email : lubemsds@chevrontexaco.com
Product Information: 800-LUBE-TEK
MSDS Requests: 800-414-6737

SECTION 2 COMPOSITION/ INFORMATION ON INGREDIENTS

COMPONENTS	CAS NUMBER	AMOUNT
Highly refined mineral oil (C15 - C50)	Mixture	70 - 95 %weight

SECTION 3 HAZARDS IDENTIFICATION

IMMEDIATE HEALTH EFFECTS
Eye: Not expected to cause prolonged or significant eye irritation.
Skin: Contact with the skin is not expected to cause prolonged or significant irritation. Not expected to be harmful to internal organs if absorbed through the skin.
Ingestion: Not expected to be harmful if swallowed.
Inhalation: Not expected to be harmful if inhaled. Contains a petroleum-based mineral oil. May cause respiratory irritation or other pulmonary effects following prolonged or repeated inhalation of oil mist at airborne levels above the recommended mineral oil mist exposure limit. Symptoms of respiratory irritation may include coughing and difficulty breathing.

SECTION 4 FIRST AID MEASURES

Eye: No specific first aid measures are required. As a precaution, remove contact lenses, if worn, and flush eyes with water.
Skin: No specific first aid measures are required. As a precaution, remove clothing and shoes if contaminated. To remove the material from skin, use soap and water. Discard contaminated clothing and shoes or thoroughly clean

before reuse.
Ingestion: No specific first aid measures are required. Do not induce vomiting. As a precaution, get medical advice.
Inhalation: No specific first aid measures are required. If exposed to excessive levels of material in the air, move the exposed person to fresh air. Get medical attention if coughing or respiratory discomfort occurs.

SECTION 5 FIRE FIGHTING MEASURES

FIRE CLASSIFICATION:
OSHA Classification (29 CFR 1910.1200): Not classified by OSHA as flammable or combustible.

NFPA RATINGS: Health: 0 Flammability: 1 Reactivity: 0

FLAMMABLE PROPERTIES:
Flashpoint: (Cleveland Open Cup) 200 °C (392 °F) (Min)
Autoignition: No Data Available
Flammability (Explosive) Limits (% by volume in air): Lower: Not Applicable Upper: Not Applicable

EXTINGUISHING MEDIA: Use water fog, foam, dry chemical or carbon dioxide (CO_2) to extinguish flames.
PROTECTION OF FIRE FIGHTERS:
Fire Fighting Instructions: This material will burn although it is not easily ignited. For fires involving this material, do not enter any enclosed or confined fire space without proper protective equipment, including self-contained breathing apparatus.
Combustion Products: Highly dependent on combustion conditions. A complex mixture of airborne solids, liquids, and gases including carbon monoxide, carbon dioxide, and unidentified organic compounds will be evolved when this material undergoes combustion.

SECTION 6 ACCIDENTAL RELEASE MEASURES

Protective Measures: Eliminate all sources of ignition in vicinity of spilled material.
Spill Management: Stop the source of the release if you can do it without risk. Contain release to prevent further contamination of soil, surface water or groundwater. Clean up spill as soon as possible, observing precautions in Exposure Controls/Personal Protection. Use appropriate techniques such as applying non-combustible absorbent materials or pumping. Where feasible and appropriate, remove contaminated soil. Place contaminated materials in disposable containers and dispose of in a manner consistent with applicable regulations.
Reporting: Report spills to local authorities and/or the U.S. Coast Guard's National Response Center at (800) 424-8802 as appropriate or required.

SECTION 7 HANDLING AND STORAGE

Precautionary Measures: Keep out of the reach of children.
General Handling Information: Avoid contaminating soil or releasing this material into sewage and drainage systems and bodies of water.
Static Hazard: Electrostatic charge may accumulate and create a hazardous condition when handling this material. To minimize this hazard, bonding and grounding may be necessary but may not, by themselves, be sufficient. Review all operations which have the potential of generating and accumulating an electrostatic charge and/or a flammable atmosphere (including tank and container filling, splash filling, tank cleaning, sampling, gauging, switch loading, filtering, mixing, agitation, and vacuum truck operations) and use appropriate mitigating procedures. For more information, refer to OSHA Standard 29 CFR 1910.106, 'Flammable and Combustible Liquids', National Fire Protection Association (NFPA 77, 'Recommended Practice on Static Electricity', and/or the American Petroleum Institute (API) Recommended Practice 2003, 'Protection Against Ignitions Arising Out of Static, Lightning, and Stray Currents'.
Container Warnings: Container is not designed to contain pressure. Do not use pressure to empty container or it may rupture with explosive force. Empty containers retain product residue (solid, liquid, and/or vapor) and can be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, static electricity, or other sources of ignition. They may explode and cause injury or death. Empty containers should be completely drained, properly closed, and promptly returned to a drum reconditioner or disposed of properly.

SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

GENERAL CONSIDERATIONS:

Consider the potential hazards of this material (see Section 3), applicable exposure limits, job activities, and other substances in the work place when designing engineering controls and selecting personal protective equipment. If engineering controls or work practices are not adequate to prevent exposure to harmful levels of this material, the personal protective equipment listed below is recommended. The user should read and understand all instructions and limitations supplied with the equipment since protection is usually provided for a limited time or under certain circumstances.

ENGINEERING CONTROLS:
Use in a well-ventilated area.

PERSONAL PROTECTIVE EQUIPMENT
Eye/Face Protection: No special eye protection is normally required. Where splashing is possible, wear safety glasses with side shields as a good safety practice.
Skin Protection: No special protective clothing is normally required. Where splashing is possible, select protective clothing depending on operations conducted, physical requirements and other substances in the workplace. Suggested materials for protective gloves include: 4H (PE/EVAL), Nitrile Rubber, Silver Shield, Viton.
Respiratory Protection: No respiratory protection is normally required.
If user operations generate an oil mist, determine if airborne concentrations are below the occupational exposure limit for mineral oil mist. If not, wear an approved respirator that provides adequate protection from the measured concentrations of this material. For air-purifying respirators use a particulate cartridge.
Use a positive pressure air-supplying respirator in circumstances where air-purifying respirators may not provide adequate protection.
Occupational Exposure Limits:

Component	Agency	TWA	STEL	Ceiling	Notation
Highly refined mineral oil (C15 - C50)	ACGIH	5 mg/m3	10 mg/m3	--	--
Highly refined mineral oil (C15 - C50)	OSHA Z-1	5 mg/m3	--	--	--

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Attention: the data below are typical values and do not constitute a specification.

Color: Amber
Physical State: Liquid
Odor: Petroleum odor
pH: Not Applicable
Vapor Pressure: <0.01 mmHg @ 100 °C (212 °F)
Vapor Density (Air = 1): >1
Boiling Point: >315 °C (599°F)
Solubility: Soluble in hydrocarbons; insoluble in water
Freezing Point: Not Applicable
Specific Gravity: 0.86 - 0.89 @ 15.6 °C (60.1°F) / 15.6°C (60.1°F)
Viscosity: 8 cSt @ 100 °C (212°F) (Min)

SECTION 10 STABILITY AND REACTIVITY

Chemical Stability: This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.
Incompatibility With Other Materials: May react with strong acids or strong oxidizing agents, such as chlorates, nitrates, peroxides, etc.
Hazardous Decomposition Products: None known (None expected)
Hazardous Polymerization: Hazardous polymerization will not occur.

SECTION 11 TOXICOLOGICAL INFORMATION

IMMEDIATE HEALTH EFFECTS
Eye Irritation: The eye irritation hazard is based on evaluation of data for similar materials or product components.
Skin Irritation: The skin irritation hazard is based on evaluation of data for similar materials or product

components.
Skin Sensitization: No product toxicology data available.
Acute Dermal Toxicity: The acute dermal toxicity hazard is based on evaluation of data for similar materials or product components.
Acute Oral Toxicity: The acute oral toxicity hazard is based on evaluation of data for similar materials or product components.
Acute Inhalation Toxicity: The acute inhalation toxicity hazard is based on evaluation of data for similar materials or product components.

ADDITIONAL TOXICOLOGY INFORMATION:
This product contains petroleum base oils which may be refined by various processes including severe solvent extraction, severe hydrocracking, or severe hydrotreating. None of the oils requires a cancer warning under the OSHA Hazard Communication Standard (29 CFR 1910.1200). These oils have not been listed in the National Toxicology Program (NTP) Annual Report nor have they been classified by the International Agency for Research on Cancer (IARC) as; carcinogenic to humans (Group 1), probably carcinogenic to humans (Group 2A), or possibly carcinogenic to humans (Group 2B). These oils have not been classified by the American Conference of Governmental Industrial Hygienists (ACGIH) as: confirmed human carcinogen (A1), suspected human carcinogen (A2), or confirmed animal carcinogen with unknown relevance to humans (A3).

During use in engines, contamination of oil with low levels of cancer-causing combustion products occurs. Used motor oils have been shown to cause skin cancer in mice following repeated application and continuous exposure. Brief or intermittent skin contact with used motor oil is not expected to have serious effects in humans if the oil is thoroughly removed by washing with soap and water.

SECTION 12 ECOLOGICAL INFORMATION

ECOTOXICITY
The toxicity of this material to aquatic organisms has not been evaluated. Consequently, this material should be kept out of sewage and drainage systems and all bodies of water.

ENVIRONMENTAL FATE
This material is not expected to be readily biodegradable.

SECTION 13 DISPOSAL CONSIDERATIONS

Use material for its intended purpose or recycle if possible. Oil collection services are available for used oil recycling or disposal. Place contaminated materials in containers and dispose of in a manner consistent with applicable regulations. Contact your sales representative or local environmental or health authorities for approved disposal or recycling methods.

SECTION 14 TRANSPORT INFORMATION

The description shown may not apply to all shipping situations. Consult 49CFR, or appropriate Dangerous Goods Regulations, for additional description requirements (e.g., technical name) and mode-specific or quantity-specific shipping requirements.
DOT Shipping Description: PETROLEUM LUBRICATING OIL

IMO/IMDG Shipping Description: PETROLEUM LUBRICATING OIL

ICAO/IATA Shipping Description: PETROLEUM LUBRICATING OIL

SECTION 15 REGULATORY INFORMATION

EPCRA 311/312 CATEGORIES: 1. Immediate (Acute) Health Effects: NO
2. Delayed (Chronic) Health Effects: NO
3. Fire Hazard: NO
4. Sudden Release of Pressure Hazard: NO

5. Reactivity Hazard: NO

REGULATORY LISTS SEARCHED:

01-1=IARC Group 1	03=EPCRA 313
01-2A=IARC Group 2A	04=CA Proposition 65
01-2B=IARC Group 2B	05=MA RTK
02=NTP Carcinogen	06=NJ RTK
	07=PA RTK

No components of this material were found on the regulatory lists above.

CHEMICAL INVENTORIES:
All components comply with the following chemical inventory requirements: EINECS (European Union), ENCS (Japan), IECSC (China), KECI (Korea), PICCS (Philippines), TSCA (United States).

One or more components has been notified but may not be listed in the following chemical inventories: DSL (Canada). Secondary notification by the importer may be required.

One or more components does not comply with the following chemical inventory requirements: AICS (Australia).

NEW JERSEY RTK CLASSIFICATION:
Under the New Jersey Right-to-Know Act L. 1983 Chapter 315 N.J.S.A. 34:5A-1 et. seq., the product is to be identified as follows: PETROLEUM OIL (Motor oil)

WHMIS CLASSIFICATION:
This product is not considered a controlled product according to the criteria of the Canadian Controlled Products Regulations.

SECTION 16 OTHER INFORMATION

NFPA RATINGS: Health: 0 Flammability: 1 Reactivity: 0

HMIS RATINGS: Health: 1 Flammability: 1 Reactivity: 0
(0-Least, 1-Slight, 2-Moderate, 3-High, 4-Extreme, PPE:- Personal Protection Equipment Index recommendation, *- Chronic Effect Indicator). These values are obtained using the guidelines or published evaluations prepared by the National Fire Protection Association (NFPA) or the National Paint and Coating Association (for HMIS ratings).

LABEL RECOMMENDATION:
Label Category : ENGINE OIL 1

REVISION STATEMENT: This revision updates the following sections of this Material Safety Data Sheet: 1,5,9,10
Revision Date: 01/06/2005

ABBREVIATIONS THAT MAY HAVE BEEN USED IN THIS DOCUMENT:

TLV - Threshold Limit Value	TWA - Time Weighted Average
STEL - Short-term Exposure Limit	PEL - Permissible Exposure Limit
	CAS - Chemical Abstract Service Number
ACGIH - American Conference of Government Industrial Hygienists	IMO/IMDG - International Maritime Dangerous Goods Code
API - American Petroleum Institute	MSDS - Material Safety Data Sheet
CVX - ChevronTexaco	NFPA - National Fire Protection Association (USA)
DOT - Department of Transportation (USA)	NTP - National Toxicology Program (USA)
IARC - International Agency for Research on Cancer	OSHA - Occupational Safety and Health Administration

Prepared according to the OSHA Hazard Communication Standard (29 CFR 1910.1200) and the ANSI MSDS Standard (Z400.1) by the ChevronTexaco Energy Research & Technology Company, 100 Chevron Way, Richmond, California 94802.

The above information is based on the data of which we are aware and is believed to be correct as of the date hereof. Since this information may be applied under conditions beyond our control and with which we may be unfamiliar and since data made available subsequent to the date hereof may suggest modifications of the information, we do not assume any responsibility for the results of its use. This information is furnished upon condition that the person receiving it shall make his own determination of the suitability of the material for his particular purpose.

CARG003886

Lubrication

Material Safety Data Sheet

SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

[redacted]

Product Number(s): CPS221806
Company Identification
ChevronTexaco Global Lubricants
6001 Bollinger Canyon Road
San Ramon, CA 94583
United States of America

Transportation Emergency Response
CHEMTREC: (800) 424-9300 or (703) 527-3887
Health Emergency
ChevronTexaco Emergency Information Center: Located in the USA. International collect calls accepted. (800) 231-0623 or (510) 231-0623
Product Information
email : lubemsds@chevrontexaco.com
Product Information: 800-LUBE-TEK
MSDS Requests: 800-414-6737

SECTION 2 COMPOSITION/ INFORMATION ON INGREDIENTS

COMPONENTS	CAS NUMBER	AMOUNT
Highly refined mineral oil (C15 - C50)	Mixture	80 - 95 %weight

SECTION 3 HAZARDS IDENTIFICATION

IMMEDIATE HEALTH EFFECTS
Eye: Not expected to cause prolonged or significant eye irritation.
Skin: Contact with the skin is not expected to cause prolonged or significant irritation. Not expected to be harmful to internal organs if absorbed through the skin. High-Pressure Equipment Information: Accidental high-velocity injection under the skin of materials of this type may result in serious injury. Seek medical attention at once should an accident like this occur. The initial wound at the injection site may not appear to be serious at first; but, if left untreated, could result in disfigurement or amputation of the affected part.
Ingestion: Not expected to be harmful if swallowed.
Inhalation: Not expected to be harmful if inhaled. Contains a petroleum-based mineral oil. May cause respiratory irritation or other pulmonary effects following prolonged or repeated inhalation of oil mist at airborne levels above the recommended mineral oil mist exposure limit. Symptoms of respiratory irritation may include coughing and difficulty breathing.

SECTION 4 FIRST AID MEASURES

Eye: No specific first aid measures are required. As a precaution, remove contact lenses, if worn, and flush eyes with water.
Skin: No specific first aid measures are required. As a precaution, remove clothing and shoes if contaminated. To remove the material from skin, use soap and water. Discard contaminated clothing and shoes or thoroughly clean before reuse.
Ingestion: No specific first aid measures are required. Do not induce vomiting. As a precaution, get medical advice.

Inhalation: No specific first aid measures are required. If exposed to excessive levels of material in the air, move the exposed person to fresh air. Get medical attention if coughing or respiratory discomfort occurs.
Note to Physicians: In an accident involving high-pressure equipment, this product may be injected under the skin. Such an accident may result in a small, sometimes bloodless, puncture wound. However, because of its driving force, material injected into a fingertip can be deposited into the palm of the hand. Within 24 hours, there is usually a great deal of swelling, discoloration, and intense throbbing pain. Immediate treatment at a surgical emergency center is recommended.

SECTION 5 FIRE FIGHTING MEASURES

Leaks/ruptures in high pressure system using materials of this type can create a fire hazard when in the vicinity of ignition sources (eg. open flame, pilot lights, sparks, or electric arcs).

FIRE CLASSIFICATION:
OSHA Classification (29 CFR 1910.1200): Not classified by OSHA as flammable or combustible.

NFPA RATINGS: Health: 0 Flammability: 1 Reactivity: 0

FLAMMABLE PROPERTIES:
Flashpoint: 175 °C (347 °F) (Min)
Autoignition: No Data Available
Flammability (Explosive) Limits (% by volume in air): Lower: Not Applicable Upper: Not Applicable

EXTINGUISHING MEDIA: Use water fog, foam, dry chemical or carbon dioxide (CO_2) to extinguish flames.
PROTECTION OF FIRE FIGHTERS:
Fire Fighting Instructions: This material will burn although it is not easily ignited. For fires involving this material, do not enter any enclosed or confined fire space without proper protective equipment, including self-contained breathing apparatus.
Combustion Products: Highly dependent on combustion conditions. A complex mixture of airborne solids, liquids, and gases including carbon monoxide, carbon dioxide, and unidentified organic compounds will be evolved when this material undergoes combustion. Combustion may form oxides of: Phosphorus, Sulfur .

SECTION 6 ACCIDENTAL RELEASE MEASURES

Protective Measures: Eliminate all sources of ignition in vicinity of spilled material.
Spill Management: Stop the source of the release if you can do it without risk. Contain release to prevent further contamination of soil, surface water or groundwater. Clean up spill as soon as possible, observing precautions in Exposure Controls/Personal Protection. Use appropriate techniques such as applying non-combustible absorbent materials or pumping. Where feasible and appropriate, remove contaminated soil. Place contaminated materials in disposable containers and dispose of in a manner consistent with applicable regulations.
Reporting: Report spills to local authorities and/or the U.S. Coast Guard's National Response Center at (800) 424-8802 as appropriate or required.

SECTION 7 HANDLING AND STORAGE

Precautionary Measures: DO NOT USE IN HIGH PRESSURE SYSTEMS in the vicinity of flames, sparks and hot surfaces. Use only in well ventilated areas. Keep container closed.
Keep out of the reach of children.
General Handling Information: Avoid contaminating soil or releasing this material into sewage and drainage systems and bodies of water.
Static Hazard: Electrostatic charge may accumulate and create a hazardous condition when handling this material. To minimize this hazard, bonding and grounding may be necessary but may not, by themselves, be sufficient. Review all operations which have the potential of generating and accumulating an electrostatic charge and/or a flammable atmosphere (including tank and container filling, splash filling, tank cleaning, sampling, gauging, switch loading, filtering, mixing, agitation, and vacuum truck operations) and use appropriate mitigating procedures. For more information, refer to OSHA Standard 29 CFR 1910.106, 'Flammable and Combustible Liquids', National Fire Protection Association (NFPA 77, 'Recommended Practice on Static Electricity', and/or the American Petroleum Institute (API) Recommended Practice 2003, 'Protection Against Ignitions Arising Out of Static, Lightning, and Stray Currents'.
Container Warnings: Container is not designed to contain pressure. Do not use pressure to empty container or it may rupture with explosive force. Empty containers retain product residue (solid, liquid, and/or vapor) and can be

dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, static electricity, or other sources of ignition. They may explode and cause injury or death. Empty containers should be completely drained, properly closed, and promptly returned to a drum reconditioner or disposed of properly.

SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

GENERAL CONSIDERATIONS:
Consider the potential hazards of this material (see Section 3), applicable exposure limits, job activities, and other substances in the work place when designing engineering controls and selecting personal protective equipment. If engineering controls or work practices are not adequate to prevent exposure to harmful levels of this material, the personal protective equipment listed below is recommended. The user should read and understand all instructions and limitations supplied with the equipment since protection is usually provided for a limited time or under certain circumstances.

ENGINEERING CONTROLS:
Use in a well-ventilated area.

PERSONAL PROTECTIVE EQUIPMENT
Eye/Face Protection: No special eye protection is normally required. Where splashing is possible, wear safety glasses with side shields as a good safety practice.
Skin Protection: No special protective clothing is normally required. Where splashing is possible, select protective clothing depending on operations conducted, physical requirements and other substances in the workplace. Suggested materials for protective gloves include: Nitrile Rubber, Silver Shield, Viton.
Respiratory Protection: No respiratory protection is normally required.
If user operations generate an oil mist, determine if airborne concentrations are below the occupational exposure limit for mineral oil mist. If not, wear an approved respirator that provides adequate protection from the measured concentrations of this material. For air-purifying respirators use a particulate cartridge.
Use a positive pressure air-supplying respirator in circumstances where air-purifying respirators may not provide adequate protection.
Occupational Exposure Limits:

Component	Agency	TWA	STEL	Ceiling	Notation
Highly refined mineral oil (C15 - C50)	ACGIH	5 mg/m3	10 mg/m3	--	--
Highly refined mineral oil (C15 - C50)	OSHA Z-1	5 mg/m3	--	--	--

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Attention: the data below are typical values and do not constitute a specification.

Color: Red
Physical State: Liquid
Odor: Petroleum odor
pH: Not Applicable
Vapor Pressure: <0.01 mmHg @ 37.8 °C (100 °F)
Vapor Density (Air = 1): >1
Boiling Point: >315°C (599°F)
Solubility: Soluble in hydrocarbons; insoluble in water
Freezing Point: Not Applicable
Melting Point: Not Applicable
Specific Gravity: 0.87 @ 15.6°C (60.1°F) / 15.6°C (60.1°F) (Typical)
Viscosity: 7 cSt @ 100°C (212°F) (Min)

SECTION 10 STABILITY AND REACTIVITY

Chemical Stability: This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.
Incompatibility With Other Materials: May react with strong acids or strong oxidizing agents, such as chlorates, nitrates, peroxides, etc.
Hazardous Decomposition Products: None known (None expected)

Hazardous Polymerization: Hazardous polymerization will not occur.

SECTION 11 TOXICOLOGICAL INFORMATION

IMMEDIATE HEALTH EFFECTS
Eye Irritation: The eye irritation hazard is based on evaluation of data for similar materials or product components.
Skin Irritation: The skin irritation hazard is based on evaluation of data for similar materials or product components.
Skin Sensitization: No product toxicology data available.
Acute Dermal Toxicity: The acute dermal toxicity hazard is based on evaluation of data for similar materials or product components.
Acute Oral Toxicity: The acute oral toxicity hazard is based on evaluation of data for similar materials or product components.
Acute Inhalation Toxicity: The acute inhalation toxicity hazard is based on evaluation of data for similar materials or product components.

ADDITIONAL TOXICOLOGY INFORMATION:
This product contains petroleum base oils which may be refined by various processes including severe solvent extraction, severe hydrocracking, or severe hydrotreating. None of the oils requires a cancer warning under the OSHA Hazard Communication Standard (29 CFR 1910.1200). These oils have not been listed in the National Toxicology Program (NTP) Annual Report nor have they been classified by the International Agency for Research on Cancer (IARC) as; carcinogenic to humans (Group 1), probably carcinogenic to humans (Group 2A), or possibly carcinogenic to humans (Group 2B). These oils have not been classified by the American Conference of Governmental Industrial Hygienists (ACGIH) as: confirmed human carcinogen (A1), suspected human carcinogen (A2), or confirmed animal carcinogen with unknown relevance to humans (A3).

SECTION 12 ECOLOGICAL INFORMATION

ECOTOXICITY
The toxicity of this material to aquatic organisms has not been evaluated. Consequently, this material should be kept out of sewage and drainage systems and all bodies of water.

ENVIRONMENTAL FATE
This material is not expected to be readily biodegradable.

SECTION 13 DISPOSAL CONSIDERATIONS

Use material for its intended purpose or recycle if possible. This material, if it must be discarded, may meet the criteria of a hazardous waste as defined by US EPA under RCRA (40 CFR 261) or other State and local regulations. Measurement of certain physical properties and analysis for regulated components may be necessary to make a correct determination. If this material is classified as a hazardous waste, federal law requires disposal at a licensed hazardous waste disposal facility.

SECTION 14 TRANSPORT INFORMATION

The description shown may not apply to all shipping situations. Consult 49CFR, or appropriate Dangerous Goods Regulations, for additional description requirements (e.g., technical name) and mode-specific or quantity-specific shipping requirements.
DOT Shipping Description: PETROLEUM LUBRICATING OIL

IMO/IMDG Shipping Description: PETROLEUM LUBRICATING OIL

SECTION 15 REGULATORY INFORMATION

EPCRA 311/312 CATEGORIES: 1. Immediate (Acute) Health Effects: NO
2. Delayed (Chronic) Health Effects: NO
3. Fire Hazard: NO
4. Sudden Release of Pressure Hazard: NO

5. Reactivity Hazard: NO

REGULATORY LISTS SEARCHED:

01-1=IARC Group 1	03=EPCRA 313
01-2A=IARC Group 2A	04=CA Proposition 65
01-2B=IARC Group 2B	05=MA RTK
02=NTP Carcinogen	06=NJ RTK
	07=PA RTK

No components of this material were found on the regulatory lists above.

CHEMICAL INVENTORIES:
All components comply with the following chemical inventory requirements: AICS (Australia), DSL (Canada), EINECS (European Union), ENCS (Japan), KECI (Korea), TSCA (United States).

One or more components does not comply with the following chemical inventory requirements: IECSC (China), PICCS (Philippines).

NEW JERSEY RTK CLASSIFICATION:
Under the New Jersey Right-to-Know Act L. 1983 Chapter 315 N.J.S.A. 34:5A-1 et. seq., the product is to be identified as follows: PETROLEUM OIL (Lubricating oil)

WHMIS CLASSIFICATION:
This product is not considered a controlled product according to the criteria of the Canadian Controlled Products Regulations.

SECTION 16 OTHER INFORMATION

NFPA RATINGS: Health: 0 Flammability: 1 Reactivity: 0

HMIS RATINGS: Health: 1 Flammability: 1 Reactivity: 0
(0-Least, 1-Slight, 2-Moderate, 3-High, 4-Extreme, PPE:- Personal Protection Equipment Index recommendation, *- Chronic Effect Indicator). These values are obtained using the guidelines or published evaluations prepared by the National Fire Protection Association (NFPA) or the National Paint and Coating Association (for HMIS ratings).

REVISION STATEMENT: This revision updates the following sections of this Material Safety Data Sheet: 2, 5, 8, 9, 14, 15
Revision Date: 02/12/2004

ABBREVIATIONS THAT MAY HAVE BEEN USED IN THIS DOCUMENT:

TLV - Threshold Limit Value	TWA - Time Weighted Average
STEL - Short-term Exposure Limit	PEL - Permissible Exposure Limit
	CAS - Chemical Abstract Service Number
ACGIH - American Conference of Government Industrial Hygienists	IMO/IMDG - International Maritime Dangerous Goods Code
API - American Petroleum Institute	MSDS - Material Safety Data Sheet
CVX - ChevronTexaco	NFPA - National Fire Protection Association (USA)
DOT - Department of Transportation (USA)	NTP - National Toxicology Program (USA)
IARC - International Agency for Research on Cancer	OSHA - Occupational Safety and Health Administration

Prepared according to the OSHA Hazard Communication Standard (29 CFR 1910.1200) and the ANSI MSDS Standard (Z400.1) by the ChevronTexaco Energy Research & Technology Company, 100 Chevron Way, Richmond, California 94802.

The above information is based on the data of which we are aware and is believed to be correct as of the date hereof. Since this information may be applied under conditions beyond our control and with which we may be unfamiliar and since data made available subsequent to the date hereof may suggest modifications of the information, we do not assume any responsibility for the results of its use. This information is furnished upon condition that the person receiving it shall make his own determination of the suitability of the material for his particular purpose.

HUSKEY Specialty Lubricants

manufactured by HUSK-ITT Corporation / SPECIALTY LUBRICANTS Corporation

Western Region Office:
1580 Industrial Avenue, Norco, California 92860
(951) 340-4000 • Fax: (951) 340-4011
(888) 4-HUSKEY • www.huskey.com

Eastern Region Office:
8300 Corporate Park Drive, Macedonia, Ohio 44056
(330) 425-2567 • Fax: (330) 425-9637
(800) 238-5823

MATERIAL SAFETY DATA SHEET CHEMTREC (800) 424-9300 (24HR)

PRODUCT TRADE NAME: HUSKEY 15A14 LUBE OIL (ALL ISO GRADES)
EFFECTIVE DATE: JANUARY 1, 2006 PAGE 1 OF 2

THIS MATERIAL SAFETY DATA SHEET CONTAINS ENVIRONMENTAL, HEALTH AND TOXICOLOGY INFORMATION FOR YOUR EMPLOYEES. PLEASE MAKE SURE THIS INFORMATION IS GIVEN TO THEM. IT ALSO CONTAINS INFORMATION TO HELP YOU MEET COMMUNITY RIGHT-TO-KNOW/EMERGENCY RESPONSE REPORTING REQUIREMENTS UNDER SARA TITLE 111 AND MANY OTHER LAWS. IF YOU RESELL THIS PRODUCT, THIS MSDS MUST BE GIVEN TO THE BUYER OR THE INFORMATION INCORPORATED IN YOUR MSDS.

DOT HAZARDOUS CLASSIFICATION: NOT REGULATED GREASE OR OI.L -N.O.S.
NFPA HELATH HAZARD: 1 FLAMMABILITY:1 REACTIVITY: 1 PERSONAL PROTECTION: B

SECTION 01 - HAZARDOUS INGREDIENTS

IF PRESENT, IARI, NTP AND OSHA CARCINOGENS AND CHEMICAL SUBJECT TO THIS REPORTING REQUIREMENTS OF SARA TITLE 111, SECTION 313 ARE IDENTIFIED IN THIS SECTION.

	CAS NUMBER	TLV	PEL	%
(NON-HAZARDOUS) COMPONENTS				
PROPRIETARY COMPONENTS:	**N.J.T.S.R.N.**			
SYNTHETIC OIL	80100362-5008P			99.9
	80100362-50049P			0.5

SECTION 02 - PHYSICAL DATA

WATER SOLUBILITY	INSOLUBLE	BOILING POINT. °F	N/A
SP, GRAVITY	0.84	MELTING POINT, °F	N/A
APPEARANCE & COLOR	WATER WHITE LIQUID	VOLATILE BY VOLUME, %	NIL
ODOR	MILD ODOR	VAPOR PRESSURE	N/A
EVAPORATION RATE	N/A	VAPOR DENSITY	N/A

SECTION 03 - FIRE AND EXPLOSION HAZARDS

FLASH POINT: (ASTM 092) C.O.C. MIN 290°F UPPER FLAMMABLE LIMIT: N/D LOWER FLAMMABLE LIMIT: N/D EXTINGUISHING MEDIA: CO_2, DRY CHEMICAL FOAM, WATER FOG, FOAM
SPECIAL FIRE FIGHTING PROCEDURES: TREAT AS OIL FIRE; USE SELF-CONTAINED BREATHING APPARATUS.
UNUSUAL FIRE & EXPLOSIVE HAZARDS: NONE

Lubricant 132

MATERIAL SAFETY DATA SHEET

EFFECTIVE DATE: 11-1-91

REVISION NUMBER: 3

QUAKER STATE CORPORATION • P.O. Box 989, Oil City, Pennsylvania 16301.

I. IDENTIFICATION

PRODUCT NAME: Quaker State Dexron III Mercon Automatic Transmission Fluid

PRODUCT CODE: 06319 (bulk)
06310 (55 gal. drum)
06309 (16 gal. drum)
06308 (5 gal. container)
406348 (1 qt. pl. bottle)

CHEMICAL NAME: N/A

FORMULA: Complex mixture of Petroleum Hydrocarbons plus Additives

SYNONYMS: Automatic Transmission Fluid

CHEMICAL FAMILY: Petroleum Hydrocarbon

DEPARTMENT OF TRANSPORTATION: HAZARD CLASSIFICATION: Not hazardous under DOT 172.101
SHIPPING NAME:

IDENTIFICATION #: None

CAS #: Mixture

CAS NAME: Mixture

II. TYPICAL COMPOSITION

MATERIAL	CAS #	TLV (UNITS) (SOURCE)	HAZARD
Non-hazardous - per OSHA 1910.1200 Hazard Communication Std.			
Severely Refined Mineral Oil	64742-56-9 and/or 64742-36-5	5 mg/M³ TWA ACGIH (Mist)	Respiratory Irritant
Detergent, Inhibitor and Viscosity Index Improver Additive* Mixture		None	None

*Additive manufacturer considers this additive package to be proprietary information.

III. PHYSICAL DATA

BOILING POINT, 760 mm. Hg: 680°F min.

PHYSICAL STATE: Liquid

SPECIFIC GRAVITY (H_2O = 1): .94

VAPOR PRESSURE AT 20°C.: N/D

VAPOR DENSITY (AIR = 1): N/D

SOLUBILITY IN WATER, % BY WT.: Nil

PER CENT VOLATILES BY VOLUME: Nil

EVAPORATION RATE (Butyl Acetate = 1) N/D

APPEARANCE AND ODOR: Red liquid with slight hydrocarbon odor.

This information is, to the best of Quaker State Corporation's knowledge and belief, accurate and reliable. However, no representation, warranty, or guarantee is made to its accuracy, reliability, or completeness. It is the user's responsibility to satisfy himself as to the suitableness and completeness of such information for his own particular use.

FOR FURTHER INFORMATION CALL: (814) 676-7676

IV. HEALTH HAZARD DATA

TLV AND SOURCE: Oil Mist, Mineral - TWA 5 mg/M³ ACGIH 1983-1984
STEL 10 mg/M³ ACGIH 1983-1984

ACUTE EFFECTS OF OVEREXPOSURE

SWALLOWING : Not expected to be acutely toxic by ingestion. May cause nausea and diarrhea.

SKIN ABSORPTION: No data available.

INHALATION : Not expected to be toxic by inhalation. However, breathing mineral oil mists at levels above the TLV may cause respiratory irritation and possible discomfort. The creation of an oil mist is unlikely when used as a motor oil.

SKIN CONTACT : Material not expected to cause skin irritation. Some persons be more sensitive than others to hydrocarbon exposes.

EYE CONTACT : May cause minor transient eye irritation.

CHRONIC EFFECTS OF OVEREXPOSURE

None known.

EMERGENCY AND FIRST AID PROCEDURES

SWALLOWING : If material is swallowed, do not induce vomiting and contact a physician.

SKIN : Wash skin thoroughly with soap and water. Launder soiled clothing.

INHALATION : Although inhalation of this material is unlikely, if respiratory discomfort or irritation occurs due to inhalation of oil mist, move person to fresh air. Contact a physician if discomfort or irritation continues.

EYES : Flush with water for 15 minutes. If irritation continues, contact a physician.

V. FIRE AND EXPLOSION HAZARD DATA

FLASH POINT [test method(s)]: >300° F, minimum (COC)

AUTO IGNITION TEMPERATURE: N/D

FLAMMABLE LIMITS IN AIR, % BY VOLUME: N/A

EXTINGUISHING MEDIA: CO_2, Dry Chemical, Foam, Water Fog. Water may be ineffective in fighting an oil fire unless used by experienced fire fighters.

SPECIAL FIRE FIGHTING PROCEDURES: For small fires involving this material, no special procedure or precautions are necessary. For large storage fires involving this material and/or other lubricating products, do not enter any enclosed or confined space without full protective equipment including self-contained breathing apparatus.

UNUSUAL FIRE AND EXPLOSION HAZARDS: Containers may burst when exposed to fire conditions.

VI. REACTIVITY DATA

STABILITY: Stable

CONDITIONS TO AVOID: High temperatures and open flame.

INCOMPATIBILITY (materials to avoid): Strong oxidizing agents.

HAZARDOUS COMBUSTION OR DECOMPOSITION PRODUCTS: Carbon dioxide, water vapor. May produce oxides of sulphur, nitrogen and phosphorus. Incomplete combustion can produce carbon monoxide.

HAZARDOUS POLYMERIZATION: Will not occur.

CONDITIONS TO AVOID: None known

VII. SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED:
Clean up spills as soon as possible. Absorb large spills with commercially available absorbent materials, such as absorbent clay.

WASTE DISPOSAL METHOD:
Place contaminated material in disposable containers and bury in an approved landfill site per local, state and federal regulations.

VIII. PERSONAL PROTECTION INFORMATION

RESPIRATORY PROTECTION (specify type): Not applicable for intended use. However, if unusual operating conditions create concentrations in excess of the TLV, an approved respirator is recommended.

VENTILATION: None needed for intended use. Special ventilation is necessary only if unusual operating conditions create concentrations in excess of the TLV.

PROTECTIVE GLOVES: Impervious protective gloves can minimize skin exposures where prolonged or repeated exposures can occur.

EYE PROTECTION: Although none normally necessary for intended use, safety glasses or a face shield can reduce the possibility of accidental eye contact.

OTHER PROTECTIVE EQUIPMENT: None normally necessary for intended use.

IX. SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE: Do not store near high heat, open flames or strong oxidizing materials.

Do not transfer this material to unmarked containers.

PRECAUTIONS DURING USE: Avoid prolonged or frequently repeated skin contact with this material. Skin contact can be minimized by wearing impervious protective gloves. As with all products of this nature, good personal hygiene is essential. Hands and other exposed areas should be washed thoroughly with soap and water after contact, especially before eating and/or smoking. Regular laundering of contaminated clothing is essential to reduce indirect skin contact with this material.

X. REGULATORY INFORMATION

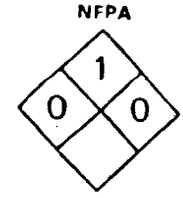
OSHA: Not hazardous under 1910.1200 The Hazard Communication Standard.

SARA Title III: Not Reportable.

N.J. Right To Know: REPORTABLE CONTENTS: Automatic Transmission Fluid
800967-5498 P*

*N.J. Trade Secret Registry No.

NFPA



HAZARD IDENTIFICATION

NOTES

Approved by D. W. Cralley - Manager Safety & Health

Lubricant 137

MATERIAL SAFETY DATA SHEET

EFFECTIVE DATE: 6-1-89

REVISION NUMBER: 1

QUAKER STATE CORPORATION • P.O. Box 989, Oil City, Pennsylvania 16301.

I. IDENTIFICATION

PRODUCT NAME: Quaker State 450 Super HD Brake Fluid

PRODUCT CODE: 67001 (32 oz.)
67003 (5 gal.)
67004 (55 gal. drum)
67041 (12 oz.)
67064 (1 gal.)

CHEMICAL NAME: N/A

FORMULA: N/A

CHEMICAL FAMILY: Glycols, glycol ethers

SYNONYMS: Brake Fluid

DEPARTMENT OF TRANSPORTATION: HAZARD CLASSIFICATION: Not hazardous under DOT 172.101 (See "Notes" page 4).
SHIPPING NAME: Hydraulic Brake Fluid IDENTIFICATION #: N/A

CAS #: Mixture CAS NAME: Mixture

II. TYPICAL COMPOSITION

MATERIAL	CAS #	% wt.	TLV (UNITS) (SOURCE)	HAZARD
Diethylene Glycol	111-46-6	8	None established	Ingestion
Complex mixture of Glycols, Polyglycols, Glycol Ethers & Inhibitors*	Mixture	92	None established	Eyes, Skin

*We consider our blend of glycols to be proprietary information.

III. PHYSICAL DATA

BOILING POINT, 760 mm. Hg: 485° F (typical)

PHYSICAL STATE: Liquid

SPECIFIC GRAVITY (H_2O = 1): 1.021

VAPOR PRESSURE AT 20°C.: Very low

VAPOR DENSITY (AIR = 1): N/D

SOLUBILITY IN WATER, % BY WT.: 100%

PER CENT VOLATILES BY VOLUME: Negligible

EVAPORATION RATE (Butyl Acetate = 1) N/D

APPEARANCE AND ODOR: Clear liquid, mild odor.

This information is, to the best of Quaker State Corporation's knowledge and belief, accurate and reliable. However, no representation, warranty, or guarantee is made to its accuracy, reliability, or completeness. It is the user's responsibility to satisfy himself as to the suitableness and completeness of such information for his own particular use.

FOR FURTHER INFORMATION CALL: (814) 676-7676

IV. HEALTH HAZARD DATA

TLV AND SOURCE:

ACUTE EFFECTS OF OVEREXPOSURE

SWALLOWING : Ingestion of small quantities not expected to be fatal, may cause nausea and diarrhea. LD_{50} determined to be between 5 gm-10 gm/kg.

SKIN ABSORPTION: No data available.

INHALATION : Not expected to be more than mildly toxic by inhalation. Inhalation of mist could cause irritation and discomfort.

SKIN CONTACT : Material expected to cause no more than minor skin irritation following prolonged and/or repeated contact.

EYE CONTACT : May cause minor eye irritation.

CHRONIC EFFECTS OF OVEREXPOSURE

Repeated skin contact can result in hypersensitivity to product. Avoid prolonged or repeated contact by using chemically resistant gloves.

EMERGENCY AND FIRST AID PROCEDURES

SWALLOWING : If material is swallowed, induce vomiting and contact a physician.

SKIN : Wash skin thoroughly with soap and water. Launder soiled clothing.

INHALATION : Although inhalation of this material is unlikely, if respiratory discomfort or irritation occurs due to inhalation of oil mist, move person to fresh air. Contact a physician if discomfort or irritation continues.

EYES : Flush with water for 15 minutes. If irritation continues, contact a physician.

NOTES TO PHYSICIAN

V. FIRE AND EXPLOSION HAZARD DATA

FLASH POINT [test method(s)]: 298° F, minimum (COC)

AUTO IGNITION TEMPERATURE: N/D

FLAMMABLE LIMITS IN AIR, % BY VOLUME: N/A

EXTINGUISHING MEDIA: CO_2, Dry Chemical, Foam, Water Fog. Water may be ineffective in fighting an oil fire unless used by experienced fire fighters.

SPECIAL FIRE FIGHTING PROCEDURES: For small fires involving this material, no special procedure or precautions are necessary. For large storage fires involving this material and/or other lubricating products, do not enter any enclosed or confined space without full protective equipment including self-contained breathing apparatus.

UNUSUAL FIRE AND EXPLOSION HAZARDS: Containers may burst when exposed to fire conditions. (See "Notes" page 4)

VI. REACTIVITY DATA

STABILITY: Stable

CONDITIONS TO AVOID: High temperatures and open flame.

INCOMPATIBILITY (materials to avoid): Strong oxidizing agents.

HAZARDOUS COMBUSTION OR DECOMPOSITION PRODUCTS: Carbon dioxide, water vapor. May produce oxides of sulphur, nitrogen and phosphorus. Incomplete combustion can produce carbon monoxide.

HAZARDOUS POLYMERIZATION: Will not occur.

CONDITIONS TO AVOID: None known

VII. SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED:
Clean up spills as soon as possible. Absorb large spills with commercially available absorbent materials, such as absorbent clay.

WASTE DISPOSAL METHOD:
Place contaminated material in disposable containers and bury in an approved landfill site per local, state and federal regulations.

VIII. PERSONAL PROTECTION INFORMATION

RESPIRATORY PROTECTION (specify type): Not applicable for intended use.

VENTILATION: None needed for intended use.

PROTECTIVE GLOVES: Impervious protective gloves can minimize skin exposures where prolonged or repeated exposures can occur.

EYE PROTECTION: Although none normally necessary for intended use, safety glasses or a face shield can reduce the possibility of accidental eye contact.

OTHER PROTECTIVE EQUIPMENT: None normally necessary for intended use.

IX. SPECIAL PRECAUTIONS

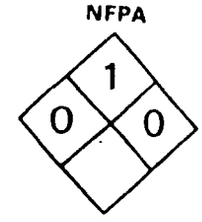
PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE: Do not store near high heat or open flames.

PRECAUTIONS DURING USE: Avoid prolonged or frequently repeated skin contact with this material. Skin contact can be minimized by wearing impervious protective gloves. As with all products of this nature, good personal hygiene is essential. Hands and other exposed areas should be washed thoroughly with soap and water after contact, especially before eating and/or smoking. Regular laundering of contaminated clothing is essential to reduce indirect skin contact with this material.

X. REGULATORY INFORMATION

New York Fire Department considers all liquids with a flashpoint between 100°F and 300°F "Combustible" and requires special container labeling approval.

NFPA



HAZARD IDENTIFICATION

NOTES

Approved by D. W. Cralley - Corporate Safety Coordinator

Lubricant 135

MATERIAL SAFETY DATA SHEET

EFFECTIVE DATE: 7-1-90

REVISION NUMBER: 3

QUAKER STATE CORPORATION • P.O. Box 989, Oil City, Pennsylvania 16301.

I. IDENTIFICATION

PRODUCT NAME: Quaker State High Performance Gear Lubricant (SAE 80W90 and 85W140)

CHEMICAL NAME:

PRODUCT CODE: See "Notes" on page 4

FORMULA: Complex mixture of Petroleum Hydrocarbons & Additives

CHEMICAL FAMILY: Hydrocarbons & Additives

SYNONYMS: Gear Lube

DEPARTMENT OF TRANSPORTATION: HAZARD CLASSIFICATION: Not hazardous under DOT 172.101

SHIPPING NAME: Petroleum Lubricant

IDENTIFICATION #:

CAS #: Mixture

CAS NAME: Mixture

II. TYPICAL COMPOSITION

MATERIAL	CAS #	% wt.	TLV (UNITS) (SOURCE)	HAZARD
Mineral Oils@	Mixture	> 90	5 mg/M- TWA (ACGIH)	Respiratory Irritant
*Extreme Pressure, Friction Anti-Oxidant, Corrosion Inhibitor, Pour Point and Viscosity Improver Additives	Mixture	< 10		

*Although additive contains Sulfur, Phosphorous and Hydrocarbon Polymers, this formulation is considered to be proprietary information by the manufacturer.

@We consider our blend of mineral oils to be proprietary information.

III. PHYSICAL DATA

BOILING POINT, 760 mm. Hg: Not determined

PHYSICAL STATE: Liquid

SPECIFIC GRAVITY (H_2O = 1): @ 15.6° C/0.889/0.9042

VAPOR PRESSURE AT 20°C.:

VAPOR DENSITY (AIR = 1): N/A

SOLUBILITY IN WATER, % BY WT.: Insoluble

PER CENT VOLATILES BY VOLUME: N/A

EVAPORATION RATE (Butyl Acetate = 1) N/A

APPEARANCE AND ODOR: Dark colored liquid, pungent odor.

This information is, to the best of Quaker State Corporation's knowledge and belief, accurate and reliable. However, no representation, warranty, or guarantee is made to its accuracy, reliability, or completeness. It is the user's responsibility to satisfy himself as to the suitableness and completeness of such information for his own particular use.

FOR FURTHER INFORMATION CALL: (814) 676-7676

IV. HEALTH HAZARD DATA

TLV AND SOURCE: Mineral Oil 5 mg/M- TWA (ACGIH) As an oil mist
(Due to the viscosity of this material, creation of an oil mist is highly unlikely.)

ACUTE EFFECTS OF OVEREXPOSURE

SWALLOWING : Not expected to be acutely toxic by ingestion.

SKIN ABSORPTION: No data available.

INHALATION : Not expected to be toxic by inhalation. However, breathing mineral oil mists at levels above the TLV may cause respiratory irritation and possible discomfort. As mentioned above, creation of an oil mist of this material is unlikely.

SKIN CONTACT : Material expected to cause no more than minor skin irritation following prolonged and/or repeated contact.

EYE CONTACT : May cause minor eye irritation.

CHRONIC EFFECTS OF OVEREXPOSURE

None known.

EMERGENCY AND FIRST AID PROCEDURES

SWALLOWING : If large quantities of this material are swallowed, give victim water, induce vomiting and contact a physician.

SKIN : Wash skin thoroughly with soap and water. Launder soiled clothing.

INHALATION : Although inhalation of this material is unlikely, if respiratory discomfort or irritation occurs due to inhalation of the product as an oil mist, remove person from exposure. Contact a physician if discomfort or irritation continues.

EYES : Flush with water for 15 minutes. If irritation continues, contact a physician.

NOTES TO PHYSICIAN

V. FIRE AND EXPLOSION HAZARD DATA

FLASH POINT [test method(s)]: 145°C 295°F (PMCC)

FLAMMABLE LIMITS IN AIR, % BY VOLUME: N/A

EXTINGUISHING MEDIA: CO_2, Dry Chemical, Foam & Water Spray. On large storage fires, water spray may be ineffective.

SPECIAL FIRE FIGHTING PROCEDURES: For small fires involving this material, no special procedure or precautions are necessary. For large storage fires involving this material and/or other lubricating products, do not enter any enclosed or confined space without full protective equipment including self-contained breathing apparatus.

UNUSUAL FIRE AND EXPLOSION HAZARDS: None

VI. REACTIVITY DATA

STABILITY: Stable

CONDITIONS TO AVOID: High temperatures and open flame.

INCOMPATIBILITY (materials to avoid): Strong oxidizing agents.

HAZARDOUS COMBUSTION OR DECOMPOSITION PRODUCTS: Carbon dioxide, water vapor. May produce oxides of sulphur, calcium, barium, boron, zinc, nitrogen and phosphorus. Incomplete combustion can produce carbon monoxide.

HAZARDOUS POLYMERIZATION: Will not occur.

CONDITIONS TO AVOID: None known

VII. SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED:
Clean up spills as soon as possible. Absorb large spills with commercially available absorbent materials, such as absorbent clay.

WASTE DISPOSAL METHOD:
Place contaminated material in disposable containers and bury in an approved landfill site per local, state and federal regulations.

VIII. PERSONAL PROTECTION INFORMATION

RESPIRATORY PROTECTION (specify type): Not applicable for intended use. However, if unusual operating conditions create concentrations in excess of the TLV, an approved respirator is recommended.

VENTILATION: None needed for intended use. Special ventilation is necessary only if unusual operating conditions create concentrations in excess of the TLV.

PROTECTIVE GLOVES: Although none normally needed for intended use, impervious protective gloves will minimize skin exposure.

EYE PROTECTION: Although none normally necessary for intended use, safety glasses or a face shield can reduce the possibility of accidental eye contact.

OTHER PROTECTIVE EQUIPMENT: None normally necessary for intended use.

IX. SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE: Do not store near high heat or open flames.

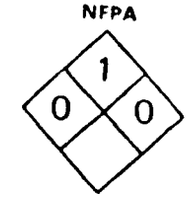
PRECAUTIONS DURING USE: Avoid prolonged or frequently repeated skin contact with this material. Skin contact can be minimized by wearing impervious protective gloves. As with all products of this nature, good personal hygiene is essential. Hands and other exposed areas should be washed thoroughly with soap and water after contact, especially before eating and/or smoking. Regular laundering of contaminated clothing is essential to reduce indirect skin contact with this material.

X. REGULATORY INFORMATION

OSHA: Not hazardous under 1910.1200 The Hazard Communication Standard.

SARA Title III: Not reportable under SARA Title III.

NFPA



HAZARD IDENTIFICATION

NOTES

PRODUCT CODES

80W-90 EP	85W-140 EP	Package
60119	60219	Bulk
60127	60227	400 lb. drum
60126	60226	120 lb. drum
60125	60225	35 lb. pail
60138	60238	1 qt. plastic

Approved by D. W. Cralley - Manager Safety & Health

Lubricant

MATERIAL SAFETY DATA SHEET

EFFECTIVE DATE: 7-1-90

REVISION NUMBER: 4

QUAKER STATE CORPORATION • P.O. Box 989, Oil City, Pennsylvania 16301.

I. IDENTIFICATION

PRODUCT NAME: Quaker State Super Blend Motor Oil (10W-30, 20W-40)

PRODUCT CODE: See "Notes" on page 4

CHEMICAL NAME: N/A

FORMULA: Complex mixture of Petroleum Hydrocarbons plus Additives

SYNONYMS: Multi-viscosity motor oil

CHEMICAL FAMILY: Petroleum Hydrocarbon

DEPARTMENT OF TRANSPORTATION:

HAZARD CLASSIFICATION: Not hazardous under DOT 172.101

SHIPPING NAME: Petroleum Lubricating Oil

IDENTIFICATION #: None

CAS #: Mixture

CAS NAME: Mixture

II. TYPICAL COMPOSITION

MATERIAL	CAS #	% wt.	TLV (UNITS) (SOURCE)	HAZARD
Mineral Oils@	Mixture	> 90	5 mg/M- TWA ACGIH	
Additive Package*	Mixture	< 10		

*Additive manufacturers consider their additive package to be proprietary information.

@We consider our blend of mineral oils to be proprietary information.

III. PHYSICAL DATA

BOILING POINT, 760 mm. Hg:	N/D	PHYSICAL STATE:	Liquid
SPECIFIC GRAVITY (H_2O = 1):	≅ .87	VAPOR PRESSURE AT 20°C.:	N/D
VAPOR DENSITY (AIR = 1):	N/D	SOLUBILITY IN WATER, % BY WT.:	Nil
PER CENT VOLATILES BY VOLUME:	Nil	EVAPORATION RATE (Butyl Acetate = 1)	N/D

APPEARANCE AND ODOR: Amber liquid (thickness dependent on viscosity). Slight hydrocarbon odor.

This information is, to the best of Quaker State Corporation's knowledge and belief, accurate and reliable. However, no representation, warranty, or guarantee is made to its accuracy, reliability, or completeness. It is the user's responsibility to satisfy himself as to the suitableness and completeness of such information for his own particular use.

FOR FURTHER INFORMATION CALL: (814) 676-7676

IV. HEALTH HAZARD DATA

TLV AND SOURCE: Oil Mist, Mineral - TWA 5 mg/M- ACGIH 1983-1984
STEL 10 mg/M- ACGIH 1983-1984

ACUTE EFFECTS OF OVEREXPOSURE

SWALLOWING : Not expected to be acutely toxic by ingestion. May cause nausea and diarrhea.

SKIN ABSORPTION: No data available.

INHALATION : Not expected to be toxic by inhalation. However, breathing mineral oil mists at levels above the TLV may cause respiratory irritation and possible discomfort. The creation of an oil mist is unlikely when used as a motor oil.

SKIN CONTACT : Material expected to cause no more than minor skin irritation following prolonged and/or repeated contact.

EYE CONTACT : May cause minor eye irritation.

CHRONIC EFFECTS OF OVEREXPOSURE

None known. See Notes to Physician below.

EMERGENCY AND FIRST AID PROCEDURES

SWALLOWING : If material is swallowed, do not induce vomiting and contact a physician.

SKIN : Wash skin thoroughly with soap and water. Launder soiled clothing.

INHALATION : Although inhalation of this material is unlikely, if respiratory discomfort or irritation occurs due to inhalation of oil mist, move person to fresh air. Contact a physician if discomfort or irritation continues.

EYES : Flush with water for 15 minutes. If irritation continues, contact a physician.

NOTES TO PHYSICIAN

Used motor oils have been shown to cause skin cancer in mice following repeated application and continuous exposure. Brief or intermittent skin contact with used motor oil is not expected to have serious effects in humans if the oil is thoroughly removed by washing with soap and water. It is believed during use in internal combustion engines contamination of oil with low levels of cancer causing combustion products (poly nuclear aromatics) occurs.

V. FIRE AND EXPLOSION HAZARD DATA

FLASH POINT [test method(s)]: 400° F, minimum (COC)
AUTO IGNITION TEMPERATURE: N/D

FLAMMABLE LIMITS IN AIR, % BY VOLUME: N/A

EXTINGUISHING MEDIA: CO_2, Dry Chemical, Foam, Water Fog. Water may be ineffective in fighting an oil fire unless used by experienced fire fighters.

SPECIAL FIRE FIGHTING PROCEDURES: For small fires involving this material, no special procedure or precautions are necessary. For large storage fires involving this material and/or other lubricating products, do not enter any enclosed or confined space without full protective equipment including self-contained breathing apparatus.

UNUSUAL FIRE AND EXPLOSION HAZARDS: Containers may burst when exposed to fire conditions.

VI. REACTIVITY DATA

STABILITY: Stable

CONDITIONS TO AVOID: High temperatures and open flame.

INCOMPATIBILITY (materials to avoid): Strong oxidizing agents.

HAZARDOUS COMBUSTION OR DECOMPOSITION PRODUCTS: Carbon dioxide, water vapor. May produce oxides of sulphur, nitrogen and phosphorus. Incomplete combustion can produce carbon monoxide.

HAZARDOUS POLYMERIZATION: Will not occur.

CONDITIONS TO AVOID: None known

VII. SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED:
Clean up spills as soon as possible. Absorb large spills with commercially available absorbent materials, such as absorbent clay.

WASTE DISPOSAL METHOD:
Place contaminated material in disposable containers and bury in an approved landfill site per local, state and federal regulations.

VIII. PERSONAL PROTECTION INFORMATION

RESPIRATORY PROTECTION (specify type): Not applicable for intended use. However, if unusual operating conditions create concentrations in excess of the TLV, an approved respirator is recommended.

VENTILATION: None needed for intended use. Special ventilation is necessary only if unusual operating conditions create concentrations in excess of the TLV.

PROTECTIVE GLOVES: Impervious protective gloves can minimize skin exposures where prolonged or repeated exposures can occur. EYE PROTECTION: Although none normally necessary for intended use, safety glasses or a face shield can reduce the possibility of accidental eye contact.
OTHER PROTECTIVE EQUIPMENT: None normally necessary for intended use.

IX. SPECIAL PRECAUTIONS

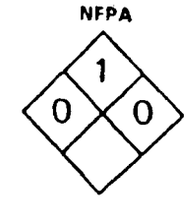
PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE: Do not store near high heat or open flames.

PRECAUTIONS DURING USE: Avoid prolonged or frequently repeated skin contact with this material. Skin contact can be minimized by wearing impervious protective gloves. As with all products of this nature, good personal hygiene is essential. Hands and other exposed areas should be washed thoroughly with soap and water after contact, especially before eating and/or smoking. Regular laundering of contaminated clothing is essential to reduce indirect skin contact with this material.

X. REGULATORY INFORMATION

OSHA: Not hazardous under 1910.1200 The Hazard Communication Standard.

SARA Title III: 1-3% Zinc Reportable under Sec. 313.



HAZARD IDENTIFICATION

NOTES

PRODUCT CODES

10W-30	20W-40	Package
01219	01319	Bulk
01210	01310	55 gal. drum
01208	01308	5 gal. container
01207		5 qt. pl. jugs
401248	401348	1 qt. pl. bottle

Approved by D. W. Cralley - Corporate Safety Coordinator

Lubricant 138

MATERIAL SAFETY DATA SHEET

EFFECTIVE DATE: 7-8-88

REVISION NUMBER: 1

QUAKER STATE CORPORATION • P.O. Box 989, Oil City, Pennsylvania 16301.

I. IDENTIFICATION

PRODUCT NAME: Quaker State Power Steering Fluid

PRODUCT CODE: 67020 (12 oz. pl.) 98-QS-12
67042 (5 gal. pl.) 98-QS-5G
67043 (54 gal. dr.) 98-QS-54G
67054 (8 oz. pl.)
67055 (1 gal. pl.)

CHEMICAL NAME: N/A

FORMULA: N/A

SYNONYMS: Power Steering Fluid

CHEMICAL FAMILY: Petroleum hydrocarbon and additives

DEPARTMENT OF TRANSPORTATION: HAZARD CLASSIFICATION: Not hazardous under DOT 172.101
SHIPPING NAME: Power Steering Fluid
IDENTIFICATION #: N/A

CAS #: Mixture

CAS NAME: Mixture

II. TYPICAL COMPOSITION

MATERIAL	CAS #	% wt.	TLV (UNITS) (SOURCE)	HAZARD
Mineral Oil	Varies*	80-95	5 mg/M^3 TWA (ACGIH)	None known
Fatty Acid Ester*		< 5		None known
Methacrylate Polymer*		< 5		None known

*Non hazardous under OSHA 1910.1200

III. PHYSICAL DATA

BOILING POINT, 760 mm. Hg: N/D

PHYSICAL STATE: Liquid

SPECIFIC GRAVITY (H_2O = 1): .8789

VISCOSITY cSt @ 40° C: 51.5

VAPOR PRESSURE AT 20°C.: N/D

VAPOR DENSITY (AIR = 1): N/D

SOLUBILITY IN WATER, % BY WT.: N/D

PER CENT VOLATILES BY VOLUME: N/D

EVAPORATION RATE (Butyl Acetate = 1) N/D

APPEARANCE AND ODOR: Clear straw colored liquid. Mild hydrocarbon odor.

This information is, to the best of Quaker State Corporation's knowledge and belief, accurate and reliable. However, no representation, warranty, or guarantee is made to its accuracy, reliability, or completeness. It is the user's responsibility to satisfy himself as to the suitableness and completeness of such information for his own particular use.

FOR FURTHER INFORMATION CALL: (814) 676-7676

IV. HEALTH HAZARD DATA

TLV AND SOURCE: TWA 5 mg/M³ ACGIH 1983-1984 as a mineral oil mist
STEL 10 mg/M³ ACGIH 1983-1984 as a mineral oil mist

ACUTE EFFECTS OF OVEREXPOSURE

SWALLOWING : Practically non-toxic (LD_{50} > 20.0 g/kg [rat])

SKIN ABSORPTION: N/D

INHALATION : Believed to be minimally irritating if exposures exceed permissible concentrations.

SKIN CONTACT : Slightly irritating with possible redness, edema, or drying of the skin with repeated prolonged exposures.

EYE CONTACT : Causes minimal eye irritation. Transient minor irritation may be noted following initial contact.

CHRONIC EFFECTS OF OVEREXPOSURE

N/D

EMERGENCY AND FIRST AID PROCEDURES

SWALLOWING : None considered necessary.

SKIN : Wash exposed area with soap and water. If irritation occurs, seek medical attention.

INHALATION : If irritation through exposure to an oil mist in excess of established TLV's occurs, remove from exposure. If irritation persists, seek medical attention.

EYES : Flush eyes with generous amounts of water. If irritation is present after washing, seek medical attention.

NOTES TO PHYSICIAN

This product contains less than 1% zinc dithiophosphate. ZDDP's have recently (1980 and 1981) been tested by repeated application to the skin of male rabbits. Severe skin irritation, weight loss or failure of the animals to gain weight and adverse testicular effects, primarily underdeveloped testicles, were seen. It is not yet clear whether the testicular effects are due to the toxicity of ZDDP or to the severe stress placed on the animals as a result of the extensive skin irritation. However, similar testicular effects have been shown when skin damage and resulting stress are produced by application of a simple non-ZDDP caustic material.

There is no evidence that human exposure to ZDDP will cause similar testicular effects. However, we strongly recommend that the precautions outlined in this bulletin be followed to minimize contact with this product.

V. FIRE AND EXPLOSION HAZARD DATA

FLASH POINT [test method(s)]: 350° F COC

FLAMMABLE LIMITS IN AIR, % BY VOLUME: N/D

EXTINGUISHING MEDIA: Dry Chemical, CO_2, Foam. Water spray may be ineffective. Water or foam may cause frothing.

SPECIAL FIRE FIGHTING PROCEDURES: Use water to cool fire-exposed containers. If a leak or spill has not ignited, use water spray to disperse the vapors and to provide protection for persons in the immediate area.

UNUSUAL FIRE AND EXPLOSION HAZARDS:

VI. REACTIVITY DATA

STABILITY: Stable

CONDITIONS TO AVOID: Excess heat; direct flame.

INCOMPATIBILITY (materials to avoid): None known.

HAZARDOUS COMBUSTION OR DECOMPOSITION PRODUCTS: CO, CO_2, aldehydes and ketones, combustion products of nitrogen and sulfur.

HAZARDOUS POLYMERIZATION: Does not occur

CONDITIONS TO AVOID: None known.

VII. SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED:
Contain spill. Absorb with suitable material and dispose of in accordance with local, state and federal regulations.

WASTE DISPOSAL METHOD:
See above.

VIII. PERSONAL PROTECTION INFORMATION

RESPIRATORY PROTECTION (specify type): None needed for intended use.

VENTILATION: Normal general ventilation adequate for intended use.

PROTECTIVE GLOVES: None necessary for intended use. However, if skin contamination is imminent use of oil impervious gloves are recommended.

EYE PROTECTION: None necessary for intended use.

OTHER PROTECTIVE EQUIPMENT: None necessary.

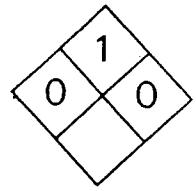
IX. SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE: Avoid storage in areas where temperatures exceed 140° F. Water contamination should be avoided.

PRECAUTIONS DURING USE: Avoid prolonged or frequently repeated skin contact with this material. Skin can contact be minimized by wearing impervious protective gloves. As with all products of this nature, good personal hygiene is essential. Hands and other exposed areas should be washed thoroughly with soap and water after contact, especially before eating and/or smoking. Regular laundering of contaminated clothing is essential to reduce indirect skin contact with this material.

X. REGULATORY INFORMATION

NFPA



HAZARD IDENTIFICATION

NOTES

Approved by D. W. Cralley - Corporate Safety Coordinator

Lubricant 136

MATERIAL SAFETY DATA SHEET

EFFECTIVE DATE: 6-1-92

REVISION NUMBER: 4

QUAKER STATE CORPORATION • P.O. Box 989, Oil City, Pennsylvania 16301.

I. IDENTIFICATION

PRODUCT NAME: Quaker State Tractor Hydraulic Transmission Oil

PRODUCT CODE: 16108 5 gal. pail
16110 55 gal. drum
16119 bulk

CHEMICAL NAME: N/A

FORMULA: Complex mixture of Petroleum Hydrocarbons plus Additives

CHEMICAL FAMILY: Petroleum Hydrocarbon

SYNONYMS: Hydraulic Oil

DEPARTMENT OF TRANSPORTATION: HAZARD CLASSIFICATION: Not hazardous under DOT 172.101
SHIPPING NAME: Petroleum Lubricating Oil IDENTIFICATION #: None

CAS #: Mixture CAS NAME: Mixture

II. TYPICAL COMPOSITION

MATERIAL	CAS #	% wt.	TLV (UNITS) (SOURCE)	HAZARD
Mineral Oils@	Mixture	> 90	5 mg/M³ TWA OSHA 1910.1000(1989)	Respiratory Irritant
Additive Package*	Mixture	< 10	None	None
(includes Zinc Compounds)	Mixture	< 3	None	None

*Additive manufacturers consider their additive package to be proprietary information.
@We consider our blend of mineral oils to be proprietary information.

III. PHYSICAL DATA

BOILING POINT, 760 mm. Hg: > 600° F

PHYSICAL STATE: Liquid

SPECIFIC GRAVITY (H_2O = 1): 0.89

VAPOR PRESSURE AT 20°C.: N/A

VAPOR DENSITY (AIR = 1): N/A

SOLUBILITY IN WATER, % BY WT.: Nil

PER CENT VOLATILES BY VOLUME: N/A

EVAPORATION RATE (Butyl Acetate = 1) N/A

APPEARANCE AND ODOR: Amber liquid, hydrocarbon odor.

This information is, to the best of Quaker State Corporation's knowledge and belief, accurate and reliable. However, no representation, warranty, or guarantee is made to its accuracy, reliability, or completeness. It is the user's responsibility to satisfy himself as to the suitableness and completeness of such information for his own particular use.

FOR FURTHER INFORMATION CALL: (814) 676-7676

IV. HEALTH HAZARD DATA

TLV AND SOURCE: Oil Mist, Mineral - TWA 5 mg/M^3 TWA OSHA 1910-1000 (1989)

ACUTE EFFECTS OF OVEREXPOSURE

SWALLOWING : Not expected to be acutely toxic by ingestion. May cause nausea and diarrhea.

SKIN ABSORPTION: No data available.

INHALATION : Not expected to be toxic by inhalation. However, breathing mineral oil mists at levels above the TLV may cause respiratory irritation and possible discomfort. The creation of an oil mist is unlikely when used as a hydraulic oil.

SKIN CONTACT : Material expected to cause no more than minor skin irritation following prolonged and/or repeated contact.

EYE CONTACT : May cause minor eye irritation.

CHRONIC EFFECTS OF OVEREXPOSURE

None known.

EMERGENCY AND FIRST AID PROCEDURES

SWALLOWING : If material is swallowed, do not induce vomiting and contact a physician.

SKIN : Wash skin thoroughly with soap and water. Launder soiled clothing.

INHALATION : Although inhalation of this material is unlikely, if respiratory discomfort or irritation occurs due to inhalation of oil mist, move person to fresh air. Contact a physician if discomfort or irritation continues.

EYES : Flush with water for 15 minutes. If irritation continues, contact a physician.

V. FIRE AND EXPLOSION HAZARD DATA

FLASH POINT [test method(s)]: 400° F (COC) AUTO IGNITION TEMPERATURE: N/D

FLAMMABLE LIMITS IN AIR, % BY VOLUME: N/A

EXTINGUISHING MEDIA: CO_2, Dry Chemical, Foam, Water Fog. Water may be ineffective in fighting an oil fire unless used by experienced fire fighters.

SPECIAL FIRE FIGHTING PROCEDURES: For small fires involving this material, no special procedure or precautions are necessary. For large storage fires involving this material and/or other lubricating products, do not enter any enclosed or confined space without full protective equipment including self-contained breathing apparatus.

UNUSUAL FIRE AND EXPLOSION HAZARDS: Containers may burst when exposed to fire conditions.

VI. REACTIVITY DATA

STABILITY: Stable

CONDITIONS TO AVOID: High temperatures and open flame.

INCOMPATIBILITY (materials to avoid): Strong oxidizing agents.

HAZARDOUS COMBUSTION OR DECOMPOSITION PRODUCTS: Carbon dioxide, water vapor. May produce oxides of sulphur, nitrogen and phosphorus. Incomplete combustion can produce carbon monoxide.

HAZARDOUS POLYMERIZATION: Will not occur.

CONDITIONS TO AVOID: None known

VII. SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED: Clean up spills as soon as possible. Absorb large spills with commercially available absorbent materials, such as absorbent clay.

WASTE DISPOSAL METHOD: Place contaminated material in disposable containers and bury in an approved landfill site per local, state and federal regulations.

VIII. PERSONAL PROTECTION INFORMATION

RESPIRATORY PROTECTION (specify type): Not applicable for intended use. However, if unusual operating conditions create mist concentrations in excess of the TLV, an approved respirator is recommended.

VENTILATION: None needed for intended use. Special ventilation is necessary only if unusual operating conditions create mist concentrations in excess of the TLV.

PROTECTIVE GLOVES: Impervious protective gloves can minimize skin exposures where prolonged or repeated exposures can occur.
EYE PROTECTION: Although none normally necessary for intended use, safety glasses or a face shield can reduce the possibility of accidental eye contact.
OTHER PROTECTIVE EQUIPMENT: None normally necessary for intended use.

IX. SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE: Do not store near high heat or open flames.

PRECAUTIONS DURING USE: Avoid prolonged or frequently repeated skin contact with this material. Skin contact can be minimized by wearing impervious protective gloves. As with all products of this nature, good personal hygiene is essential. Hands and other exposed areas should be washed thoroughly with soap and water after contact, especially before eating and/or smoking. Regular laundering of contaminated clothing is essential to reduce indirect skin contact with this material.

X. REGULATORY INFORMATION

OSHA: Not hazardous under 1910.1200 The Hazard Communication Standard.

SARA Title III: Not Reportable under SARA Title III.

N.J. Right To Know: REPORTABLE CONTENTS: Petroleum Oil (Hydraulic/Transmission Oil)
800967-5469 P*
800967-5473 P*

*N.J. Trade Secret Registry No.

HAZARD IDENTIFICATION

NOTES

Approved by D. W. Cralley - Manager Safety & Health

Lubrication

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Material Safety Data Sheet

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

[redacted]

PRODUCT NUMBER(S): CPS222314

COMPANY IDENTIFICATION **EMERGENCY TELEPHONE NUMBERS**

Texaco Lubricants Company
6001 Bollinger Canyon Road, T3325/B10
San Ramon, CA 94583

HEALTH (24 hr): (800)231-0623 or
(510)231-0623 (International)
TRANSPORTATION (24 hr): CHEMTREC
(800)424-9300 or (703)527-3887
Emergency Information Centers
are located in U.S.A.
Int'l collect calls accepted

PRODUCT INFORMATION: MSDS Request: (800) 414-6737
Environmental, Safety & Health Info: (925) 842-5535
Product Information: (800) 582-3835

2. COMPOSITION/INFORMATION ON INGREDIENTS

100.0 % TEXACO 904 Grease

CONTAINING

COMPONENTS	AMOUNT	LIMIT/QTY	AGENCY/TYPE
LUBRICATING BASE OIL CONTAINING ONE OR MORE OF THE FOLLOWING	75.00 - 81.00%		
HYDROTREATED DIST., HVY NAPHTH Chemical Name: DISTILLATES, HYDROTREATED HEAVY NAPHTHENIC CAS64742525		5 mg/m3 (mist)	ACGIH TWA

10 mg/m3 (mist) ACGIH STEL
5 mg/m3 (mist) OSHA PEL

HYDROTREATED DIST., LT NAPHTH
Chemical Name: DISTILLATES, HYDROTREATED LIGHT NAPHTHENIC

Revision Number: 0 **Revision Date: 01/19/02** **MSDS Number: 009001**

TEXACO 904 Grease Page 2 of 8

CAS64742536 5 mg/m3 (mist) ACGIH TWA
10 mg/m3 (mist) ACGIH STEL
5 mg/m3 (mist) OSHA PEL

THICKENER FOR GREASES
8.00 - 12.00%

GRAPHITE
Chemical Name: GRAPHITE
CAS7782425 11.00 - 13.00% 2 mg/m3 ACGIH TWA
5 mg/m3 OSHA PEL

COMPOSITION COMMENT:
All the components of this material are on the Toxic Substances Control Act Chemical Substances Inventory.

This product fits the ACGIH definition for mineral oil mist. The ACGIH TLV is 5 mg/m3, the OSHA PEL is 5 mg/m3.

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3. HAZARDS IDENTIFICATION

IMMEDIATE HEALTH EFFECTS
EYE:
Not expected to cause prolonged or significant eye irritation.
SKIN:
Contact with the skin is not expected to cause prolonged or significant irritation. Not expected to be harmful to internal organs if absorbed through the skin. High-Pressure Equipment Information: Accidental high-velocity injection under the skin of materials of this type may result in serious injury. Seek medical attention at once should an accident like this occur. The initial wound at the injection site may not appear to be serious at first; but, if left untreated, could result in disfigurement or amputation of the affected part.
INGESTION:
If swallowed, this substance is considered practically non-toxic to internal organs.
INHALATION:

Contains a petroleum-based mineral oil. May cause respiratory irritation or other pulmonary effects following prolonged or repeated inhalation of oil mist at airborne levels above the recommended mineral oil mist exposure limit.

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4. FIRST AID MEASURES

EYE:
No specific first aid measures are required because this material is not expected to cause eye irritation. As a precaution remove contact lenses, if worn, and flush eyes with water.
SKIN:

No specific first aid measures are required because this material is not expected to be harmful if it contacts the skin. As a precaution, remove clothing and shoes if contaminated. Use a waterless hand cleaner, mineral oil, or petroleum jelly to remove the material. Then wash skin with soap and water. Wash or clean contaminated clothing and shoes before reuse.
INGESTION:
No specific first aid measures are required because this material is not expected to be harmful if swallowed. Do not induce vomiting. As a precaution, give the person a glass of water or milk to drink and get medical advice. Never give anything by mouth to an unconscious person.
INHALATION:
If exposed to excessive levels of material in the air, move the exposed person to fresh air. Get medical attention if coughing or respiratory discomfort occurs.
NOTE TO PHYSICIANS:
In an accident involving high-pressure equipment, this product may be injected under the skin. Such an accident may result in a small, sometimes bloodless, puncture wound. However, because of its driving force, material injected into a fingertip can be deposited into the palm of the hand. Within 24 hours, there is usually a great deal of swelling, discoloration, and intense throbbing pain. Immediate treatment at a surgical emergency center is recommended.

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5. FIRE FIGHTING MEASURES

FIRE CLASSIFICATION:
Classification (29 CFR 1910.1200): Not classified by OSHA as flammable or combustible.
FLAMMABLE PROPERTIES:
FLASH POINT: COC 325F (162C)
AUTOIGNITION: NDA

FLAMMABILITY LIMITS (% by volume in air): Lower: NA Upper: NA
EXTINGUISHING MEDIA:
CO2, Dry Chemical, Foam, Water Fog
NFPA RATINGS: Health 0; Flammability 1; Reactivity 0.
FIRE FIGHTING INSTRUCTIONS:
This material will burn although it is not easily ignited. For fires involving this material, do not enter any enclosed or confined fire space without proper protective equipment, including self-contained breathing apparatus.
COMBUSTION PRODUCTS:
Normal combustion forms carbon dioxide and water vapor and may produce oxides of calcium. Incomplete combustion can produce carbon monoxide.

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6. ACCIDENTAL RELEASE MEASURES

CHEMTREC EMERGENCY NUMBER (24 hr): (800)424-9300 or (703)527-3887
International Collect Calls Accepted
ACCIDENTAL RELEASE MEASURES:
Clean up spills immediately, observing precautions in Exposure Controls/ Personal Protection section.

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7. HANDLING AND STORAGE

Container is not designed to contain pressure. Do not use pressure to empty container or it may rupture with explosive force. Empty containers retain product residue (solid, liquid, and/or vapor) and can be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, static electricity, or other sources of ignition. They may explode and cause injury or death. Empty containers should be completely drained, properly closed, and promptly returned to a drum reconditioner, or properly disposed of. Avoid contaminating soil or releasing this material into sewage and drainage systems and bodies of water.

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8. EXPOSURE CONTROLS/PERSONAL PROTECTION

GENERAL CONSIDERATIONS:
Consider the potential hazards of this material (see Section 3), applicable exposure limits, job activities, and other substances in the work place when designing engineering controls and selecting personal protective equipment. If engineering controls or work practices are not

adequate to prevent exposure to harmful levels of this material, the personal protective equipment listed below is recommended. The user should read and understand all instructions and limitations supplied with the equipment since protection is usually provided for a limited time or under certain circumstances.

ENGINEERING CONTROLS
Use in a well-ventilated area. If user operations generate an oil mist, use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below the recommended mineral oil mist exposure limits.

PERSONAL PROTECTIVE EQUIPMENT
EYE/FACE PROTECTION:
No special eye protection is normally required.
SKIN PROTECTION:
No special protective clothing is normally required. Where splashing is possible, select protective clothing depending on operations conducted, physical requirements and other substances. Suggested materials for protective gloves include: <Nitrile> <Silver Shield> <Viton>
RESPIRATORY PROTECTION:
No respiratory protection is normally required. If user operations generate an oil mist, determine if airborne concentrations are below the recommended mineral oil mist exposure limits. If not wear a NIOSH approved respirator that provides adequate protection from measured concentrations of this material. Use the following elements for air-purifying respirators: particulate.

---

9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL DESCRIPTION:
Grey grease.
pH: NA
VAPOR PRESSURE: NA
VAPOR DENSITY
(AIR=1): Heavier than air.
BOILING POINT: >700F (>371C)
MELTING POINT: 200F
SOLUBILITY: Soluble in hydrocarbon solvents; insoluble in water.
SPECIFIC GRAVITY: 0.89 at 16C
VISCOSITY: NDA

---

10. STABILITY AND REACTIVITY

HAZARDOUS DECOMPOSITION PRODUCTS:
None known.
CHEMICAL STABILITY:
Stable.
CONDITIONS TO AVOID:
No data available.
INCOMPATIBILITY WITH OTHER MATERIALS:
May react with strong oxidizing agents, such as chlorates, nitrates, peroxides, etc.
HAZARDOUS POLYMERIZATION:
Polymerization will not occur.

11. TOXICOLOGICAL INFORMATION

EYE EFFECTS:
The eye irritation hazard is based on data for a similar material.
SKIN EFFECTS:
The skin irritation hazard is based on data for a similar material.
ACUTE ORAL EFFECTS:
The acute oral toxicity is based on data for a similar material.
ACUTE INHALATION EFFECTS:
The acute respiratory toxicity is based on data for a similar material.
ADDITIONAL TOXICOLOGY INFORMATION:
This product contains petroleum base oils which may be refined by various processes including severe solvent extraction, severe hydrocracking, or severe hydrotreating. None of the oils requires a cancer warning under the OSHA Hazard Communication Standard (29 CFR 1910.1200). These oils have not been listed in the National Toxicology Program (NTP) Annual Report nor have they been classified by the International Agency for Research on Cancer (IARC) as; carcinogenic to humans (Group 1), probably carcinogenic to humans (Group 2A), or possibly carcinogenic to humans (Group 2B).

12. ECOLOGICAL INFORMATION

ECOTOXICITY:
The toxicity of this material to aquatic organisms has not been evaluated. Consequently, this material should be kept out of sewage and drainage

systems and all bodies of water.
ENVIRONMENTAL FATE:
This material is not expected to be readily biodegradable.

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13. DISPOSAL CONSIDERATIONS

Oil collection services are available for used oil recycling or disposal. Place contaminated materials in containers and dispose of in a manner consistent with applicable regulations. Contact your sales representative or local environmental or health authorities for approved disposal or recycling methods.

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14. TRANSPORT INFORMATION

The description shown may not apply to all shipping situations. Consult 49CFR, or appropriate Dangerous Goods Regulations, for additional description requirements (e.g., technical name) and mode-specific or quantity-specific shipping requirements.

DOT SHIPPING NAME: NONE
DOT HAZARD CLASS: NONE
DOT IDENTIFICATION NUMBER: NONE
DOT PACKING GROUP: N/A
ADDITIONAL INFO: Petroleum Lubricating Grease - Not hazardous by US DOT.
ADR/RID Hazard Class - Not applicable

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15. REGULATORY INFORMATION

SARA 311 CATEGORIES:
1. Immediate (Acute) Health Effects: NO
2. Delayed (Chronic) Health Effects: NO
3. Fire Hazard: NO
4. Sudden Release of Pressure Hazard: NO
5. Reactivity Hazard: NO

REGULATORY LISTS SEARCHED:

01=SARA 313	11=NJ RTK	22=TSCA Sect 5(a)(2)
02=MASS RTK	12=CERCLA 302.4	23=TSCA Sect 6
03=NTP Carcinogen	13=MN RTK	24=TSCA Sect 12(b)
04=CA Prop 65-Carcin	14=ACGIH TWA	25=TSCA Sect 8(a)

05=CA Prop 65-Repro Tox 15=ACGIH STEL 26=TSCA Sect 8(d)

06=IARC Group 1 16=ACGIH Calc TLV 27=TSCA Sect 4(a)
07=IARC Group 2A 17=OSHA PEL 28=Canadian WHMIS
08=IARC Group 2B 18=DOT Marine Pollutant 29=OSHA CEILING
09=SARA 302/304 19=Chevron TWA 30=Chevron STEL
10=PA RTK 20=EPA Carcinogen 31=OSHA STEL

The following components of this material are found on the regulatory lists indicated.

DISTILLATES, HYDROTREATED HEAVY NAPHTHENIC
is found on lists: 14,15,17,
DISTILLATES, HYDROTREATED LIGHT NAPHTHENIC
is found on lists: 02,14,15,17,
GRAPHITE
is found on lists: 02,10,11,13,14,17,

NEW JERSEY RTK CLASSIFICATION:
Under the New Jersey Right-to-Know Act L. 1983 Chapter 315 N.J.S.A. 34:5A-1 et. seq., the product is to be identified as follows:
Petroleum Oil (Grease)
WHMIS CLASSIFICATION:
This product is not considered a controlled product according to the criteria of the Canadian Controlled Products Regulations.

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16. OTHER INFORMATION

NFPA RATINGS: Health 0; Flammability 1; Reactivity 0;
HMIS RATINGS: Health 1; Flammability 1; Reactivity 0;
(0-Least, 1-Slight, 2-Moderate, 3-High, 4-Extreme, PPE:- Personal Protection Equipment Index recommendation, *- Chronic Effect Indicator). These values are obtained using the guidelines or published evaluations prepared by the National Fire Protection Association (NFPA) or the National Paint and Coating Association (for HMIS ratings).

REVISION STATEMENT:
This is a new Material Safety Data Sheet.

ABBREVIATIONS THAT MAY HAVE BEEN USED IN THIS DOCUMENT:
TLV - Threshold Limit Value TWA - Time Weighted Average
STEL - Short-term Exposure Limit TPQ - Threshold Planning Quantity
RQ - Reportable Quantity PEL - Permissible Exposure Limit
C - Ceiling Limit CAS - Chemical Abstract Service Number
A1-5 - Appendix A Categories () - Change Has Been Proposed
NDA - No Data Available NA - Not Applicable

Prepared according to the OSHA Hazard Communication Standard (29 CFR 1910.1200) and the ANSI MSDS Standard (Z400.1) by the Toxicology and Health Risk Assessment Unit, CRTC, P.O. Box 1627, Richmond, CA 94804

****

The above information is based on the data of which we are aware and is believed to be correct as of the date hereof. Since this information may be applied under conditions beyond our control and with which we may be unfamiliar and since data made available subsequent to the date hereof may suggest modification of the information, we do not assume any responsibility for the results of its use. This information is furnished upon condition that the person receiving it shall make his own determination of the suitability of the material for his particular purpose.

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THIS IS THE LAST PAGE OF THIS MSDS

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02-11-'05 07:40 FROM-ALL POWER MFG. 562-921-9933 T-386 P01/01 U-881

Lubricant

Mater Safety Data Sheet

May be used to comply with OSHA's Hazard Communication Standard, 29 CFR 1910.1200. Standard must be consulted for specific requirements

IDENTITY [redacted]

SECTION 1

Manufacturer's Name [redacted] ALL POWER MFG CO	Emergency Telephone Number (562) 802-2640
Address 13141 MOLETTE STREET SANTA FE SPRINGS CA 90670	Emergency Number for Information (562) 802-2640
	Date Prepared: July 1, 2004

SECTION II - Hazardous Ingredients/Identity Information

NO HAZARDOUS INGREDIENTS
AS DEFINED IN OSHA 29 CFR 1910, 1000 (SUBPART Z) OR CALIFORNIA HAZARDOUS SUBSTANCES LIST

SECTION III - Physical/Chemical Characteristics

BOILING POINT	212° F	SPECIFIC GRAVITY (H2O=1)	1.104
VAPOR PRESSURE (mm Hg.)	NA	MELTING POINT	NA
VAPOR DENSITY (Air=1)	>1	EVAPORATION RATE (BUTYL ACETATE=1)	NA
SOLUBILITY IN WATER	100%		

APPEARANCE AND ODOR
GREEN LIQUID, MILD PLEASANT ODOR

SECTION IV - Fire and Explosion Hazard Data

Flash Point (Method Used)	Flammable Limits	LEL	UEL
NA SELF-EXTINGUISHING	NA	NA	NA

Extinguishing Media:
NOT REQUIRED. NO FIRE HAZARD

Special Fire Fighting Procedures:
NONE

Unusual Fire and Explosion Hazards:
NONE

SECTION V - Reactivity Data

Stability			Conditions to Avoid
	Unstable		
	Stable	X	NONE

Incompatibility (Materials to Avoid)
STRONG OXIDIZING AGENTS

Hazardous Decomposition or Byproducts

Hazardous Polmerization			Conditions to Avoid
	May Occur		NONE
	Will Not Occur	X	NONE

SECTION VI - Health Hazard Data

Routes of Entry	Inhalation?	Skin?	Ingestion?
	YES	NO	NO

Health Hazards? (Acute and Chronic)
INHALATION: NONE DETERMINED. SKIN: NOT AN IRRITANT.
EYES: NOT AN IRRITANT. INGESTION: NOT TOXIC

Carcinogenicity?	NTP?	IARC Monographs?	OSHA Regulated?
	NO	NO	NO

Signs and Symptoms of Exposure NONE DETERMINED

Medical Conditions Generally Aggravated by Exposure
NONE DETERMINED

Emergency and First Aid Procedures
INHALATION: REMOVE TO FRESH AIR.
SKIN: WASH WITH SOAP AND WATER. EYES: FLUSH WITH WATER FOR AT LEAST 15 MIN. CONSULT A PHYSICIAN.
INGESTION: DO NOT INDUCE VOMITTING; CONSULT A PHYSICIAN

SECTION VII - Precautions for Safe Handling and Use

Steps to be Taken in Case Material is Released or Spilled
DAMP MOP AND FLUSH WITH WATER

Waste Disposal Method
UNCONTAMINATED PRODUCT IS BIODEGRADABLE. DISPOSE OF IN ACCORDANCE WITH APPLICABLE GOVERNMENT REGULATIONS

Precautions to Be Taken in Handling and Storing
AVOID PROLONGED CONTACT WITH UNDILUTED LIQUID

Other Precautions
DO NOT ADD NITRITES DUE TO POSSIBLE FORMATION OF NITROSAMINES

SECTION VIII - Control Measures

Respiratory Protection (Specify Type)
NONE REQUIRED UNDER NORMAL CONDITIONS OF USE

Ventilation	Local Exhaust	Special
	NO	NA
	Mechanical (General)	Other
	NO	NORMAL VENTILATION

Protective Gloves:	Eye Protection: SAFETY GOGGLES SUGGESTED WITH SIDE SHIELDS

Other Required Equipment: NOT REQUIRED

Work/Hygenic Practices:
KEEP TANK FREE OF BACTERIA GROWTH AND CONTAMINATION

CARG003927

Lubricant

ZEP Manufacturing Company
Acuity Specialty Products Group, Inc.
P.O. Box 2015
Atlanta, GA 30301
1-877-I-BUY-ZEP

Material Safety Data Sheet
and Safe Handling and Disposal Information

Section 1. Chemical Product and Company Identification

Product name ZEP REDI-GREASE
Product Use Aerosol Grease
Product Code 0115
Date of issue 02/13/04 Supersedes 01/21/04

Emergency Telephone Numbers

For MSDS Information:
Acuity Specialty Products Group, Inc.
Compliance Services 1-877-I-BUY-ZEP

For Medical Emergency:
INFOTRAC
(877) 541-2016 Toll Free - All Calls Recorded

For a Transportation Emergency:
CHEMTREC
(800) 424-9300 - All Calls Recorded
In the District of Columbia (202) 483-7616

Printing date: 03/15/04

Prepared by Compliance Services Group
Acuity Specialty Products Group
1420 Seaboard Industrial Blvd.
Atlanta, GA 30318

Section 2. Composition, Information on Ingredients

Name of Hazardous Ingredients	CAS #	% by Weight	Exposure Limits
HEXANE; n-hexane	110-54-3	30-40	**OSHA PEL (United States).** TWA: 500 ppm 8 hour(s). **ACGIH TLV (United States).** TWA: 50 ppm 8 hour(s). **Supplier Suggested PEL (United States).** TWA: 50 ppm 8 hour(s).
BLEND OF ISOBUTANE, PROPANE, & n-BUTANE	75-28-5; 74-98-6; 106-97-8	20-30	**ACGIH TLV (United States).** TWA: 800 ppm 8 hour(s). **OSHA PEL (United States).** TWA: 1000 ppm 8 hour(s).
TIRCRESYL PHOSPHATE	1330-78-5	<5	Not established

Section 3. Hazards Identification

HMIS

Health	2
Fire Hazard	4
Reactivity	0
Personal Protection	B, X

Acute Effects **Routes of Entry** Dermal contact. Inhalation.

Skin Hazardous in case of skin contact (irritant, permeator). Skin inflammation is characterized by itching, scaling, reddening, or, occasionally, blistering. Can cause central nervous system depression. Defatting properties, may aggravate an existing dermatitis.

Eyes Hazardous in case of eye contact (irritant). Inflammation of the eye is characterized by redness, watering, and itching.

Inhalation Hazardous in case of inhalation (lung irritant). Over-exposure by inhalation may cause respiratory irritation. Can cause central nervous system depression. Symptoms and signs include headaches, dizziness, fatigue, muscular weakness, drowsiness and, in extreme cases, loss of consciousness. Medical Conditions Aggravated by Overexposure: Respiratory

Ingestion Aspiration hazard if swallowed- can enter lungs and cause damage. Vomiting increases risk of chemical pneumonia.

Carcinogenic Effects Ingredients: Not listed as carcinogen by OSHA, NTP or IARC.

Chronic Effects Prolonged skin contact may cause dermatitis with drying and cracking of skin. Inhalation of spray mists or vapors may cause central nervous system depression characterized by headache, dizziness, nausea, stupor, weakness and/or numbness and tingling in the extremities (medical term - peripheral neuropathy). The likelihood of the effect depends on duration and level of exposure to vapors. Use only with adequate ventilation. Keep vapors below recommended exposure limits. DO NOT breathe vapors or spray mist. DO NOT swallow this product. Repeated or prolonged exposure to the substance can produce damage to kidneys, liver, and lungs. See Section 8 for additional information.

See Toxicological Information (section 11)

CARG003928

Section 4. First Aid Measures

Eye Contact In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention.

Skin Contact Wash affected area with soap or mild detergent and water. Cover the irritated skin with an emollient. Remove contaminated clothing and shoes. Get medical attention if irritation develops.

Inhalation If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Ingestion Aspiration hazard if swallowed- can enter lungs and cause damage. Do NOT induce vomiting unless directed to do so by medical personnel. If vomiting occurs, keep head lower than hips to help prevent aspiration. Never give anything by mouth to an unconscious person. Get medical attention immediately.

Section 5. Fire Fighting Measures

Flash Point Closed cup: <-18°C (<0°F) (Tagliabue.) **Flammable Limits** LOWER: 1.2% UPPER: 11.6%

Flammability Extremely flammable. (CSMA)

Fire Hazard Vapor may cause fire. Vapors may accumulate in low or confined areas, travel considerable distance to source of ignition and flash back.

Fire-Fighting Procedures Dry chemical, carbon dioxide, foam. Wear special protective clothing and positive pressure, self-contained breathing apparatus.

Section 6. Accidental Release Measures

Spill Clean up Large spills are unlikely due to packaging.

Section 7. Handling and Storage

Handling Store and use away from heat, sparks, open flame, or any other ignition source. Avoid contact with eyes, skin and clothing. Avoid breathing vapors or spray mists. Use only with adequate ventilation. Watch for accumulation in low confined areas. Wash thoroughly after handling. Wash contaminated clothing before reusing.

Storage Store and use away from heat, sparks, open flame, or any other ignition source. Keep away from heat and direct sunlight. Keep container in a cool, well-ventilated area. Do not store above 49°C (120.2°F). Do not puncture or incinerate. Keep out of the reach of children.

Section 8. Exposure Controls, Personal Protection

Personal Protection

Eyes Safety glasses with side shields.

Body Chemical resistant gloves. (Viton, Neoprene, Nitrile)

Protective Clothing (Pictograms)

Respiratory Use with adequate ventilation. Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective threshold limit value. Wear appropriate respirator when ventilation is inadequate. Approved/certified respirator with organic vapor cartridges.

Section 9. Physical and Chemical Properties

Physical State Liquid. (Aerosol.)

pH Not applicable.

Boiling Point 66.111°C (151°F)

Specific Gravity 0.804 (Water = 1)

Solubility Insoluble in cold water, hot water.

Color Clear.

Odor Solvent-like.

Vapor Pressure Not determined.

Vapor Density Not determined.

Evaporation Rate >1 compared to Butyl acetate.

VOC (Consumer) 49.9%

Section 10. Stability and Reactivity

Stability and Reactivity The product is stable.

Incompatibility Avoid contact with strong oxidizers, excessive heat, sparks or open flame.

Hazardous Polymerization Will not occur.

Hazardous Decomposition Products Carbon Dioxide, Carbon Monoxide and Other organic materials.

Section 11. Toxicological Information

Toxicity to Animals No specific data.

Section 12. Ecological Information

Ecotoxicity Not available.

Biodegradable/OECD Not available.

CARG003929

Section 13. Disposal Considerations

Waste Information Waste must be disposed of in accordance with federal, state and local environmental control regulations.

Waste Stream Code: D001
Classification: - (Hazardous waste.)
Origin: - (RCRA waste.)

Consult your local or regional authorities.

Section 14. Transport Information

Proper shipping name Consumer Commodity

DOT Classification ORM-D

UN number Not regulated.

Section 15. Regulatory Information

U.S. Federal Regulations SARA 313 toxic chemical notification and release reporting:
Hexane
Clean Water Act (CWA) 311: No products were found.
Clean air act (CAA) 112 regulated toxic substances: Hexane

Section 16. Other Information

To the best of our knowledge, the information contained herein is accurate. However, neither the above named supplier nor any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein.
Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

Lubricant

ZEP Manufacturing Company
Acuity Specialty Products Group, Inc.
P.O. Box 2015
Atlanta, GA 30301
1-877-I-BUY-ZEP (428-9937)
www.zep.com

Material Safety Data Sheet
and Safe Handling and Disposal Information

Section 1. Chemical Product and Company Identification

Product name ZEP SUPER PENETRANT 1
Product Use Aerosol Penetrant Spray
Product Code 0250
Date of issue 12/20/04 Supersedes 09/23/02

Emergency Telephone Numbers

For MSDS Information:
Acuity Specialy Products Group, Inc.
Compliance Services 1-877-I-BUY-ZEP

For Medical Emergency:
INFOTRAC
(877) 541-2016 Toll Free - All Calls Recorded

For a Transportation Emergency:
CHEMTREC
(800) 424-9300 - All Calls Recorded
In the District of Columbia (202) 483-7616

Printing date: 12/20/04

Prepared by Compliance Services Group
Acuity Specialty Products Group
1420 Seaboard Industrial Blvd.
Atlanta, GA 30318

Section 2. Composition, Information on Ingredients

Name of Hazardous Ingredients	CAS #	% by Weight	Exposure Limits
ALIPHATIC NAPHTHA; ligroin; stoddard solvent	8052-41-3	20 - 30	**OSHA PEL (United States).** TWA: 100 ppm 8 hour(s). **ACGIH TLV (United States).** TWA: 100 ppm 8 hour(s).
MINERAL SEAL OIL; mineral oil; petrolatum	64741-77-1	5 - 15	**OSHA PEL (United States).** : 5 mg/m^3 8 hour(s). Form: Mist **ACGIH TLV (United States).** : 5 ppm 8 hour(s). Form: Mist
TERPENE HYDROCARBON PROCESSING BY-PRODUCT	68956-56-9	<10	Not established
1,2,4-TRIMETHYLBENZENE	95-63-6	<5	**ACGIH TLV (United States).** TWA: 25 ppm 8 hour(s). **OSHA PEL (United States).** TWA: 25 ppm 8 hour(s).
BLEND OF ISOBUTANE & PROPANE	74-98-6; 75-28-5	5 - 15	**ACGIH TLV (United States).** TWA: 800 ppm 8 hour(s). **OSHA PEL (United States).** TWA: 1000 ppm 8 hour(s).

Section 3. Hazards Identification

HMIS

Health	2
Flammability	4
Reactivity	0
Personal Protection	B

Acute Effects **Routes of Entry** Absorbed through skin. Inhalation.

Skin Hazardous in case of skin contact (irritant). Skin inflammation is characterized by itching, scaling, reddening, or, occasionally, blistering. May be harmful if absorbed through skin.

Eyes Hazardous in case of eye contact (irritant). Inflammation of the eye is characterized by redness, watering, and itching. May cause corneal opacity or blurred vision.

Inhalation Harmful by inhalation. Irritating to mouth and throat Can cause central nervous system depression (dizziness, lighheadedness, headache, nausea, and blurred vision.) Medical Conditions Aggravated by Overexposure: Respiratory, Heart (Cardiac).

Ingestion Aspiration hazard if swallowed- can enter lungs and cause damage.

NOTE: MSDS data pertains to the product as delivered in the original shipping container(s). Risk of adverse health effects are lessened by following all prescribed safety precautions, including use of proper personal protective equipment.

Carcinogenic Effects Ingredients: Not listed as carcinogen by OSHA, NTP or IARC.

Chronic Effects The substance may be toxic to blood, kidneys, lungs, the reproductive system, liver, mucous membranes, brain, skin, eyes, central nervous system (CNS), ears, testes. Repeated or prolonged exposure to the substance can produce target organs damage. Prolonged skin contact may cause dermatitis with drying and cracking of skin.

See Toxicological Information (section 11)

CARG003931

Section 4. First Aid Measures

Eye Contact In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention.

Skin Contact Wash affected area with soap or mild detergent and water. Remove contaminated clothing and shoes. Get medical attention if irritation develops.

Inhalation If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Ingestion Aspiration hazard if swallowed- can enter lungs and cause damage. Do NOT induce vomiting unless directed to do so by medical personnel. If vomiting occurs, keep head lower than hips to help prevent aspiration. Never give anything by mouth to an unconscious person. Get medical attention immediately.

Section 5. Fire Fighting Measures

Flash Point Closed cup: 41.6°C (107°F). **Flammable Limits** Not available.

Flammability Extremely flammable. (CSMA) Aerosol that may flashback.

Fire Hazard Flammable liquid and vapor. Vapor may cause fire. Vapors may accumulate in low or confined areas, travel considerable distance to source of ignition and flash back.

Fire-Fighting Procedures Dry chemical, carbon dioxide, foam. Cool closed containers exposed to fire with water. Wear special protective clothing and positive pressure, self-contained breathing apparatus.

Section 6. Accidental Release Measures

Spill Clean up Large spills are unlikely due to packaging.

Section 7. Handling and Storage

Handling Store and use away from heat, sparks, open flame, or any other ignition source. Avoid contact with eyes, skin and clothing. Avoid breathing vapors or spray mists. Use only with adequate ventilation. Watch for accumulation in low confined areas. Wash contaminated clothing before reusing.

Storage Store and use away from heat, sparks, open flame, or any other ignition source. Keep away from heat and direct sunlight. Keep container in a cool, well-ventilated area. Do not store above 49°C (120.2°F). Do not puncture or incinerate. Keep out of the reach of children.

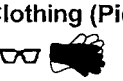
Section 8. Exposure Controls, Personal Protection

Personal Protection

Eyes Safety glasses.

Body Chemical resistant gloves. (neoprene, nitrile)

Protective Clothing (Pictograms)



Respiratory Use with adequate ventilation. Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective threshold limit value. Wear appropriate respirator when ventilation is inadequate.

Section 9. Physical and Chemical Properties

Physical State Thin liquid - Aerosol.

pH Not applicable.

Boiling Point 151.67°C (305°F)

Specific Gravity 0.8 (Water = 1)

Solubility Insoluble in cold water, hot water.

Color Clear.

Odor Solvent-like.

Vapor Pressure Not determined.

Vapor Density Not determined.

Evaporation Rate Not determined.

VOC (Consumer) 49.9% 3.3 (lbs/gal) 398 (g/l).

Section 10. Stability and Reactivity

Stability and Reactivity The product is stable.

Incompatibility Avoid contact with strong oxidizers, excessive heat, sparks or open flame.

Hazardous Polymerization Will not occur.

Hazardous Decomposition Products Carbon Dioxide, Carbon Monoxide and other organic materials..

Section 11. Toxicological Information

Toxicity to Animals No specific data.

Section 12. Ecological Information

Ecotoxicity Not available.

Biodegradable/OECD Not available.

CARG003932

Section 13. Disposal Considerations

Waste Information Waste must be disposed of in accordance with federal, state and local environmental control regulations.

Waste Stream Code: D001
Classification: - (Hazardous waste.)
Origin: - (RCRA waste.)

Consult your local or regional authorities.

Section 14. Transport Information

Proper shipping name Consumer Commodity

DOT Classification ORM-D

UN number Not regulated.

NOTE: DOT classification applies to most package sizes. For specific container size classifications or for size exceptions, refer to the Bill of Lading with your shipment.

Section 15. Regulatory Information

U.S. Federal Regulations SARA 313 toxic chemical notification and release reporting:
1,2,4-Trimethylbenzene
Clean Water Act (CWA) 311: No products were found.
Clean air act (CAA) 112 regulated toxic substances: No products were found.
All Components of this product are listed or exempt from listing on TSCA inventory.

Section 16. Other Information

To the best of our knowledge, the information contained herein is accurate. However, neither the above named supplier nor any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein.
Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

Lubricant

MSDS - Material Safety Data Sheet

Product Name: ENVIRONMENTALLY SILICONE SPRAY LUBRICANT

MSDS No.: AM914

I. Basic Information:

Manufacturer: RADIATOR SPECIALTY COMPANY

Address: P.O. BOX 159, 600 RADIATOR ROAD

City, ST Zip: INDIAN TRAIL, NC 28079

Emergency Contact: Rocky Mountain Poision Control Center

Emergency Telephone Number: 303-623-5716

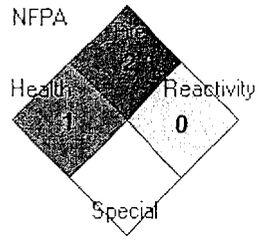
Contact: Robert Geer

Information Telephone Number: 704-688-3430

Last Update: 04/08/2004

Chemical State: [X] Liquid [ ] Gas [ ] Solid

Chemical Type: [ ] Pure [X] Mixture



1	Health
2	Flammability
0	Reactivity
C	Pers. Protection

II. Ingredients:

[ ] Trade Secret

CAS No.	Chemical Name	% Range	EHS	NTP	IARC	SUB Z	SARA 313	OSHA PEL	ACGIH TLV	Other Limits
64742887	Aliphatic Solvent Naphtha	15.0 - 40.0						2000 mg/m	N/E	
106978	Butane	10.0 - 30.0						N/E	800 ppm	
63148629	Dimethyl Polysiloxane	1.0 - 5.0						N/E	N/E	
74986	Propane	1.0 - 5.0						N/E	1000 ppm	

III. Hazardous Identification:

Hazard Category:

[X] Acute [ ] Chronic [ ] Fire [X] Pressure [ ] Reactive

Hazardous Identification Information:

Danger: Harmful or Fatal if Swallowed. Eye and Skin Irritant. Contents Under Pressure.

Level 1 Aerosol

IV. First Aid Measures:

Route(s) of Entry:

Absorption, Eye, Inhalation, and Ingestion.

Health Hazards (Acute and Chronic):

See signs and symptoms below

Signs and Symptoms:

Eye Contact: Direct spray of vapors may be irritating or harmful to eyes.
Skin Contact: Product may cause irritation due to defatting of skin.
Inhalation: High concentration of vapors may irritate nose and throat and cause headaches and nausea.
Ingestion: Can cause irritation, gastric disturbances, and nausea..

Medical Conditions Generally Aggravated by Exposure:

MSDS - Material Safety Data Sheet
Product Name: ENVIRONMENTALLY SILICONE SPRAY LUBRICANT

MSDS No.: AM914

None Known

Emergency and First Aid Procedures:

Eye Contact: Flush eyes with water for 15 minutes while lifting upper and lower eyelid. Get prompt medical attention.
Skin Contact: Wash with soap and water. If irritation persists, get prompt medical attention.
Inhalation: Move to fresh air. If breathing becomes difficult, get prompt medical attention.
Ingestion: DO NOT INDUCE VOMITING!. Call Poison Control Center, physician, or hospital emergency room immediately.

Other Health Warnings:

None Known

V. Fire Fighting Measures:

Flash Point: None **Lower Explosive Limit:** N/A **Upper Explosive Limit:** N/A

F.P. Method:

Fire Extinguishing Media: Water Fog, Foam, Carbon Dioxide, Dry Chemical

Special Fire Fighting Procedures:

Wear self-contained positive pressure breathing apparatus and protective clothes. Cool containers with a water fog. Do not use forced water stream as this could cause the fire to spread. Use shield to protect from rupturing and venting containers.

Unusual Fire and Explosion:

Contents under pressure. Exposure to temperatures above 120° may cause containers to vent, rupture or burst violently.

VI. Accidental Release Measures:

Steps to be Taken in Case Material is Released or Spilled:

Use appropiate protective equipment. Contain spill and then absorb spill with inert material or rags and scoop into a chemical waste container. All clean-up material should be removed and placed in approved containers for disposal. Rinse water may be disposed of down a sanitary sewer system if authorized by the local municipality.

VII. Handling and Storage:

Precautions to be Taken:

Use with adequate ventilation. Do not take internally. Do not expose to heat or store at temperatures above 120 F. Do no puncture or incinerate container.

Other Precautions:

VIII. Exposure Controls/Personal Protection:

Ventilation Requirements:

See Section 2 for applicable exposure limits. Use with adequate ventilation. If TLV is exceeded, wear NIOSH approved respirator.

Personal Protective Equipment:

For prolonged exposure to the material, wear safety glasses, gloves, and apron. If exposed to vapor mist, wear approved respirator designed to remove particles of chemicals from the vapor mist.

MSDS - Material Safety Data Sheet
Product Name: ENVIRONMENTALLY SILICONE SPRAY LUBRICANT

MSDS No.: AM914

IX. Physical and Chemical Properties:

Boiling Point: 212°F

Melting Point: N/A

Evaporation Rate (Butyl Acetate = 1): > 1

Vapor Pressure (mm Hg.): N/D

Specific Gravity (H20 = 1): 1.00000

Vapor Density (AIR = 1): N/D

Solubility In Water: Soluble

Appearance and Odor: White creamy spray with low odor

Other Information: Soluble in alcohols.
VOC Content: 19.5%

X. Stability and Reactivity:

Stability:

Stable

Incompatibility (Materials to Avoid):

High temperatures and strong oxidizers

Decomposition/By Products:

Carbon dioxide, carbon monoxide

Hazardous Polymerization:

Will not occur

XI. Toxicological Information:

N/D

XII. Ecological Information:

N/D

XIII. Disposal Considerations:

DISPOSAL: This container may be recycled in aerosol recycling centers when empty. Before offering for recycling, empty the can by using the product according to the label. DO NOT PUNCTURE! If recycling is not available, wrap the container and discard in the trash. Dispose of unused product in accordance with all local, state government and federal laws and regulations.

XIV. Transport Information:

DOT Hazard Class: ORM-D
Shipping Name: Consumer Commodity

XV. Regulatory Information:

See Section 2 for SARA Reportable Chemicals.

USA TSCA: All components of this material are listed on the US TSCA Inventory.

XVI. Other Information:

MSDS - Material Safety Data Sheet
Product Name: ENVIRONMENTALLY SILICONE SPRAY LUBRICANT

MSDS No.: AM914

Do not used in confined area without proper ventilation. Contact lenses may cause further damage in case of splash into eye. KEEP AWAY FROM CHILDREN AND ANIMALS!

N/E: Not Established
N/D: Not Determined
N/A: Not Applicable
N/AV: Not Available

While Radiator Specialty Company believes this data is accurate as of the revision date, we make no warranty with respect to the data and we expressly disclaim all liability for reliance thereon. The data is offered soley for information, investigation, and verification. Various government agencies may have specific regulations regarding the transportation, handling, storage, use, or disposal of this product which may not be covered by this MSDS. The user is repsonsible for full compliance.

Lubricant

MSDS - Material Safety Data Sheet

Product Name: LIQUID WRENCH SUPER PENETRANT (Aerosol)

MSDS No.: L112

I. Basic Information:

Manufacturer: RADIATOR SPECIALTY COMPANY

Address: P.O. BOX 159, 600 RADIATOR ROAD

City, ST Zip: INDIAN TRAIL, NC 28079

Emergency Contact: Rocky Mountain Poision Control Center

Emergency Telephone Number: 303-623-5716

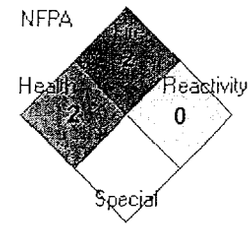
Contact: Robert Geer

Information Telephone Number: 704-688-3430

Last Update: 03/20/2003

Chemical State: [X] Liquid [ ] Gas [ ] Solid

Chemical Type: [ ] Pure [X] Mixture



2	Health
2	Flammability
0	Reactivity
C	Pers. Protection

II. Ingredients:

[ ] Trade Secret

CAS No.	Chemical Name	% Range	EHS	NTP	IARC	SUB Z	SARA 313	OSHA PEL	ACGIH TLV	Other Limits
124389	Carbon dioxide	0-5						N/AV	5000 ppm	
8008206	Kerosene	40-60						N/AV	100 ppm	
64742525	Naphthenic Petroleum Distillate	40-60						5 mg/m3	5 mg/m3	

III. Hazardous Identification:

Hazard Category:

[X] Acute [ ] Chronic [X] Fire [X] Pressure [ ] Reactive

Hazardous Identification Information:

Danger: Flammable. Harmful or fatal if swallowed. Eye and skin irritant. Contents under pressure.

Level 3 Aerosol

IV. First Aid Measures:

Route(s) of Entry:

Absorption, Inhalation, and Ingestion.

Health Hazards (Acute and Chronic):

N/D

Signs and Symptoms:

Eye Contact: Irritant. Prolonged contact may cause conjunctivitis.
Skin Contact: Irritant. Defatting of tissue, dermatitis may occur.
Inhalation: Irritant to mucous membranes. Repeated exposure may cause narcosis, dizziness, respiratory or lung irritation.
Ingestion: HARMFUL OR FATAL IF SWALLOWED. May cause burns to mouth, throat & stomach.

Medical Conditions Generally Aggravated by Exposure:

N/D

Emergency and First Aid Procedures:

MSDS - Material Safety Data Sheet
Product Name: LIQUID WRENCH SUPER PENETRANT (Aerosol)

MSDS No.: L112

Eye Contact: Flush eyes with clean water for 15 minutes while lifting eyelids. Get prompt medical attention.
Skin Contact: Wash with soap and water thoroughly. If adverse effects persist, get prompt medical attention. Launder contaminated clothing before reuse.
Inhalation: Remove to fresh air. If breathing becomes difficult give oxygen and get prompt medical attention. If breathing stops, give artificial respiration and get prompt medical attention.
Ingestion: DO NOT INDUCE VOMITING! Call Poison Control Center, physician, or hospital emergency room immediately. Aspiration of vomitus into the lungs can cause pneumonitis, which can be fatal.

Other Health Warnings:

Vomiting and subsequent aspiration into the lungs may lead to chemical pneumonia and pulmonary edema which is a potentially fatal condition.

V. Fire Fighting Measures:

Flash Point: 132F **Lower Explosive Limit:** 0.7% **Upper Explosive Limit:** 5%

F.P. Method: TCC

Fire Extinguishing Media: Water Fog, Foam, Carbon Dioxide, Dry Chemical

Special Fire Fighting Procedures:

Wear self-contained positive pressure breathing apparatus and protective clothes. Cool containers with a water fog. Do not use forced water stream as this could cause the fire to spread. Use equipment or shielding to protect personnel against venting, rupturing, or bursting containers.

Unusual Fire and Explosion:

Contents under pressure. At elevated temperatures, container may vent, rupture, or burst violently.

VI. Accidental Release Measures:

Steps to be Taken in Case Material is Released or Spilled:

Eliminate all ignition sources. Persons not wearing protective equipment should be excluded from area of spill until clean-up has been completed. Dike or contain spill and absorb with inert materials (sand, sawdust, absorbent sweeping compounds, rags, etc). Place contaminated material into an approved chemical waste container. Where possible, vacuum spilled liquid using an explosion proof vacuum to recover material. Prevent run-off to sewers, streams, or other bodies of water. If run-off occurs, notify proper authorities as required that a spill has occured.

VII. Handling and Storage:

Precautions to be Taken:

Use with adequate ventilation and proper protective equipment.
Do not use or store near fire, sparks, or open flame. Do not puncture or incinerate container. Exposure to sunlight and temperatures above 120° may cause container to vent, rupture, or burst.

Other Precautions:

Do not used in confined area without proper ventilation. Contact lenses may cause further damage in case of splash into eye. KEEP AWAY FROM CHILDREN AND ANIMALS! Danger: Flammable.

VIII. Exposure Controls/Personal Protection:

Ventilation Requirements:

Use with adequate ventilation. If TLV is exceeded, wear NIOSH approved respirator.

Personal Protective Equipment:

See Section 2 for applicable exposure limits. For prolonged exposure wear protective safety glasses, gloves, and apron.

MSDS - Material Safety Data Sheet
Product Name: LIQUID WRENCH SUPER PENETRANT (Aerosol)

MSDS No.: L112

IX. Physical and Chemical Properties:

Boiling Point: 320 F

Melting Point: N/A

Evaporation Rate (Butyl Acetate = 1): N/A

Vapor Pressure (mm Hg.): N/A

Specific Gravity (H20 = 1): 0.85000

Vapor Density (AIR = 1): N/A

Solubility In Water: Insoluble

Appearance and Odor: Dark Liquid with petroleum odor

Other Information: N/E

X. Stability and Reactivity:

Stability:

Product is stable

Incompatibility (Materials to Avoid):

Avoid contact with strong oxidizers

Decomposition/By Products:

Normal products of combustion, smoke, carbon dioxide, carbon monoxide, and sulfur trioxides.

Hazardous Polymerization:

Will not occur

XI. Toxicological Information:

N/D

XII. Ecological Information:

N/D

XIII. Disposal Considerations:

DISPOSAL: This container may be recycled in aerosol recycling centers when empty. Before offering for recycling, empty the can by using the product according to the label. DO NOT PUNCTURE! If recycling is not available, wrap the container and discard in the trash. Dispose of unused product in accordance with all local, state government and federal laws and regulations.

XIV. Transport Information:

DOT Hazard Class: ORM-D
Shipping Name: Consumer Commodity

The DOT description is provided to assist in the proper shipping classification of this product and may not be suitable for all shipping purposes.

XV. Regulatory Information:

See Section 2 for SARA Reportable Chemicals.

USA TSCA: All components of this material are listed on the US TSCA Inventory.

Warning: This product contains a chemical(s) known to the State of California to cause cancer or birth defects or other reproductive harm.

XVI. Other Information:

MSDS - Material Safety Data Sheet
Product Name: LIQUID WRENCH SUPER PENETRANT (Aerosol)

MSDS No.: L112

Do not used in confined area without proper ventilation. Contact lenses may cause further damage in case of splash into eye.
KEEP AWAY FROM CHILDREN AND ANIMALS!

N/E: Not Established
N/D: Not Determined
N/A: Not Applicable
N/AV: Not Available

While Radiator Specialty Company believes this data is accurate as of the revision date, we make no warranty with respect to the data and we expressly disclaim all liability for reliance thereon. The data is offered soley for information, investigation, and verification. Various government agencies may have specific regulations regarding the transportation, handling, storage, use, or disposal of this product which may not be covered by this MSDS. The user is repsonsible for full compliance.

Lubricant

Part: 10011 Line: WD Desc: [redacted] 11OZ

1

WD-40 CO2 AEROSOL (CURRENT) MATERIAL SAFETY DATA SHEET Page 11

1

I. PRODUCT IDENTIFICATION1

Manufacturer: WD-40 Company Telephone:1
Address: Emergency Only: 1 (800) 424-9300 (CHEMTREC)1
1061 Cudahy Place (92110) Information: (619) 275-14001
P.O. Box 80607 Chemical Name: Organic Mixture1
San Diego, California Trade Name: WD-40 Aerosol1
92138-06071

1

II. HAZARDOUS INGREDIENTS1

Chemical Name	CAS Number	%	Exposure Limit1 ACGIH/OSHA1
Aliphatic Petroleum Distillates	8052-41-3	60-70	100 ppm PEL1
Petroleum Base Oil	64742-65-0	15-25	5 mg/M3 TWA (mist)1
Non-hazardous Ingredients		<101	
Carbon Dioxide	124-38-9	2-3	5000 ppm PEL1

1

III. PHYSICAL DATA1

Boiling Point: NA Evaporation Rate: Not determined1
Vapor Density(air= 1):Greater than 1 Vapor Pressure:100 +/- 5 PSI@70deg.F1
Solubility in Water: Insoluble Appearance: Light amber1
Specific Gravity (H2O = 1): .816 @ 70 deg.F Odor: Characteristic odor1
Percent Volatile (weight): 70% 1

1

IV. FIRE AND EXPLOSION1

Flash Point: Tag Open Cup 110 deg. F (minimum)1
Flammable Limits: (Solvent Portion) [Lel] 1.0% [Uel] 6.0%1
Extinguishing Media: CO2, Dry Chemical, Foam1
Special Fire Fighting Procedures: Contents Under Pressure1
Unusual Fire and Explosion Hazards: FLAMMABLE-U.F.C. level 3 AEROSOL1

1

V. HEALTH HAZARD / ROUTE(S) OF ENTRY1

Threshold Limit Value1
Aliphatic Petroleum Distillates (Stoddard solvent) lowest TLV1
(ACGIH 100 ppm.)1
Symptoms of Overexposure1
Inhalation (Breathing): May cause anesthesia, headache, dizziness,1
nausea and upper respiratory irritation.1
Skin Contact: May cause drying of skin and/or irritation.1
Eye Contact: May cause irritation, tearing and redness.1
Ingestion (Swallowed): May cause irritation, nausea,1
vomiting and diarrhea.1
First Aid Emergency Procedures1
Ingestion (Swallowed): Do not induce vomiting, seek medical attention.1
Eye Contact: Immediately flush eyes with large amounts1
of water for 15 minutes.1
Skin Contact: Wash with soap and water.1
Inhalation (Breathing): Remove to fresh air. Give artificial respiration1
if necessary. If breathing is difficult,1
give oxygen.1
Pre-existing medical conditions such as eye,1
skin, and respiratory disorders may be aggravated1
by exposure.1

1

DANGER!1

Aspiration Hazard: If swallowed can enter lungs and may cause chemical1
pneumonitis.Do not induce vomiting. Call Physician1
immediately.1
Suspected Cancer Agent1

to be noncarcinogenic by NTP, IARC and OSHA.

WD-40 CO2 AEROSOL (CURRENT) MATERIAL SAFETY DATA SHEET Page 2

VI. REACTIVITY DATA

Stability: Stable__X__ Unstable_____

Conditions to avoid: NA

Incompatability: Strong oxidizing materials

Hazardous decomposition products: Thermal decomposition may yield carbon monoxide and/or carbon dioxide.

Hazardous polymerization: May occur _____ Will not occur ___X__

VII. SPILL OR LEAK PROCEDURES

Spill Response Procedures

Spill unlikely from aerosol cans. Leaking cans should be placed in plastic bag or open pail until pressure has dissipated.

Waste Disposal Method

Empty aerosol cans should not be punctured or incinerated; bury in landfill. Liquid should be incinerated or buried in land fill. Dispose of in accordance with local, state and federal regulations.

VIII. SPECIAL HANDLING INFORMATION

Ventilation: Sufficient to keep solvent vapor less than TLV.

Respiratory Protection: Advised when concentrations exceed TLV.

Protective Gloves: Advised to prevent possible skin irritation.

Eye Protection: Approved eye protection to safeguard against potential eye contact, irritation or injury.

Other Protective Equipment: None required.

IX. SPECIAL PRECAUTIONS

Keep from sources of ignition. Avoid excessive inhalation of spray particles, do not take internally. Do not puncture, incinerate or store container above 120 deg. F.Exposure to heat may cause bursting. Keep can away from electrical current or battery terminals. Electrical arcing can cause burn-through (puncture) which may result in flash fire, causing serious injury. Keep from children.

X. TRANSPORTATION DATA (49CFR 172.101)

Domestic Surface

Description: Consumer Commodity

Hazard Class: ORM-D

ID No.: NONE

Label Required: Consumer Commodity (ORM-D)

Domestic Air

Description: Consumer Commodity (Flammable Gas-Aerosol products)

Hazard Class: ORM-D

ID No: NONE

Label Required: Consumer Commodity (ORM-D-AIR)

WD-40 CO2 AEROSOL (CURRENT) MATERIAL SAFETY DATA SHEET Page 3

XI. REGULATORY INFORMATION

All ingredients for this product are listed on the TSCA inventory

SARA Title III chemicals: None

California Prop 65 chemicals: None

CERCLA reportable quantity: None

RCRA hazardous waste no: D001 (Ignitable)

Part: 10011 Line: WD Desc: WD40 11OZ

REVISION DATE: March 2001 SUPERSEDES: March 1998ı
ı
NA = Not applicable NDA = No data available < = Less than > = More thanı
ı
We believe the statements, technical information and recommendationsı
contained herein are reliable. However, the data is provided withoutı
warranty, expressed or implied. It is the users responsibility bothı
to determine safe conditions for use of this product and assume loss,ı
damage or expense, direct or consequential, arising from its use. Beforeı
using product, read label.ı

*** End of Report ***

MSDS - Misc.

CARG003945

Misc.

Misc

MSDS Document

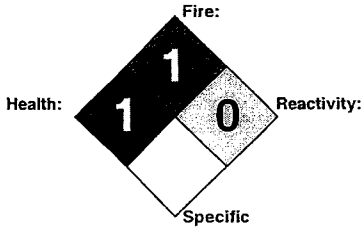
Product Ant & Roach Killer

1. Chemical Product and Company Identification

Trade Name of this Product Ant & Roach Killer
MSDS ID 89730

Manufacturer
Lawson Products, Inc.
1666 East Touhy Avenue
Des Plaines, IL 60018

Contact Name
Corporate Compliance Team
Phone Number
(847) 827-9666
Emergency Phone
(888) 426-4851
Revision Date 10/15/2001



Health:	1
Fire:	1
Reactivity:	0
Specific	

2. Composition and Information on Ingredients

Ingredient	CAS Number	Weight %	ACGIH TLV	PEL	STEL
Isobutane	75-28-5	N/A %			
Propane/Isobutane/n-Butane	74-98-6	N/A %			
Isoparaffin	68551-17-7	N/A %			

3. Hazard Identification

Synergistic Products
N/A

Irritancy Of Product
Moderate eye irritant.

EFFECTS OF CHRONIC EXPOSURE TO PRODUCT
May be harmful or fatal if swallowed (aspiration hazard). Repeated or prolonged

overexposure can cause dermatitis. Overexposure to vapors may induce central nervous system effects.

Target Organs Affected
Vapors: Irritating to eyes and respiratory tract. Direct Contact: Irritating to skin and eyes.

MEDICAL CONDITIONS PRONE TO AGGRAVATION BY EXPOSURE
Pre-existing skin and lung disorders may be adversely affected from overexposures.

Effects Of Overexposure
Irritates eyes. Prolonged or repeated contact may irritate skin. Nose and throat irritant.

Route Of Entry
Ingestion Inhalation Eyes Skin

4. First Aid Information

First Aid Procedures
Give oxygen. Do not induce vomiting. Gastric lavage- Wash eyes and skin with water.

5. Fire Fighting Measures

Flash Point 0

Extinguishing Media
Foam Carbon Dioxide Dry Chemical Water Fog

6. Accidental Release Measures

Material Release Or Spill
Remove all sources of ignition, ventilate. Avoid breathing vapors and remove with inert absorbent.

7. Handling and Storage

Handling Precautions
N/A

Storage
Store in a cool, dry place away from heat and open flame. Keep out of reach of children

Other Precautions
Avoid contact with skin and eyes. Avoid breathing vapor.

Handling And Storage
Read and follow contents on product label. Do not store in temperatures above 130 F.

Hygienic Practices
Wash hands before eating or using the washroom. Smoke in SMOKING AREAS ONLY.

8. Exposure Controls and Personal Protection

Other Protective Equipment
Eye wash station and safety showers should be available.

Eye Protection
Use safety eyewear designed to protect against splash of liquids.

Clothing
Impermeable clothing should be used to prevent excessive skin contact.

Other PPE
N/A

Protective Gloves
Required for prolonged or repeated contact.

Ventilation
If current ventilation practices are not adequate in maintaining airborne concentrations below the established exposure limits, additional ventilation or exhaust systems may be required.

Respiratory Protection
Avoid breathing concentrated vapors or particles from all products not specifically designed to be inhaled.

9. Physical and Chemical Properties

Physical State	Liquid
Specific Gravity	0.98
pH	7.33
Boiling/Cond. Point	212.0
VOC %	10.00

Odor And Appearance
Mild odor, white color.

10. Stability and Reactivity

Incompatibility
Avoid contact with strong oxidizing agents. Extended exposure to high temperatures may cause decomposition.

Conditions To Avoid
Pressurized containers may rupture above 130 F.

Hazardous Decomposition Products
By open flame: CARBON MONOXIDE, CARBON DIOXIDE.

Hazardous Polymerization
Will not occur.

11. Toxicological Information

Carcinogenicity
None of the components in this chemical are listed by IARC, NTP or OSHA as a carcinogen.

12. Ecological Information

Ecological Information
No information available.

13. Disposal Considerations

Waste Disposal Method
Dispose of product in accordance with local, county, state, and federal regulations. Do not puncture or incinerate container. Do not reuse container. Wrap container and place in trash collection.

14. Transportation Information

OSHA CLASS N/A
PER DOT N/A
DOT Class N/A
PER IMCO N/A
IMCO Classification Number N/A
IATA Classification Number N/A

15. Regulatory Information

CPR Certification
This product has been classified in accordance with the hazard criteria of the Controlled Product Regulations and the MSDS contains all of the information required by the Controlled Product Regulations.

16. Other Information

Other Precautions
No information available.

Misc.

ARI When Quality Counts

PO Box 510
Orchard Hill, GA 30266

Date: 2005

MATERIAL SAFETY DATA SHEET

Section I – Product Identification

MANUFACTURER'S NAME:	**ARI**	EMERGENCY PHONE #:	**800- 241-5064**
ADDRESS:	**PO BOX 510, ORCHARD HILL, GA 30266**		
TRADE NAME:	**ARI WASP & HORNET KILLER**		
SYNONYMS:	**BEE BOPPER II**		
EPA NUMBER:	**7754-44**		

Section II – Material Analysis/Active Ingredients

Component or Material Chemical Name	% of Mixture	CAS #	TLV
Tetramethrin (1-cyclohexene-1, 2-dicarbo-ximido) methyl 2, 2-dimethyl-3- (2-methyl-propenyl) cyclopropane-carboxylate	**.20%**	**7696-12-0**	
3-Phenoxybenzyl- (1RS, 3S; 1RS, 3SR) –2, 2-dimethyl –3- (2-methylprop-1-enyl) cyclopropane-carboxylate distillate- Vista LPA	**.125%**	**26002-80-2**	
Carbon Dioxide – CO2	**3.0%**	**124-38-9**	

Section III – Sara Title III/Section 313 Supplier Notification

This product contains the following toxic chemicals subject to the reporting requirements of section 313 of the Emergency Planning and community Right-To-Know Act of 1986 and of 40 CFR 372:

CAS#	Chemical Name	% by Weight

This product contains no section 313 chemicals.

Section IV – Physical Data

Boiling Point	**369 – 498°F**
Solubility in H20 % by weight	**2.1ppm**
Specific Gravity H2O = 1	**.81**
Vapor pressure in can PSI at 70°F	**In can PSI at 70 F: 100lbs.**
Odor	**Odor of petroleum solvent.**
Appearance	**Pale yellow-colored, oily liquid.**

Section V – Fire and Explosion Data

Flash Point (Closed cup)	**53°F**
Flammable Explosive Limits (% volume in air)	**Lower: 2.5** **Upper: N/A**
Extinguishing Methods	**Use foam, dry chemical or CO2**
Special fire and Explosion Procedures	**Self-contained breathing apparatus with a full facepiece operated in pressure demand mode**
Unusual Fire and Explosion Hazard	**Material is highly volatile. DO NOT expose to open flames, welding or cutting torch, or electric motors, or other sources of ignition.**

Section VI – Health Hazard Information

HEALTH HAZARD DATA
ROUTES OF EXPOSURE

Occupational Exposure Limit	**Not established**
Carcinogenicity	**Not established, but none of the ingredients are considered carcinogenic.**
Primary Routes of entry	**Skin, inhalation**

EMERGENCY AND FIRST AID PROCEDURES

Symptoms and Effects of Overexposure	Route of Entry	Emergency and First Aid Information
Force of released product may damage the eyes. Non-volatiles may cause temporary irritation, tearing and blurred vision.	EYES	Immediately flush with large amounts of water for at least 15 minutes. If irritation persists, get medical attention.
Prolonged or repeated exposure can cause irritation and reddening of the skin.	SKIN	Immediately flush affected areas with water. If irritation persists, remove contaminated clothing and wash affected areas with soap and water.
Excessive inhalation may cause nasal and respiratory irritation.	INHALATION	Remove affected person to fresh air. Give oxygen, if necessary. If breathing has stopped, administer artificial respiration and get medical attention immediately.
Can cause stomach irritation, resulting in nausea, cramps and vomiting.	INGESTION	DO NOT induce vomiting. Keep affected person warm and quiet and get medical attention immediately.

Section VII– Reactivity Data

Condition contributing to instability	**High temperatures.**
Incompatability	**May react to strong oxidizers.**
Hazardous decomposition products	**None expected.**
Conditions contributing to hazardous polymerization	**None.**

Section VIII – Spill or Leak Procedures

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED

Neutralizing chemical	**Eliminate all ignition sources. Contain the spill (prevent this product from reaching surface waters or other water supplies.) Soak up the spill with an appropriate absorbent and transfer into waste containers for disposal. Clean the spill area with detergent and water.**
Waste disposal method	**Contaminated absorbent and wash water should be disposed of according to local, state and federal regulations.**
RCRA/CERCLA Hazardous Waste.	**Not Applicable.**
Emergency Telephone Numbers	**CHEMTREC 1-800-424-9300 (For transportation spills)**

Section XIX – Industrial Hygiene Control Measures

Ventillation Requirements:	**If product must be used indoors make sure adequate ventilation is used.**

SPECIFIC PERSONAL PROTECTIVE EQUIPMENT

Respiratory (specific in detail)	**In the absence of proper ventilation, use a respirator approved by NIOSH/MSHA for use with pesticides and organic solvents.**
Eye	**Safety glasses.**
Gloves	**Wear rubber gloves**
Other Clothing and Equipment	**Avoid exposure with skin and clothing.**

Section X – Storage and Special Handling

Precautionary Statements	**DO NOT spray toward eyes or mouth.**
Other Handling and Storage Requirements	**This product toxic to fish. Do not contaminate ponds, lakes or streams by cleaning of equipment or disposal of waste. Contents are packed under pressure. Do not stopre at temperatures above 130°F.**
Department of Transportation Information PROPER SHIPPING NAME: HAZARD CLASS:	 **CONSUMER COMMODITY** **ORM-D**
Prepared by: **ARI**	DATE: 2005

Misc

MATERIAL SAFETY DATA SHEET

Section 1: Product & Company Identification

Product Name: CO® Contact Cleaner - Aerosol
Product Number (s): 02016, 72016, 82016

Manufactured By: CRC Industries, Inc. (215) 674-4300
885 Louis Drive, Warminster, PA 18974
24-Hour Emergency Information: CHEMTREC (800) 424-9300

Section 2: Composition/Information on Ingredients

Component	CAS NUMBER	ACGIH TLV	OSHA PEL	OTHER LIMITS	%
1-Methoxy-nonafluorobutane	163702-07-6	NE	NE	750 ppm[1]	0-60
1-Methoxy-nonaisofluorobutane	163702-08-7	NE	NE	750 ppm[1]	0-60
Decafluoropentane	138495-42-8	NE	NE	NE	0-60
1,1,1,2-Tetrafluoroethane	811-97-2	NE	NE	1000 ppm	30-50

[1] Total for all isomers

Section 3: Hazards Identification

Emergency Overview

Appearance & Odor: Colorless liquid.

Warning: Contents Under Pressure.

Potential Health Effects:

Inhalation: Drowsiness, lightheadedness. High levels may cause cardiac arrhythmias.
Eyes: Irritation
Skin: Defatting, dermatitis
Ingestion: Gastrointestinal discomfort

Carcinogenicity: OSHA: No IARC: No NTP: No
Chronic Overexposure: Skin irritation on repeated contact.
Medical Conditions Aggravated by Exposure: Impaired cardiovascular function such as cardiac arrhythmias may be sensitized by inhalation.

Section 4: First Aid Measures

Inhalation: Remove to fresh air. Give artificial respiration if necessary.

Eyes: Flush with large amounts of water for 15 minutes.

Skin: Remove contaminated clothing and wash area with soap and water.

Ingestion: Call a physician. Do not induce vomiting.

CARG003955

Section 5: Fire-Fighting Measures

Flashpoint:	None	Method:	TCC, TOC	LEL:	ND	UEL:	ND
Extinguishing Media:		Not needed					
Hazardous Combustion Products:		CO, CO_2, HF					
Fire-fighting Instructions:		Remove containers from fire area if possible. Use self-contained breathing apparatus for fire fighting. Aerosol cans may explode if heated above 120°F.					
NFPA:	Health: 1	Flammability:	0	Reactivity:	1		
HMIS:	Health: 1	Flammability:	0	Reactivity:	1	PPE:	B

Section 6: Accidental Release Measures

Spill/Leak Procedures: Usually not a problem with aerosols. Area should be ventilated. Absorbent should be used to pick up excess material. All used and unused product should be disposed of in accordance with federal, state and local regulations.

Section 7: Handling and Storage

Handling Procedures: Store in a cool, dry area. Aerosol cans must be maintained below 120°F to prevent cans from exploding.

Section 8: Exposure Controls/Personal Protection

Engineering Controls: Adequate to prevent accumulation of vapors. Use mechanical means if necessary to maintain levels below the exposure limits. If working in a confined space, follow applicable OSHA regulations.

Respiratory: Use NIOSH/MSHA compliant respirators or self-contained breathing apparatus above exposure limits. Follow OSHA regulations 29 CFR 1910.134.

Protective Clothing/Equipment: Wear chemically protective gloves and safety glasses. Use a splash apron and boots if splashing occurs.

Section 9: Physical & Chemical Properties

Physical State:	Liquid	Appearance & Odor:	Colorless liquid
Specific Gravity:	1.50-1.60	Boiling Point:	55-61°C
Freezing Point:	ND	Vapor Pressure:	> 200 mm Hg
Evaporation Rate:	Fast	Vapor Density (air = 1)	> air
pH:	NA	Solubility:	Slight solubility in water.
Volatile Organic Compounds: %:	(0)Exempt	g/L: (0)Exempt	lbs./gal: (0)Exempt

---

Section 10: Stability and Reactivity

Stability:	Stable	Hazardous Polymerization: No
Chemical Incompatibilities:	Strong oxidizers.	
Materials to Avoid:	Powdered metals such as aluminum, magnesium, calcium, zinc, strong alkali.	
Hazardous Decomposition Products:	Hydrofluoric Acid and possibly Carbonyl Fluoride.	

Section 11: Toxicological Information

CARG003956

Long-term toxicological studies have not been conducted for this product. See Section 3 of this MSDS for acute symptoms of overexposure and carcinogenicity information.

Section 12: Ecological Information

Ecotoxicity:	No data available.
Environmental Fate:	No data available for biodegradation.

Section 13: Disposal Considerations

Disposal: This material if discarded may be hazardous waste under U.S. EPA RCRA regulations. All disposal activities must comply with federal, state and local regulations. Contact your local or state environmental agency for specific rules. Do not dump into sewers, on the ground or into any body of water.

Section 14: Transportation Information

Shipping Name:	Consumer Commodity				
Hazard Class:	ORM-D	UN Number:	NA	Packing Group:	NA
Label:	NA	Placard:	NA		
Special Provisions:	NA				

Section 15: Regulatory Information

TSCA:	All components are either listed under TSCA or are exempt.			
SARA Title III:	Section 311/312:	Acute, Pressure	Section 313*:	None
CERCLA/Superfund (RQ):		NA		
Extremely Hazardous Substances:		No		
California Prop 65:		No		

* See section 2 for percentage

Section 16: Additional Information

Prepared By:	Michelle Milburn	Date:	November 10, 2003
Technical Information:	(800) 521-3168	CRC #:	508A-D

This information is accurate to the best of CRC Industries' knowledge or obtained from sources believed by CRC to be accurate. Before using any product, read all warnings and directions on the label.

CAS:	Chemical Abstract Service	NA:	Not Applicable
ppm:	Parts per Million	ND:	Not Determined
TCC:	Tag Closed Cup	NE:	Not Established
LEL:	Lower Explosive Limit	g/L:	grams per Liter
UEL:	Upper Explosive Limit	lbs./gal:	pounds per gallon
PPE:	Personal Protection Equipment	RQ:	Reportable Quantity
TOC:	Tag Open Cup		

CARG003957

The Clorox Company
1221 Broadway
Oakland, CA 94612
Tel. (510) 271-7000

Material Safety Data Sheet

Product: ULTRA CLOROX REGULARBLEACH

Description: CLEAR, LIGHT YELLOW LIQUID WITH A CHLORINE ODOR

Other Designations	Distributor	Emergency Telephone Nos.
Laundry Bleach	Clorox Sales Company 1221 Broadway Oakland, CA 94612	For Medical Emergencies call: (800) 446-1014 For Transportation Emergencies Chemtrec (800) 424-9300

II Health Hazard Data

CORROSIVE to the eyes. May cause severe irritation or damage to eyes and skin. Harmful if swallowed; nausea, vomiting, and burning sensation of the mouth and throat may occur. The following medical conditions may be aggravated by exposure to high concentrations of vapor or mist: heart conditions, or chronic respiratory problems such as asthma, chronic bronchitis or obstructive lung disease. Some clinical reports suggest a low potential for skin sensitization upon exaggerated exposure to sodium hypochlorite, particularly on damaged or irritated skin. Routine clinical tests conducted on intact skin with Clorox Liquid Bleach found no sensitization in the test subjects. No adverse health effects are expected with recommended use.

FIRST AID: EYE CONTACT: Immediately flush eyes with water for 15 minutes. Contact a physician.
INGESTION: Drink a glassful of water. DO NOT induce vomiting. Immediately contact a physician or Poison Control Center.
SKIN CONTACT: Remove contaminated clothing. Flush skin with water. Contact a physician if irritation or discomfort persists.
INHALATION: Remove from exposure to fresh air.

III Hazardous Ingredients

Ingredient	Concentration	Worker Exposure Limit
Sodium hydroxide CAS #1310-73-2	<0.2%	2 mg/m^3 TLV-C
Sodium hypochlorite CAS #7681-52-9	6-7.35%	not established

None of the ingredients in this product are on the IARC, OSHA or NTP carcinogen lists.
TLV-C=Threshold Limit Value-Ceiling. The worker exposure limit should not be exceeded at any time. Source: ACGIH, 1997.

IV Special Protection and Precautions

The following recommendations are given for production facilities and for other conditions and situations where there is increased potential for accidental, large-scale, or prolonged exposure.

Hygienic Practices: Wear safety glasses and nitrile, neoprene or butyl rubber gloves. The availability of an eye wash and shower is recommended in a manufacturing environment.
Engineering Controls: Use general ventilation to minimize exposure to vapors.
Work Practices: Avoid eye and skin contact and inhalation of vapor or mist.

KEEP OUT OF REACH OF CHILDREN

V Transportation and Regulatory Data

U.S. DOT Hazard Class: Not restricted per 49 CFR 172.101(c)(12)(iv).
U.S. Proper Shipping Name: None
IMDG: Not restricted per IMDG Code Page 40 Paragraph 2.3.1.3.
IATA: Not restricted per IATA DGR special provision A3 and ICAO special provision 223.

EPA - SARA TITLE III/CERCLA: Bottled product is not reportable under Sections 311/312 and contains no chemicals reportable under Section 313. This product does contain chemicals (sodium hydroxide <0.2% and sodium hypochlorite <7.35%) that are regulated under Section 304/CERCLA.

TSCA/DSL STATUS: All components of this product are on the U.S. TSCA Inventory and Canadian DSL.

VI Spill Procedures/Waste Disposal

Spill Procedures: Control spill. Containerize liquid and use absorbents on residual liquid; dispose appropriately. Wash area and let dry. For spills of multiple products, responders should evaluate the MSDS's of the products for incompatibility wth sodium hypochlorite. Breathing protection should be worn in enclosed, and/or poorly ventilated areas until hazard assessment is complete.
Waste Disposal: Dispose of in accordance with all applicable federal, state, and local regulations.

VII Reactivity Data

Stable under normal use and storage conditions. Strong oxidizing agent. Reacts with other household chemicals such as toilet bowl cleaners, rust removers, vinegar, acids or ammonia containing products to produce hazardous gases, such as chlorine and other chlorinated species. Prolonged contact with metal may cause pitting or discoloration.

VIII Fire and Explosion Data

Flash Point: None
Special Firefighting Procedures: None
Unusual Fire/Explosion Hazards: None. Not flammable or explosive. Product does not ignite when exposed to open flame.

IX Physical Data

Boiling point.....approx. 212°F/100°C
Specific Gravity (H_2O=1).....~ 1.1 at 70°F
Solubility in Water.....complete
pH.....~11.4

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DATA SUPPLIED IS FOR USE ONLY IN CONNECTION WITH OCCUPATIONAL SAFETY AND HEALTH DATE PREPARED 10/19/01

MCXU

MISC

RECEIVED AUG 5 1993

U.S. DEPARTMENT OF LABOR
Occupational Safety and Health Administration

Form Approved
OMB No. 44-R1387

MATERIAL SAFETY DATA SHEET

132

Required under USDL Safety and Health Regulations for Ship Repairing, Shipbuilding, and Shipbreaking (29 CFR 1915, 1916, 1917)

SECTION I

MANUFACTURER'S NAME: Sand Products Company, Inc.	EMERGENCY TELEPHONE NO.: (503) 285-8668
ADDRESS (Number, Street, City, State, and ZIP Code): 5460 N. Channel Avenue Portland, OR 97217	
CHEMICAL NAME AND SYNONYMS: Amphorous Nickel Slag/Copper Slag	TRADE NAME AND SYNONYMS: Diamond Blast
CHEMICAL FAMILY: Magnesium & Iron Silicates	FORMULA: $MgFeSiO_2$

SECTION II - HAZARDOUS INGREDIENTS

PAINTS, PRESERVATIVES, & SOLVENTS	%	TLV (Units)	ALLOYS AND METALLIC COATINGS	%	TLV (Units)
PIGMENTS		N/A	BASE METAL		N/A
CATALYST		N/A	ALLOYS		N/A
VEHICLE		N/A	METALLIC COATINGS		N/A
SOLVENTS		N/A	FILLER METAL PLUS COATING OR CORE FLUX		N/A
ADDITIVES		N/A	OTHERS		N/A
OTHERS		N/A			N/A

HAZARDOUS MIXTURES OF OTHER LIQUIDS, SOLIDS, OR GASES	%	TLV (Units)
Analysis of Diamond Blast indicates free silica levels of less than 1.5%. Fugitive dust should be minimized below 15 mg/m3. Use of OSHA/NIOSH approved respiratory apparatus required when sandblasting.		

SECTION III - PHYSICAL DATA

BOILING POINT (°F.)	N/A	SPECIFIC GRAVITY (H_2O=1)	2.73
VAPOR PRESSURE (mm Hg.)	N/A	PERCENT, VOLATILE BY VOLUME (%)	1%
VAPOR DENSITY (AIR=1)	N/A	EVAPORATION RATE (_____=1)	N/A
SOLUBILITY IN WATER	N/A		
APPEARANCE AND ODOR	Black & Green Granular, Odorless		

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (Method used)	N/A	FLAMMABLE LIMITS	Lel	Uel
EXTINGUISHING MEDIA	N/A			
SPECIAL FIRE FIGHTING PROCEDURES	N/A			
UNUSUAL FIRE AND EXPLOSION HAZARDS	N/A			

(Continued on reverse side)

CARG003959

PRODUCT: SODIUM CHLORIDE (SALT)

Rock salt used for de-icing

ORDER NO: 800141
PROD NO : 427050

ROGER TERMINAL & SHIPPING
1750 NW NATO PARKWAY

PORTLAND ,OR 97209

UNIVAR USA INC. (425)889-3400
17425 NE UNION HILL RD , REDMOND , WA 98052

---------- EMERGENCY ASSISTANCE ----------

FOR EMERGENCY ASSISTANCE INVOLVING CHEMICALS CALL - CHEMTREC
(800)424-9300

****
PRODUCT IDENTIFICATION
****

PRODUCT NAME: SODIUM CHLORIDE (SALT)

MSDS#: 64309

DATE ISSUED: 09/01/2002

SUPERSEDES: 12/01/1998

ISSUED BY: 008235

MATERIAL SAFETY DATA SHEET

1. CHEMICAL PRODUCT AND COMPANY INFORMATION

Chemical Product Name	Sodium Chloride (Salt)
Chemical Family	Alkali Metal/Halide
Chemical Name	Sodium Chloride
INCI Name	SODIUM CHLORIDE
INN Name	sodium chloride
Formula	NaCl
Molecular Weight	58.44

Distributed by:

PRODUCT: SODIUM CHLORIDE (SALT)

ORDER NO: 800141
PROD NO : 427050

Univar USA
17425 NE Union Hill Road
Redmond, WA 98052
425 889-3400

24 Hour Emergency (CHEMTREC): 800-424-9300

2. COMPOSITION/INFORMATION ON INGREDIENTS

Description
White crystalline solid

Ingredient Name	CAS Number	Exposure Limits	Concentration (%)
Sodium Chloride	7647-14-5		100

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

[illegible] - GRAS Substance (Generally Recognized As Safe)
Potential Health Effects

Route(s) Of Entry: Ingestion, skin/eye contact, inhalation.

Human Effects and Symptoms of Overexposure:
Acute Inhalation: Irritation of the respiratory tract.

Chronic Inhalation:
No applicable information found for chronic system effects.

Acute Skin Contact:
Large amounts can cause irritation, and, if applied to damaged skin, absorption can occur with effects similar to those via ingestion.

Chronic Skin Contact:
No applicable information found for chronic system effects.

Acute Eye Contact:
Irritation with burning and tearing (salt concentrations greater than the normal saline present).

Chronic Eye Contact:
No applicable information found for chronic systemic effects.

[illegible]te Ingestion:
[illegible]ke of large amounts has generally occurred for deliberate reasons: suicide, absorption, and to induce vomiting. The following effects were

observed: nausea and vomiting, diarrhea, cramps, restlessness, irritability, dehydration, water retention, nose bleed, gastrointestinal tract damage, fever, sweating, sunken eyes, high blood pressure, muscle weakness, dry mouth and nose, shock, cerebral edema (fluid on brain), pulmonary edema (fluid in lungs), blood cell shrinkage, and brain damage (due to dehydration of brain cells). Death is generally due to cardiovascular collapse or CNS damage. Less than a few grams would not be harmful. For larger quantities, drink large amounts of water or milk.

Chronic Ingestion:
No applicable information found for chronic systemic effects.

Carcinogenicity
NTP: Not listed as carcinogen or mutagen.
IARC: Not listed as carcinogen or mutagen.
OSHA: Not listed as carcinogen or mutagen.

Medical Conditions Aggravated by Exposure: In some cases of confirmed hypertension, ingestion may result in elevated blood pressure.

4. FIRST AID MEASURES

First Aid for Eyes:
For eye contact, flush with water immediately, lifting eyelids occasionally.

First Aid for Skin:
Remove clothing from affected area. Wash skin thoroughly. Rinse carefully.

First Aid for Inhalation:
If person breathes large quantities, remove to fresh air at once. If breathing stops, apply artificial respiration immediately.

First Aid for Ingestion:
Less than a few grams would not be harmful. For larger quantities, drink large amounts of water or milk.

5. FIRE AND MEASURES

Flash Point: N/A

Extinguishing Media: N/A. This product is nonflammable.

Special Fire Fighting Procedures: N/A

6. ACCIDENTAL RELEASE MEASURES

Spill or Leak Procedures:
Contain spills to prevent contamination of water supply or sanitary sewer

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system. Vacuum or sweep into containers for proper disposal.

7. HANDLING AND STORAGE

Storage Temperature (min./max.):
Avoid humid or wet conditions as product will cake and become hard.

Special Sensitivity:
Avoid contact with strong acids.

Handling and Storage Precautions:
Becomes hygroscopic at 75% relative humidity.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Eye Protection Requirements:
Eyeglasses or goggles should be worn in dusty areas.

Skin Protection Requirements:
Protective clothing may be worn in dusty areas, but is generally not required.

Respiratory/Ventilation Requirements:
NIOSH/MSHA approved respirator for particulates.

Exposure Limits: Not listed.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical Form:	White crystalline solid with slight halogen odor.
Color:	White to opaque.
Odor:	Halogen odor when heated.
Boiling Point (760mm Hg)(C):	1465
Melting Point/Freezing Point (C):	801
pH:	6.7 - 10.0
Solubility in Water (g/cc)(%):	26.4
Specific Gravity (H2O = 1):	2.16
Bulk Density (lbs.lft):	35-83
%Volatile by Weight:	N/A
Vapor Pressure (mm Hg/7470C):	2.4
Vapor Density (Air=1):	N/A

10. REACTIVITY

Stability:
Stable

Incompatibilities:
Avoid contact with strong acids. Becomes corrosive to metals when wet.

PRODUCT: SODIUM CHLORIDE (SALT)

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Decomposition Products:
May evolve chlorine gas when in contact with strong acids.

11. TOXICOLOGICAL INFORMATION

Description:
Not listed.

12. ECOLOGICAL INFORMATION

Ecotoxicity:
Not listed.

Environmental Degradation:
Not listed.

13. DISPOSAL CONSIDERATIONS

Waste Disposal Method:
Follow applicable Federal, state, and local regulations.

14. TRANSPORTATION INFORMATION

D.O.T. Shipping Name:	Not listed.
Technical Shipping Name:	Not listed.
D.O.T. Hazard Class:	Not listed.
U.N./N.A. Number:	Not listed.
Product Rq (lbs.):	N/A
D.O.T. Label:	Not listed.
D.O.T. Placard:	N/A
Freight Class Bulk:	N/A
Freight Class Package:	N/A
Product Label:	N/A

15. REGULATORY INFORMATION

OSHA Status: Not listed.

TSCA Status: Listed as non-hazardous.

CERCLA Reportable Quantity SARA Title III
Section 302 Extremely Hazardous Substances: Not listed.

Section 311/312 Hazard Categories: Not listed.

Section 313 Toxic Chemicals: Not listed.

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RCRA Status: Not listed.

EINECS Number: 231-598-3
ENCS Number: 1-236
ECL Serial Number: KE-31387
SWISS Number: G-2580
HMIS Rating: 1 0 0 A

State Regulatory Information

Company Name/Cas Number	Concentration	State Code
N/A		

16. OTHER INFORMATION

Approval Date: September 2002

PRODUCT: SODIUM CHLORIDE (SALT)

ORDER NO: 800141
PROD NO : 427050

FOR ADDITIONAL INFORMATION

CONTACT: MSDS COORDINATOR UNIVAR USA INC.
DURING BUSINESS HOURS, PACIFIC TIME (425)889-3400

12/12/07 08:39 PRODUCT: 427050 CUST NO: 634249 ORDER NO: 800141

NOTICE

******** UNIVAR USA INC("UNIVAR"), EXPRESSLY DISCLAIMS

ALL EXPRESS OR IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A

PARTICULAR PURPOSE, WITH RESPECT TO THE PRODUCT OR INFORMATION PROVIDED

HEREIN, AND SHALL UNDER NO CIRCUMSTANCES BE LIABLE FOR INCIDENTAL OR

CONSEQUENTIAL DAMGAGES. **

DO NOT USE INGREDIENT INFORMATION AND/OR PERCENTAGES IN THIS MSDS AS A PRODUCT SPECIFICATION. FOR PRODUCT SPECIFICATION INFORMATION REFER TO A PRODUCT SPECIFICATION SHEET AND/OR A CERTIFICATE OF ANALYSIS. THESE CAN BE OBTAINED FROM YOUR LOCAL UNIVAR SALES OFFICE.

ALL INFORMATION APPEARING HEREIN IS BASED UPON DATA OBTAINED FROM THE MANUFACTURER AND/OR RECOGNIZED TECHNICAL SOURCES. WHILE THE INFORMATION IS BELIEVED TO BE ACCURATE, UNIVAR MAKES NO REPRESENTATIONS AS TO ITS ACCURACY OR SUFFICIENCY. CONDITIONS OF USE ARE BEYOND UNIVARS CONTROL AND THEREFORE USERS ARE RESPONSIBLE TO VERIFY THIS DATA UNDER THEIR OWN OPERATING CONDITIONS TO DETERMINE WHETHER THE PRODUCT IS SUITABLE FOR THEIR PARTICULAR PURPOSES AND THEY ASSUME ALL RISKS OF THEIR USE, HANDLING, AND DISPOSAL OF THE PRODUCT, OR FROM THE PUBLICATION OR USE OF, OR RELIANCE UPON , INFORMATION CONTAINED HEREIN. THIS INFORMATION RELATES ONLY TO THE PRODUCT DESIGNATED HEREIN, AND DOES NOT RELATE TO ITS USE IN COMBINATION WITH ANY OTHER MATERIAL OR IN ANY OTHER PROCESS.

* * * E N D O F M S D S * * *

Trade Name & Synonyms:

SECTION V - HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE: Total Dust - 15mg/m3 Respirable Dust - 2mg/m3

EFFECTS OF OVEREXPOSURE: If threshold values are exceeded, stop abrasive blasting until levels are met, or limit personnel exposure.

EMERGENCY AND FIRST AID PROCEDURES

SECTION VI - REACTIVITY DATA

STABILITY			CONDITIONS TO AVOID
	UNSTABLE		
	STABLE	X	Excessive Dust

INCOMPATABILITY (Materials to avoid): Soluble in strong mineral acids.

HAZARDOUS DECOMPOSITION PRODUCTS: N/A

HAZARDOUS POLYMERIZATION			CONDITIONS TO AVOID
	MAY OCCUR		
	WILL NOT OCCUR	X	

SECTION VII - SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: Test spent abrasive in accordance with TCLP guidelines. If contaminated, dispose of in accordance with state and local guidelines.

WASTE DISPOSAL METHOD: Current regulations require material not passing TCLP to be classified as hazardous waste. If spent material passes TCLP, dispose of in landfill or recycle.

SECTION VIII - SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION (Specify type): OSHA/NIOSH approved respiratory equipment.

VENTILATION	LOCAL EXHAUST	SPECIAL
	Recommended	
	MECHANICAL (General)	OTHER

PROTECTIVE GLOVES

EYE PROTECTION: OSHA/NIOSH approved for sandblasting

OTHER PROTECTIVE EQUIPMENT: As required for comfort, protection from sandblasting.

SECTION IX - SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING: N/A

OTHER PRECAUTIONS: This product creates fugitive dust when used for sandblasting. Keep dust exposure below TLV's.

CARG003967

MATERIAL SAFETY DATA SHEET (MSDS)

Misc.

This MSDS should be attached or kept with the respective product with which it is associated.

CORDUS # 00028223

2U138
2U137

GOJO GOJO INDUSTRIES, INC.
P.O. BOX 991, AKRON, OH 44309-0991

PHONE: (330)920-8100 EXT 352
EMERGENCY: 1-800-321-9647 EXT 242
CHEMTREC (PUBLIC EMERGENCY): 1-800-424-9300
STOCK NO.: 1839-01
1837-04

MATERIAL SAFETY DATA SHEET
HMIS RATING

HEALTH	1
FLAMMABILITY	0
REACTIVITY	0
PERSONAL PROTECTION	NA

1. PRODUCT: CASTILLIAN LOTION SOAP

2. HAZARDOUS (OR OTHER) INGREDIENTS

	CAS NUMBER	OSHA PEL	ACGIH TLV	%RANGE
(WATER)	7732-18-5	NA	NA	> 70
(COCOATE)	61791-31-9	NA	NA	< 13
(OLEATE)	2272-11-9	NA	NA	< 13
(*SODIUM SULFATE*)	7757-82-6	NA	NA	< 7
(CHLOROXYLENOL)	88-04-0	NA	NA	< 1
(COCAMIDE)	68140-00-1	NA	NA	< 1
(EDTA)	60-00-4	NA	NA	< 1
(GLYCOL DISTEARATE)	627-83-8	NA	NA	< 1
(PROPYLENE GLYCOL)	57-55-6	NA	NA	< 1
(FD & C BLUE #1)	3844-45-9	NA	NA	TR
(FD & C RED #40)	25956-17-6	NA	NA	TR
(FD & C YELLOW #5)	1934-21-0	NA	NA	TR

OSHA STANDARDS AND SARA TITLE III DO NOT APPLY TO THIS COSMETIC PRODUCT. COSMETICS AND UNLISTED INGREDIENTS ARE NOT CONSIDERED HAZARDOUS OR REPORTABLE BY ANY FEDERAL (OSHA, WHMIS, SARA, EPCRA, RCRA), ANY STATE OR ANY OTHER REGULATIONS.

3. HEALTH HAZARD DATA: THIS SKIN CARE COSMETIC IS NOT HAZARDOUS OR TOXIC UNDER NORMAL USE CONDITIONS.

ROUTES OF ENTRY: INHALATION SKIN X EYE INGESTION
CARCINOGENICITY: X NOT LISTED NTP IARC OSHA ACGIH
OVEREXPOSURE: MEDICAL CONDITIONS AGGRAVATED: NONE KNOWN.
POTENTIAL EFFECTS: MAY CAUSE EYE IRRITATION.

4. EMERGENCY AND FIRST AID PROCEDURES

EYE CONTACT: FLUSH IMMEDIATELY AND THOROUGHLY WITH WATER FOR 15 MINUTES. IF CONDITION WORSENS OR IRRITATION PERSISTS, CONTACT A PHYSICIAN.

INGESTION: DO NOT INDUCE VOMITING. IF VOMITING OCCURS, LOWER THE PERSON'S HEAD BELOW THEIR KNEES TO AVOID ASPIRATION. CONTACT PHYSICIAN OR POISON CONTROL CENTER.

5. FIRE FIGHTING OR EXPLOSION DATA

FLASH POINT, F/C: (PMCC METHOD): NA
FLAMMABILITY LIMITS: LEL,%: NA UEL,%: NA
EXTINGUISHING MEDIA: X WATER FOG X ALCOHOL FOAM X CO2 X DRY CHEMICAL
OTHER
UNUSUAL FIRE AND EXPLOSION HAZARDS: NONE KNOWN

SPECIAL FIRE FIGHTING PROCEDURES: NONE KNOWN

NFPA 704 RATING: 0 0 0 NA

6. ACCIDENTAL RELEASE MEASURES

NOT REPORTABLE UNDER CERCLA OR SARA TITLE III SECTION 304.

IF MATERIAL IS RELEASED OR SPILLED: PICK UP LARGE SPILLS OR ABSORB ON INERT MATERIAL. COLLECT IN SEALED APPROVED CONTAINER FOR DISPOSAL. FLUSH AREA WITH WATER TO CLEAN UP SMALL AMOUNTS AND REDUCE POSSIBLE SLIPPERY FLOOR HAZARD.

7. PRECAUTIONS FOR SAFE HANDLING AND USE

STORE AWAY FROM THE REACH OF SMALL CHILDREN.

PERSONAL PRECAUTIONS: AVOID CONTACT WITH EYES. DO NOT TAKE INTERNALLY.

STORAGE AND OTHER PRECAUTIONS: STORE AT AMBIENT INDOOR CONDITIONS. KEEP CONTAINERS SEALED.

8. CONTROL AND PROTECTION MEASURES

COMPLY IF APPLICABLE EXPOSURE LIMITS SHOWN IN SECTION 2 ABOVE.

TLV (ACGIH): NOT APPLICABLE.
PEL (OSHA): NOT APPLICABLE.
TWA: NONE.
STEL: NONE.
SKIN NOTE: NOT APPLICABLE.
VENTILATION: MECHANICAL - NOT REQUIRED IF USED AS DIRECTED.
LOCAL - NOT REQUIRED.
SPECIAL - NOT REQUIRED.
PERSONAL PROTECTION:
RESPIRATORY: NOT REQUIRED IF USED AS DIRECTED.
EYES: NOT REQUIRED.
SKIN: NOT REQUIRED.
PROTECTIVE EQUIPMENT OR CLOTHING: NOT REQUIRED.
WORK/HYGIENIC PRACTICE: ROUTINE PERSONAL HYGIENE.

9. PHYSICAL AND CHEMICAL CHARACTERISTICS

BOILING POINT, F/C: 212/100
VAPOR PRESSURE (MM HG): NE
VAPOR DENSITY (AIR=1): NE
VOLATILITY, %: > 75 (0 VOC)
SOLUBILITY IN WATER: COMPLETE
COLOR/CLARITY/FORM & ODOR: GOLD OPAQUE LIQUID, PLEASANT FRAGRANCE
MELTING POINT, F/C: NA
SPECIFIC GRAVITY (H2O=1): 1.0
EVAPORATION RATE (H2O=1): 1.0
PH (UNDILUTED): 8.8 - 9.6
VISCOSITY, CPS: 3,000 - 6,000

10. STABILITY AND REACTIVITY DATA

STABILITY: STABLE
HAZARDOUS POLYMERIZATION: NONE KNOWN
CONDITIONS TO AVOID: NONE KNOWN
INCOMPATIBILITY (AVOID): NONE KNOWN
DECOMPOSITION OR BY-PRODUCTS: COMBUSTION MAY PRODUCE CO, CO2, NOX

11. TOXICOLOGICAL INFORMATION (ALSO SEE SECTION 3)

NO ACUTE TOXIC EFFECTS EXPECTED BY INHALATION, INGESTION, OR CONTACT DURING ANTICIPATED HANDLING AND USAGE. NO LONG TERM CHRONIC EFFECTS.

IRRITANT: NOT A PRIMARY IRRITANT.
SENSITIZATION: NONE KNOWN.
SYNERGISM: NONE KNOWN.
SKIN LD50: NOT APPLICABLE.
ORAL LD50: OVER 10 GM/KG (NON TOXIC).
INHALATION LC50: NOT APPLICABLE.

12. ECOLOGICAL INFORMATION

NOT EXPECTED TO CAUSE ADVERSE ENVIRONMENTAL EFFECTS. NOT CONSIDERED ENVIRONMENTALLY HARMFUL FROM NORMAL DILUTION, EXPECTED USAGE AND TYPICAL DRAINAGE TO SEWERS, SEPTIC SYSTEMS, AND TREATMENT PLANTS.

POTENTIAL: BIODEGRADATION - YES, IN NORMAL WASTE STREAMS.
OXYGEN DEPLETION - NONE KNOWN.
BIOCONCENTRATION - NO.

AFFECTS: AQUATIC ORGANISMS: NOT SIGNIFICANT.
WASTE PLANT MICROBES: NONE KNOWN.
BOD: NE.
COD: NE.

13. DISPOSAL GUIDELINES

DISPOSE ACCORDING TO LOCAL, STATE/PROVINCE, FEDERAL & INTERNATIONAL REGULATIONS. NOT A CHARACTERISTIC HAZARDOUS OR LISTED WASTE BY EPA & RCRA (40 CFR PART 261).

14. TRANSPORT REGULATIONS

NOT HAZARDOUS BY DOT, HM-181, TDG, IATA, & IMO REGULATIONS.

SHIPPING CLASS: NOT REGULATED AS HAZARDOUS.
LABEL: NOT APPLICABLE.
UN/NA/PIN: NOT APPLICABLE.

15. REGULATORY CONSIDERATIONS

NOT REGULATED BY DOT, OSHA, WHMIS, TSCA, SARA, OR STATES.

COSMETICS & INGREDIENTS ARE NOT CONSIDERED HAZARDOUS OR REPORTABLE BY ANY FEDERAL (TSCA, OSHA, WHMIS, SARA, CERCLA, EPCRA, RCRA), ANY STATE, OR ANY OTHER RIGHT-TO-KNOW REGULATIONS. TSCA, OSHA STANDARDS, SARA TITLE III, AND STATE RIGHT-TO-KNOW LAWS MAKE EXCEPTIONS, EXCLUSIONS AND EXEMPTIONS FOR COSMETIC PRODUCTS THAT ARE REGULATED BY AND LABELED ACCORDING TO THE FOOD AND DRUG ADMINISTRATION (FDA).

TSCA, DSL, EINECS: COMPONENTS OF THE PRODUCT ARE LISTED, EXEMPTED OR EXCLUDED FROM THESE REQUIREMENTS.

SARA TITLE III: SEC. 302 EHS, TPQ: NA
SEC. 304 EHS, RQ: NA
SEC. 311/312: NA
SEC. 313: NONE

USA STATE REGULATIONS: REPORTABLE SUBSTANCES PRESENT AT NOTIFICATION QUANTITIES; NA AND NONE KNOWN.

INTERNATIONAL HAZARD CLASS:
CANADA (WHMIS OR TDG): NOT A CONTROLLED PRODUCT
EEC: NOT REGULATED

16. OTHER RELEVANT INFORMATION

NO DATA AVAILABLE UNLESS SPECIFICALLY INDICATED BELOW.

PREPARED BY: DONALD H. SINNER
REGULATORY & ENVIRONMENTAL AFFAIRS MANAGER
DATE: 1/08/96
SUPERSEDES: 6/13/95

NOTICE: THE INFORMATION HEREIN IS BASED ON DATA CONSIDERED TO BE ACCURATE AS OF THE DATE OF PREPARATION OF THIS MATERIAL SAFETY DATA SHEET. HOWEVER, NO WARRANTY OR REPRESENTATION, EXPRESSED OR IMPLIED, IS MADE AS TO THE ACCURACY OR COMPLETENESS OF THE FOREGOING DATA AND SAFETY INFORMATION. THE USER ASSUMES ALL LIABILITY FOR ANY DAMAGE OR INJURY RESULTING FROM THE ABNORMAL USE FROM ANY FAILURE TO ADHERE TO RECOMMENDED PRACTICES OR FROM ANY HAZARDS INHERENT IN THE NATURE OF THE PRODUCT.

NA = NOT APPLICABLE
ND = NO DATA
NE = NOT ESTABLISHED

FORM COMPLIES WITH OSHA FORM 174, EEC, & DRAFT ANSI FORMATS.

SECTION VII - REACTIVITY DATA

Stability: Stable
Incompatibility (avoid): Heat, open flame, spark, and oxidizing agents.
Polymerization: Will not occur.
Hazardous Decomposition: Carbon dioxide, carbon monoxide, and other unidentified organic compounds.

SECTION VIII - SPILL AND DISPOSAL PROCEDURES

be Taken in Case Material is Released or Spilled:
ately eliminate all flame, ignition and high-heat sources. Absorb spill on inert absorbent material (e.g. Zep-0-Zorb). Pick up and place residue in a clean, D.O.T. specification container for disposal. Wash area thoroughly with a detergent solution and rinse well with water.

Waste Disposal Method:
Liquid wastes are not permitted in landfills. Product is not considered a hazardous waste under RCRA. Unusable liquid may be absorbed on an inert absorbent material (eg Zep-O-Zorb), drummed, and taken to a chemical or industrial landfill. Pretreatment may be required before landfilling. Consult local, state, or federal agencies for proper disposal in your area.

RCRA Hazardous Waste Numbers: N/A

SECTION IX - SPECIAL PRECAUTIONS

Precautions to be Taken When Handling and Storing:
Combustible! Store and use away from heat, sparks, open flame, or any source of ignition. Post "No Smoking" signs according to local regulations for combustible liquids. Keep product away from skin and eyes. Do not breathe spray mists or vapors. Clothing or shoes which become contaminated with substance should be removed promptly and not reworn until thoroughly cleaned. Store tightly closed container in a dry area at temps. between 40-120 degrees F. Keep out of the reach of children.

SECTION X - TRANSPORTATION DATA

DOT PROPER SHIPPING NAME Small sizes one gallon or less may be shipped as ORM-D: NONE
DOT Hazard Class: N/A
DOT I.D. Number: N/A
DOT Label/Placard: NONE
EPA TSCA Chemical Inventory: ALL INGREDIENTS ARE LISTED
EPA CWA 40CFR Part 117 substance (RQ in a single container) : N/A

NOTICE

Thank you for your interest in, and use of, Zep products. Zep Manufacturing Co. is pleased to be of service to you by supplying this Material Safety Data Sheet for your files. Zep Manufacturing is concerned for your health and safety. Zep products can be used safely with proper protective equipment and proper handling practices consistent with label instructions and the MSDS. Before using any Zep product, be sure to read the complete label and the Material Safety Data Sheet.

As a further word of caution, Zep wishes to advise that *serious accidents have resulted from the misuse of* "emptied" containers. "Empty" containers retain residue (liquid and/or vapor) and can be dangerous. DO NOT pressurize, cut, weld, braze, solder, drill, grind or expose such containers to heat, flame, or other sources of ignition; they may explode or develop harmful vapors and possibly cause injury or death. Clean empty containers by triple rinsing with water or an appropriate solvent. Empty containers sent to a drum reconditioner before reuse.

MS AND ABBREVIATIONS USED IN THE MSDS:
BY SECTION ALPHABETICALLY:

SECTION II: HAZARDOUS INGREDIENTS
CAR; Carcinogen - A chemical listed by the National Toxicology Program (NTP), the International Agency for Research on Cancer (IARC) or OSHA as a definite or possible human cancer causing agent.
CAS #; Chemical Abstract Services Registry Number - A universally accepted numbering system for chemical substances.
CBL: Combustible - At temperatures between 100°F and 200°F chemical gives off enough vapor to ignite if a source of ignition is present as tested with a closed cup tester.
CNS: Central Nervous System depressant reduces the activity of the brain and spinal cord.
COR; Corrosive - Causes irreversible alterations in living tissue (e.g. burns).
DESIGNATIONS; Chemical and common names of hazardous ingredients.
EIR; Eye Irritant Only - Causes reversible reddening and/or inflammation of eye tissues.
EXPOSURE LIMITS: The time weighted average (TWA) airborne concentration at which most workers can be exposed without any expected adverse effects. Primary sources include ACGIH TLV's, and OSHA PEL's (TWA, STEL and ceiling limits).
ACGIH; American Conference of Governmental Industrial Hygienists.
CEILING; The concentration that should not be exceeded in the workplace during any part of the working exposure.
OSHA; Occupational Safety and Health Administration
PEL; Permissible Exposure Limit- A set of time weighted average exposure values, established by OSHA, for a normal 8-hour day and a 40-hour work week.
PPM; Parts per million - unit of measure for exposure limits.
(S) SKIN; Skin contact with substance can contribute to overall exposure.
STEL; Short Term Exposure Limit- Maximum concentration for a continuous 15-minute exposure period.
TLV: Threshold Limit Value - A set of time weighted average exposure limits, established by the ACGIH, for a normal 8-hour day and a 40-hour work week.
FBL: Flammable - At temperatures under 100°F, chemical gives off enough vapor to ignite if a source of ignition is present as tested with a closed cup tester.
HAZARDOUS INGREDIENTS; Chemical substances determined to be potential health or physical hazards by the criteria established in the OSHA Hazard Communication Standard - 29 CFR 1910.1200
HTX; Highly toxic - the probable lethal dose for 70 kg (150 lb.) man and may be approximated as less than 6 teaspoons (2 tablespoons).
IRR: Irritant - Causes reversible effects in living tissues (e.g. inflammation) - primarily skin and eyes.
N/A;-Not Applicable - Category is not appropriate for this product.
N/D; Not Determined - Insufficient information for a determination for this item.
RTECS #; Registry of Toxic Effects of Chemical Substances - an unreviewed listing of published toxicology data on chemical substances.
SARA; Superfund Amendments and Reauthorization Act - Section 313 designates chemicals for possible reporting for the Toxics Release Inventory.
SEN; Sensitizer - Causes allergic reaction after repeated exposure.
TOX: Toxic - The probable lethal dose for a 70 kg (150 lb.) man is one ounce (2 tablespoons) or more.

SECTION III: HEALTH HAZARD DATA
ACUTE EFFECT; An adverse effect on the human body from a single exposure with symptoms developing almost immediately after exposure or within a relatively short time.
CHRONIC EFFECT: Adverse effects that are most likely to occur from repeated exposure over a long period of time.
EST'D PEL/TLV: This estimated, time-weighted average, exposure limit, developed by using a formula provided by the ACGIH, pertains to airborne concentrations from the product as a whole. This value should serve as guide for providing safe workplace conditions to nearly all workers.
HMIS CODES; Hazardous Material Identification System - a rating system developed by the National Paint and Coating Association for estimating the hazard potential of a chemical under normal workplace conditions. These risk estimates are indicated by a numerical rating given in each of three hazard areas (Health/Flammability/Reactivity) ranging from a low of zero to a high of 4. A chronic hazard is indicated with a yes. Consult HMIS training guides for Personal Protection letter codes which indicate necessary protective equipment.
PRIMARY ROUTE OF ENTRY: The way one or more hazardous ingredients may enter the body and cause a generalized-systemic or specific-organ toxic effect.
ING; Ingestion - A primary route of exposure through swallowing of material.
INH; Inhalation - A primary route of exposure through breathing of vapors.
SKIN; A primary route of exposure through contact with the skin.

SECTION IV: SPECIAL PROTECTION INFORMATION
Where respiratory protection is recommended, use only MSHA and NIOSH approved respirators and dust masks.
MSHA; Mine Safety and Health Administration
NIOSH: National Institute for Occupational Safety and Health.

SECTION V: PHYSICAL DATA
EVAPORATION RATE: it refers to the rate of change from the liquid state to the vapor state at ambient temperature and pressure in comparison to a given substance (e.g. water).
pH: A value representing the acidity or alkalinity of an aqueous solution (Acidic pH = 1; Neutral pH = 7; Alkaline pH = 14)
PERCENT VOLATILE: The percentage of the product (liquid or solid) that will evaporate at 212°F and ambient pressure.
SOLUBILITY IN WATER: A description of the ability the product to dissolve in water.

SECTION VII: REACTIVITY DATA
HAZARDOUS DECOMPOSITION: Breakdown products expected to be produced upon product decomposition or fire.
INCOMPATIBILITY; Material contact and conditions to avoid to prevent hazardous reactions.
POLYMERIZATION; Indicates the tendency of the product's molecules to combine in a chemical reaction releasing excess pressure and heat.
STABILITY; Indicates the susceptibility of the product to spontaneously and dangerously decompose.

SECTION VIII: SPILL AND DISPOSAL PROCEDURES
RCRA WASTE NOS; RCRA (Resource Conservation and Recovery Act) waste codes (40 CFR 261) applicable to the disposal of spilled or unusable product from the original container.

SECTION X: TRANSPORTATION DATA
CWA: Clean Water Act
RQ; Reportable Quantity - The amount of the specific ingredient that, when spilled to the ground and can enter a storm sewer or natural watershed, must be reported to the National Response Center, and other regulatory agencies.
TSCA; Toxic Substances Control Act - a federal law requiring all commercial chemical substances to appear on an inventory maintained by the EPA.

DISCLAIMER

All statements, technical information and recommendations contained herein are based on available scientific tests or data which we believe to be reliable. The accuracy and completeness of such data are not warranted or guaranteed. We cannot anticipate all conditions under which this information and our products, or the products of other manufacturers in combination with our products, may be used. Zep assumes no liability or responsibility for loss or damage resulting from the improper use or handling of our products, from incompatible product combinations, or from the failure to follow instructions, warnings, and advisories in the product's label and Material Safety Data Sheet.

(Notice Revised 8/91)

MATERIAL SAFETY DATA SHEET

AND SAFE HANDLING AND DISPOSAL INFORMATION

CLEAN ACROSS AMERICA AND THROUGHOUT THE WORLD™

ZEP MANUFACTURING COMPANY
P.O. BOX 2015
ATLANTA, GEORGIA 30301

02/12/97 MISC

ISSUE DATE: 02/26/96
SUPERSEDES: 03/08/93
ZEP DYNA 143
PRODUCT NO.: 0366 **Parts Cleaner**

ROGER'S TERMINAL & SHIPPING (366)
TERMINAL #4
FOOT OF NORTH LOMBARD ST
PORTLAND, OR 97209

SECTION I - EMERGENCY CONTACTS

TELEPHONE:
(404) 352-1680 *BETWEEN 8:00 AM - 5:00 PM (EST)*
MEDICAL EMERGENCY:
(770) 439-4200 *NON-OFFICE HOURS, WEEKENDS*
(770) 432-2873 *AND HOLIDAYS, PLEASE CALL YOUR*
(770) 424-4789 **LOCAL POISON CONTROL**
(770) 392-1480
(770) 455-8160
(770) 552-8836
TRANSPORTATION EMERGENCY:
(770) 922-0923
CHEMTREC:
1-800-424-9300 **TOLL-FREE - ALL CALLS RECORDED**
DISTRICT OF COLUMBIA:
(202) 483-7616 **ALL CALLS RECORDED**

SECTION II - HAZARDOUS INGREDIENTS

DESIGNATIONS	TLV (PPM)	EFFECTS (SEE REVERSE)	% IN PROD.
** LIGHT ALIPHATIC NAPHTHA ** solvent naphtha (petroleum), medium aliphatics; CAS# 64742-88-7; RTECS# NONE; SUPPLIER SUGGESTED TLV - 100 ppm	100	IRR CBL	>90

SECTION III - HEALTH HAZARD DATA

Special Note: MSDS data pertains to the product as dispensed from the container. Adverse health effects would not be expected under recommended conditions of use (diluted) so long as prescribed safety precautions are practiced.

Acute Effects of Overexposure:
Overexposure to the vapors from this product may produce mucous membrane irritation, particularly of the eye and respiratory tract. Overexposure to vapors may also produce mild central nervous system depression characterized by headache, dizziness, nausea, and stupor, leading to unconsciousness in extreme cases. Introduction of solvents, as in aspiration of vomitus fluid, may produce chemical pneumonia. Existing respiratory disorders and lung diseases may be aggravated by inhalation of vapors.

Chronic Effects of Overexposure:
Skin which is repeatedly defatted by contact with this product may be more susceptible to irritation, infection, or dermatitis. None of the hazardous ingredients are listed as carcinogens by IARC, NTP, & OSHA

PEL/TLV: Not established **Primary Routes of Entry:** Inh, Skin.

Codes: HEALTH 1;FLAM. 2;REACT. 0;PERS. PROTECT. B ;CHRONIC HAZ. YES

FIRST AID PROCEDURES:
Skin: Wash contaminated skin thoroughly with soap or a mild detergent. Apply a skin cream with lanolin. Get medical attention if irritation persists.
Eyes: Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting upper and lower lids. Get medical attention at once.
Inhale: Move exposed person to fresh air. If irritation persists, get medical attention promptly.
Ingest: If swallowed, do not induce vomiting. If vomiting occurs, keep head below hip level. Get emergency medical attention immediately.

SECTION IV - SPECIAL PROTECTION INFORMATION

Protective Clothing: Wear neoprene, nitrile, or natural rubber gloves or gloves with proven resistance to the ingredients listed.
Eye Protection: Wear tight-fitting splash-proof safety glasses especially if contact lenses are worn.
Respiratory Protection: When exposure levels exceed PEL/TLV (likely in confined areas) use an organic vapor respirator (eg Zep 2211).
Ventilation: Provide local exhaust/ventilation as needed to keep concentration of vapors below exposure limits (PEL/TLV).

SECTION V - PHYSICAL DATA

Boiling Point (°F):	368 Initial	**Specific Gravity:**	0.785	**Vapor Pressure (mmHg):**	< 3 @ 100F
Percent Volatile by Volume (%):	100	**Vapor Density (air = 1):**	5.3	**Evaporation Rate (BUTYL ACETATE = 1):**	0.14
Solubility in Water:	INSOLUBLE	**pH (concentrate):**	N/A	**pH (use dilution of):**	N/A

Appearance and Odor: A CLEAR, WATER-WHITE LIQUID WITH A MILD ODOR.

SECTION VI - FIRE AND EXPLOSION DATA

Flash Point (°F) (method used): 143 (TCC)
Flammable Limits: LEL 1% UEL 7%
Extinguishing Media: Carbon dioxide, dry chemical, water fog, foam.
Special Fire Fighting: Wear self-contained positive pres. breathing apparatus.
Unusual Fire Hazards: Direct water onto intact containers to prevent bursting.

ITEM: 1FCC1 - Wood Glue 8 oz Tan FDA Approved

CLICK & FIND **MATERIAL SAFETY DATA SHEET (MSDS)** **MSDS: A8528**

This MSDS should be attached or kept with the respective product with which it is associated.

SAFETY DATA SHEET - A8528

As ted Grainger Item: 1FCC1 - Wood Glue 8 oz Tan FDA Approved

FRANKLIN INTERNATIONAL

MATERIAL SAFETY DATA SHEET

MSDS NAME: TITEBOND III ULTIMATE WOOD GLUE

MSDS NUMBER: 1413

REVISION DATE: 6/14/04

SECTION 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: TITEBOND III ULTIMATE WOOD GLUE

CAS NUMBER: NONE

HMIS HAZARD RATING:
HEALTH 1
FIRE 1
REACTIVITY 0

COMPANY IDENTIFICATION:
FRANKLIN INTERNATIONAL
2020 BRUCK STREET
COLUMBUS, OH 43207

CONTACT: FRANKLIN TECHNICAL SERVICES

TELEPHONE/FAX:
(800) 877-4583
(614) 445-1493

EMERGENCY PHONE (24 HOUR):
FRANKLIN SECURITY: (614) 445-1300

CHEMTREC (24 HOUR): (800) 424-9300

CHEMTREC INTERNATIONAL: (703) 527-3887

PRODUCT CLASS: CROSSLINK POLYVINYL ACETATE

PRODUCT USE: WATERPROOF WOOD GLUE

PRODUCT CODE: 56192

N: CONSTRUCTION ADHESIVES & SEALANTS

SECTION 2 - COMPOSITION AND INFORMATION ON INGREDIENTS

HAZARDOUS INGREDIENTS	CAS NUMBER	PERCENT
GLYCOL ETHER DB	112-34-5	2.00

OSHA PELS & ACGIH TLVS ARE LISTED IN SECTION 8 WHERE APPLICABLE.

SECTION 3 - HAZARD IDENTIFICATION

EMERGENCY OVERVIEW:
TAN COLORED WATER-BASED ADHESIVE. SLIPPERY IN THE WET STATE.

ROUTES OF ENTRY:
INHALATION: YES
SKIN: NO
EYE: YES
INGESTION: YES

INHALATION:
VAPORS AND/OR AEROSOLS WHICH MAY BE FORMED AT ELEVATED TEMPERATURE MAY BE IRRITATING TO EYES AND RESPIRATORY TRACT.

NO REPORTED INCIDENTS OF ADVERSE HEALTH AFFECTS RESULTING FROM INHALATION OF VAPORS AT ROOM TEMPERATURE.

SKIN: PROLONGED OR REPEATED SKIN CONTACT CAN CAUSE IRRITATION.

EYE: SUBSTANCE MAY CAUSE MODERATE EYE IRRITATION.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE:
PREEXISTING SKIN AND RESPIRATORY CONDITIONS.

CARCINOGENICITY:
IARC: NO
NTP: NO
OSHA: NO

REPRODUCTIVE TOXICITY:
THIS PRODUCT HAS NOT BEEN EVALUATED FOR REPRODUCTIVE TOXICITY.

TARGET ORGANS: EYES AND SKIN.

SECTION 4 - FIRST AID MEASURES

ATION:
PATIENT TO FRESH AIR, IF DISCOMFORT PERSISTS SEEK MEDICAL ATTENTION.

ION:
CALL POISON CONTROL CENTER IMMEDIATELY. FOLLOW THEIR SPECIFIC INSTRUCTIONS.

SKIN:
WASH WITH SOAP AND WATER. CONTACT A PHYSICIAN IF IRRITATION DEVELOPS OR PERSISTS.

EYE:
HOLD EYELIDS APART AND FLUSH WITH PLENTY OF WATER FOR AT LEAST 15 MINUTES. SEEK MEDICAL ATTENTION.

SECTION 5 - FIRE-FIGHTING MEASURES

FLAMMABILITY CLASS (OSHA): IIIB

FLASH POINT: >200 F

EXPLOSIVE RANGE: NOT APPLICABLE

EXTINGUISHING MEDIA:
USE ALCOHOL FOAM, CARBON DIOXIDE, WATER SPRAY, OR ABC DRY CHEMICAL WHEN FIGHTING FIRES INVOLVING THIS PRODUCT.

HAZARDOUS COMBUSTION PRODUCTS: OXIDES OF CARBON.

FIRE FIGHTING PROCEDURES:
WEAR A NIOSH APPROVED SELF-CONTAINED BREATHING APPARATUS.

SECTION 6 - ACCIDENTAL RELEASE MEASURES

CONTAINMENT TECHNIQUES:
USE INERT ABSORBENT TO DIKE THE SPILL. KEEP AWAY FROM DRAINS.

CLEAN-UP:
IF POSSIBLE PUMP LIQUID INTO AN APPROVED CONTAINER OR SPREAD ABSORBENT OVER SPILL AND SHOVEL PRODUCT/ABSORBENT MIXTURE INTO AN APPROVED CONTAINER. IF PRODUCT HAS DRIED SCRAPE UP AND PLACE IN AN APPROVED CONTAINER.

SECTION 7 - HANDLING AND STORAGE

HANDLING:
EMPTY DRUMS SHOULD BE COMPLETELY DRAINED, PROPERLY BUNGED AND PROMPTLY RETURNED TO A RECONDITONER, OR PROPERLY DISPOSED OF.

USE ONLY IN WELL VENTILATED AREA.

STORAGE:
KEEP FROM FREEZING. STORE AT TEMPERATURES BETWEEN 40F AND 75F.

PRECAUTIONARY STATEMENT: FOR INDUSTRIAL USE ONLY.

SECTION 8 - EXPOSURE CONTROLS AND PERSONAL PROTECTION

OCCUPATIONAL EXPOSURE LIMITS:

	ACGIH TLV	ACGIH TLV-C	ACGIH STEL	OSHA STEL	OSHA PEL
GLYCOL ETHER DB	N/EST	N/EST	N/EST	N/EST	N/EST

ENGINEERING CONTROLS:
USE LOCAL EXHAUST AS NEEDED TO MAINTAIN OCCUPATIONAL EXPOSURE LIMITS.

OTHER:
FACILITIES STORING OR UTILIZING ANY CHEMICAL SHOULD BE EQUIPPED WITH AN EYEWASH FACILITY AND A SAFETY SHOWER.

RESPIRATORY PROTECTION:
WHERE EXPOSURE LIMITS MAY BE EXCEEDED SELECT A NIOSH APPROVED RESPIRATOR WITH APPROPRIATE PROTECTION FACTOR AND CARTRIDGE FOR THE SPECIFIC CONTAMINENTS. FOLLOW REQUIREMENTS FOR RESPIRATORY PROTECTION IN OSHA 1910.134.

EYE PROTECTION:
CHEMICAL SPLASH GOGGLES (ANSI Z87.1 OR APPROVED EQUIVALENT).

SKIN PROTECTION: WHERE SKIN CONTACT CAN OCCUR, WEAR IMPERVIOUS GLOVES.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

FORM: LIQUID

APPEARANCE/COLOR: TAN

ODOR: MILD

SOLUBILITY (IN WATER): SOLUBLE IN WATER

pH VALUE: 2.5 - 3.50.

BOILING RANGE/POINT: 210. DEG. F

EVAPORATION RATE: SLOWER THAN n-BUTYL ACETATE

% VOLATILE: 48.%

SPECIFIC GRAVITY: 1.11

VOC: 5.6 G/L

SECTION 10 - STABILITY AND REACTIVITY

STABILITY: THIS PRODUCT IS STABLE

HAZARDOUS POLYMERIZATION: HAZARDOUS POLYMERIZATION WILL NOT OCCUR

INCOMPATIBILITY: STRONG ACIDS AND BASES.

HAZARDOUS DECOMPOSITION PRODUCTS:
OXIDES OF CARBON MAY BE RELEASED DURING COMBUSTION.

SECTION 11 - TOXICOLOGICAL INFORMATION

ACUTE AND CHRONIC HEALTH EFFECTS ARE NOT EXPECTED AS LONG AS GOOD INDUSTRIAL HYGIENE AND SAFETY PRECAUTIONS ARE FOLLOWED.

SECTION 12 - ECOLOGICAL INFORMATION

THIS FORMULATION HAS NOT BEEN TESTED FOR ENVIRONMENTAL EFFECTS.

SECTION 13 - DISPOSAL CONSIDERATIONS

WASTE DISPOSAL:
DISPOSAL OF THIS PRODUCT MUST COMPLY WITH ALL APPLICABLE FEDERAL, STATE AND LOCAL REGULATIONS.

CONTAINER DISPOSAL:
DISPOSAL OF THIS CONTAINER SHOULD COMPLY WITH ALL APPLICABLE FEDERAL, STATE AND LOCAL REGULATIONS.

SECTION 14 - TRANSPORT INFORMATION

UN NUMBER: NONE

UN PACK GROUP: N/A

UN CLASS: NONHAZ

ICAO/IATA CLASS: NONHAZARDOUS

IMDG CLASS: NONHAZARDOUS

SHIPPING NAME: NONHAZARDOUS

PACKAGING MAY NOT BE APPROVED FOR SHIPPING BY AIR. PLEASE CONTACT FRANKLIN INTERNATIONAL FOR FURTHER INFORMATION.

SECTION 15 - REGULATORY INFORMATION

SARA TITLE III SECTION 313:
THIS PRODUCT CONTAINS THE FOLLOWING TOXIC CHEMICALS SUBJECT TO THE REPORTING REQUIREMENTS OF SECTION 313 OF THE EMERGENCY PLANNING AND COMMUNITY RIGHT TO KNOW ACT OF 1986 AND OF 40 CFR 372:

CHEMICAL NAME	CAS NUMBER	PERCENT
GLYCOL ETHER DB	112-34-5	2.00

TSCA (TOXIC SUBSTANCES CONTROL ACT INVENTORY):
ALL COMPONENTS OF THIS PRODUCT ARE LISTED ON THE TSCA INVENTORY EXCEPT AS EXEMPTED.

PENNSYLVANIA:
PATENT PENDING. FOR FURTHER INFORMATION CONTACT FRANKLIN INTERNATIONAL.

NEW JERSEY:
PATENT PENDING. FOR FURTHER INFORMATION CONTACT FRANKLIN INTERNATIONAL.

SECTION 16 - OTHER INFORMATION

DISCLAIMER:
WHILE THE INFORMATION AND RECOMMENDATIONS SET FORTH HEREIN ARE BELIEVED TO BE ACCURATE AS OF THE DATA HEREOF, FRANKLIN INTERNATIONAL MAKES NO WARRANTY, EXPRESS OR IMPLIED, WITH RESPECT THERETO AND DISCLAIMS ALL LIABILITY FROM RELIANCE THEREON.

ITEM: 1FCC1 - Wood Glue 8 oz Tan FDA Approved

CLICK & FIND **MATERIAL SAFETY DATA SHEET (MSDS)** **MSDS: B1015**

This MSDS should be attached or kept with the respective product with which it is associated.

SAFETY DATA SHEET - B1015

As ted Grainger Item: 1FCC1 - Wood Glue 8 oz Tan FDA Approved

FRANKLIN INTERNATIONAL

MATERIAL SAFETY DATA SHEET

MSDS NAME: TITEBOND III ULTIMATE WOOD GLUE

MSDS NUMBER: 1413

REVISION DATE: 7/6/07

SECTION 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: TITEBOND III ULTIMATE WOOD GLUE

CAS NUMBER: NONE

HMIS HAZARD RATING:
HEALTH 1
FIRE 1
REACTIVITY 0

COMPANY IDENTIFICATION:
FRANKLIN INTERNATIONAL
2020 BRUCK STREET
COLUMBUS OH 43207

CONTACT: FRANKLIN TECHNICAL SERVICES

TELEPHONE/FAX:
(800) 877-4583
(614) 445-1493

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PRODUCT CLASS: CROSSLINK POLYVINYL ACETATE

PRODUCT USE: WATERPROOF WOOD GLUE

PRODUCT CODE: 56192

N: CONSTRUCTION ADHESIVES & SEALANTS

SECTION 2 - COMPOSITION AND INFORMATION ON INGREDIENTS

HAZARDOUS INGREDIENTS	CAS NUMBER	PERCENT
GLYCOL ETHER DB	112-34-5	2.00

OSHA PELS & ACGIH TLVS ARE LISTED IN SECTION 8 WHERE APPLICABLE.

SECTION 3 - HAZARD IDENTIFICATION

EMERGENCY OVERVIEW:
TAN COLORED WATER-BASED ADHESIVE. SLIPPERY IN THE WET STATE.

ROUTES OF ENTRY:
INHALATION: YES
SKIN: NO
EYE: YES
INGESTION: YES

INHALATION:
VAPORS AND/OR AEROSOLS WHICH MAY BE FORMED AT ELEVATED TEMPERATURE MAY BE IRRITATING TO EYES AND RESPIRATORY TRACT. NO REPORTED INCIDENTS OF ADVERSE HEALTH AFFECTS RESULTING FROM INHALATION OF VAPORS AT ROOM TEMPERATURE.

SKIN: PROLONGED OR REPEATED SKIN CONTACT CAN CAUSE IRRITATION.

EYE: SUBSTANCE MAY CAUSE MODERATE EYE IRRITATION.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE:
PREEXISTING SKIN AND RESPIRATORY CONDITIONS.

CARCINOGENICITY:
IARC: NO
NTP: NO
OSHA: NO

REPRODUCTIVE TOXICITY:
THIS PRODUCT HAS NOT BEEN EVALUATED FOR REPRODUCTIVE TOXICITY.

TARGET ORGANS: EYES AND SKIN.

SECTION 4 - FIRST AID MEASURES

INHALATION:
REMOVE PATIENT TO FRESH AIR, IF DISCOMFORT PERSISTS SEEK MEDICAL ATTENTION.

TION:
ISON CONTROL CENTER IMMEDIATELY. FOLLOW THEIR SPECIFIC INSTRUCTIONS.

SKIN:
WASH WITH SOAP AND WATER. CONTACT A PHYSICIAN IF IRRITATION DEVELOPS OR PERSISTS.

EYE:
HOLD EYELIDS APART AND FLUSH WITH PLENTY OF WATER FOR AT LEAST 15 MINUTES. SEEK MEDICAL ATTENTION.

SECTION 5 - FIRE-FIGHTING MEASURES

FLAMMABILITY CLASS (OSHA): IIIB

FLASH POINT: >200 F

EXPLOSIVE RANGE: NOT APPLICABLE

EXTINGUISHING MEDIA:
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HAZARDOUS COMBUSTION PRODUCTS: OXIDES OF CARBON.

FIRE FIGHTING PROCEDURES:
WEAR A NIOSH APPROVED SELF-CONTAINED BREATHING APPARATUS.

SECTION 6 - ACCIDENTAL RELEASE MEASURES

CONTAINMENT TECHNIQUES:
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CLEAN-UP:
IF POSSIBLE PUMP LIQUID INTO AN APPROVED CONTAINER OR SPREAD ABSORBENT OVER SPILL AND SHOVEL PRODUCT/ABSORBENT MIXTURE INTO AN APPROVED CONTAINER. IF PRODUCT HAS DRIED SCRAPE UP AND PLACE IN AN APPROVED CONTAINER.

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STORAGE:
KEEP FROM FREEZING. STORE AT TEMPERATURES BETWEEN 40F AND 75F.

PRECAUTIONARY STATEMENT: FOR INDUSTRIAL USE ONLY.

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OCCUPATIONAL EXPOSURE LIMITS:

	ACGIH TLV	ACGIH TLV-C	ACGIH STEL	OSHA STEL	OSHA PEL
GLYCOL ETHER DB	N/EST	N/EST	N/EST	N/EST	N/EST

ENGINEERING CONTROLS:
USE LOCAL EXHAUST AS NEEDED TO MAINTAIN OCCUPATIONAL EXPOSURE LIMITS.

OTHER:
FACILITIES STORING OR UTILIZING ANY CHEMICAL SHOULD BE EQUIPPED WITH AN EYEWASH FACILITY AND A SAFETY SHOWER.

RESPIRATORY PROTECTION:
WHERE EXPOSURE LIMITS MAY BE EXCEEDED SELECT A NIOSH APPROVED RESPIRATOR WITH APPROPRIATE PROTECTION FACTOR AND CARTRIDGE FOR THE SPECIFIC CONTAMINANTS. FOLLOW REQUIREMENTS FOR RESPIRATORY PROTECTION IN OSHA 1910.134.

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CHEMICAL SPLASH GOGGLES (ANSI Z87.1 OR APPROVED EQUIVALENT).

SKIN PROTECTION: WHERE SKIN CONTACT CAN OCCUR, WEAR IMPERVIOUS GLOVES.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

FORM: LIQUID

APPEARANCE/COLOR: TAN

ODOR: MILD

SOLUBILITY (IN WATER): SOLUBLE IN WATER

pH VALUE: 2.5 - 3.5 0.

BOILING RANGE/POINT: 210. DEG. F

EVAPORATION RATE: SLOWER THAN n-BUTYL ACETATE

% VOLATILE: 48.%

SPECIFIC GRAVITY: 1.11

VOC: 5.6 G/L

SECTION 10 - STABILITY AND REACTIVITY

STABILITY: THIS PRODUCT IS STABLE

HAZARDOUS POLYMERIZATION: HAZARDOUS POLYMERIZATION WILL NOT OCCUR

INCOMPATIBILITY: STRONG ACIDS AND BASES.

HAZARDOUS DECOMPOSITION PRODUCTS:
OXIDES OF CARBON MAY BE RELEASED DURING COMBUSTION.

SECTION 11 - TOXICOLOGICAL INFORMATION

ACUTE AND CHRONIC HEALTH EFFECTS ARE NOT EXPECTED AS LONG AS GOOD INDUSTRIAL HYGIENE AND SAFETY PRECAUTIONS ARE FOLLOWED.

SECTION 12 - ECOLOGICAL INFORMATION

THIS FORMULATION HAS NOT BEEN TESTED FOR ENVIRONMENTAL EFFECTS.

SECTION 13 - DISPOSAL CONSIDERATIONS

SPOSAL:
OF THIS PRODUCT MUST COMPLY WITH ALL APPLICABLE FEDERAL, STATE AND
GULATIONS.

CONTAINER DISPOSAL:
DISPOSAL OF THIS CONTAINER SHOULD COMPLY WITH ALL APPLICABLE FEDERAL, STATE AND LOCAL REGULATIONS.

SECTION 14 - TRANSPORT INFORMATION

UN NUMBER: NONE

UN PACK GROUP: N/A

UN CLASS: NONHAZ

ICAO/IATA CLASS: NONHAZARDOUS

IMDG CLASS: NONHAZARDOUS

SHIPPING NAME: NONHAZARDOUS

PACKAGING MAY NOT BE APPROVED FOR SHIPPING BY AIR. PLEASE CONTACT FRANKLIN INTERNATIONAL FOR FURTHER INFORMATION.

SECTION 15 - REGULATORY INFORMATION

SARA TITLE III SECTION 313:

THIS PRODUCT CONTAINS THE FOLLOWING TOXIC CHEMICALS SUBJECT TO THE REPORTING REQUIREMENTS OF SECTION 313 OF THE EMERGENCY PLANNING AND COMMUNITY RIGHT TO KNOW ACT OF 1986 AND OF 40 CFR 372:

CHEMICAL NAME	CAS NUMBER	PERCENT
GLYCOL ETHER DB	112-34-5	2.00

TSCA (TOXIC SUBSTANCES CONTROL ACT INVENTORY):
ALL COMPONENTS OF THIS PRODUCT ARE LISTED ON THE TSCA INVENTORY EXCEPT AS EXEMPTED.

PENNSYLVANIA:
PATENT PENDING. FOR FURTHER INFORMATION CONTACT FRANKLIN INTERNATIONAL.

NEW JERSEY:
PATENT PENDING. FOR FURTHER INFORMATION CONTACT FRANKLIN INTERNATIONAL.

SECTION 16 - OTHER INFORMATION

MER:
IE INFORMATION AND RECOMMENDATIONS SET FORTH HEREIN ARE BELIEVED TO BE URATE AS OF THE DATA HEREOF, FRANKLIN INTERNATIONAL MAKES NO WARRANTY, EXPRESS OR IMPLIED, WITH RESPECT THERETO AND DISCLAIMS ALL LIABILITY FROM RELIANCE THEREON.

ITEM: 1TLZ9 - All Purpose Glue 2 Oz 4 Sq Ft Cove

CLICK & FIND **MATERIAL SAFETY DATA SHEET (MSDS)** **MSDS: A9981**

This MSDS should be attached or kept with the respective product with which it is associated.

SAFETY DATA SHEET - A9981

Associated Grainger Item: 1TLZ9 - All Purpose Glue 2 Oz 4 Sq Ft Cove

GORILLA GLUE

INCREDIBLY STRONG 100 % WATERPROOF

MATERIAL SAFETY DATA SHEET

DATA PREPARED: JANUARY 26,2007

DATA REVISED: 1ST EDITION

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND THE COMPANY

PRODUCT NAME: NEW STRONGER-FASTER GORILLA GLUE(R*)

PRODUCT TYPE: POLYURETHANE ADHESIVE FOR WOOD AND WOOD SUBSTRATES

DISTRIBUTOR:
THE GORILLA GLUE COMPANY
4550 RED BANK EXPRESSWAY
CINCINNATI, OH 45227

TEL: (513) 271-3300

FAX: (513) 527-3742

EMERGENCY:

DURING BUSINESS HOURS:
THE GORILLA GLUE COMPANY: (800) 966-3458.

OUTSIDE BUSINESS HOURS:
PROSAR INTERNATIONAL POISON CENTER: (800) 420-7186.

2. COMPOSITION/INFORMATION ON INGREDIENTS

CHEMICAL NAME	CAS NO.	% CONTENT
URETHANE PREPOLYMER	TRADE SECRET	40-50
POLYMERIC MDI*	9016-87-9	50-60

*POLYMERIC MDI IS A MIXTURE OF 4,4'-DIPHENYLMETHANE-DIISOCYANATE, ISOMERS AND HOMOLOGUES.

3. HAZARDS IDENTIFICATION

HARMFUL BY INHALATION. IRRITATING TO EYES, RESPIRATORY SYSTEM AND SKIN. MAY CAUSE SENSITIZATION BY INHALATION AND SKIN CONTACT.

4. FIRST AID MEASURES

INHALATION:

IF AEROSOL OR VAPOR IS INHALED IN HIGH CONCENTRATIONS:
MOVE AFFECTED INDIVIDUAL TO FRESH AIR AND KEEP HIM WARM, LET HIM REST. IF THERE IS DIFFICULTY IN BREATHING; CALL A DOCTOR.

EYE CONTACT:
FLUSH EYES FOR AT LEAST 10 MINUTES WHILE HOLDING EYELIDS OPEN. CONTACT A DOCTOR.

SKIN CONTACT:
REMOVE CONTAMINATED CLOTHES IMMEDIATELY, AND WASH SKIN WITH A CLEANSER BASED ON POLYETHYLENE GLYCOL OR WITH PLENTY OF WARM WATER AND SOAP. CONSULT A DOCTOR IN THE EVENT OF A SKIN REACTION.

INGESTION:
PRODUCT IS NOT INTENDED TO BE INGESTED OR EATEN. IF THIS PRODUCT IS INGESTED, SEVERE IRRITATION OF THE GASTROINTESTINAL TRACT MAY OCCUR, AND SHOULD BE TREATED SYMPTOMATICALLY. DO NOT INDUCE THE PATIENT TO VOMIT. CALL A DOCTOR OR AMBULANCE.

5. FIRE FIGHTING MEASURES

UPPER FLAMMABLE LIMIT (UFL): NOT DETERMINED
LOWER FLAMMABLE LIMIT (LFL): NOT DETERMINED

NFPA:
HEALTH 3
FLAMMABILITY 1
REACTIVITY 1

HMIS:
HEALTH 3
FLAMMABILITY 1
REACTIVITY 1

GENERAL FIRE HAZARDS:
DOWN-WIND PERSONNEL MUST BE EVACUATED. DO NOT RESEAL CONTAMINATED CONTAINERS; A CHEMICAL REACTION GENERATING CARBON DIOXIDE GAS PRESSURE MAY OCCUR RESULTING IN RUPTURE OF THE CONTAINER. DENSE SMOKE IS EMITTED WHEN PRODUCT IS BURNED WITHOUT SUFFICIENT OXYGEN. WHEN USING WATER SPRAY, FOAM OVER MAY OCCUR WHEN PRODUCT TEMPERATURE REACHES THE BOILING POINT OF WATER AND THE REACTION FORMING CARBON DIOXIDE WILL ACCELERATE. MDI VAPOR AND OTHER GASES MAY BE GENERATED BY THERMAL DECOMPOSITION.

SPECIAL HAZARDS IN FIRE:
IN CASE OF FIRE, FORMATION OF CARBON MONOXIDE, CARBON DIOXIDE, NITROGEN OXIDE, ISOCYANATE VAPOR, AND TRACES OF HYDROGEN CYANIDE IS POSSIBLE.

EXTINGUISHING MEDIA:
CARBON DIOXIDE, DRY POWDER, AND FOAM. IN CASES OF LARGE SCALE FIRES, ALCOHOL-RESISTANT FOAMS ARE PREFERRED. IF WATER IS USED, IT SHOULD BE USED IN VERY LARGE QUANTITIES. THE REACTION BETWEEN WATER AND ISOCYANATE MAY BE VIGOROUS.

REQUIRED SPECIAL PROTECTIVE EQUIPMENT FOR FIRE-FIGHTERS:
FIRE FIGHTERS SHOULD WEAR FULL-FACE, SELF-CONTAINED BREATHING APPARATUS AND IMPERVIOUS PROTECTIVE CLOTHING. FIRE FIGHTERS SHOULD AVOID INHALING ANY COMBUSTION PRODUCTS.

6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS:
WEAR FULL-PROTECTIVE CLOTHING AND RESPIRATORY PROTECTION AS REQUIRED MAINTAINING EXPOSURES DURING CLEAN-UP BELOW THE APPLICABLE EXPOSURE LIMITS.

ENVIRONMENTAL PRECAUTIONS: DO NOT DISCHARGE SPILLAGE INTO DRAINS.

CLEAN-UP PROCEDURES:
REMOVE MECHANICALLY; COVER REMAINDERS WITH WET ABSORBENT MATERIAL (E.G. SAND, EARTH, SAWDUST). AFTER APPROX. ONE HOUR TRANSFER TO WASTE CONTAINER AND DO NOT SEAL (EVOLUTION OF CO2). KEEP DAMP IN A SAFE VENTILATED AREA FOR SEVERAL DAYS.

7. HANDLING AND STORAGE

HANDLING:
AVOID CONTACT WITH SKIN AND EYE. DO NOT SMOKE, EAT AND DRINK AT THE WORK-PLACE.

VENTILATION:
IF VAPOR OR MIST IS GENERATED DURING PROCESSING OR USE, LOCAL EXHAUST VENTILATION SHOULD BE PROVIDED TO MAINTAIN EXPOSURES BELOW THE APPLICABLE LIMITS.

PERSONAL PROTECTION: SEE SECTION 8.

STORAGE:
KEEP PRODUCT AWAY FROM SOURCES OF ALCOHOLS, AMINES, OR OTHER MATERIALS THAT REACT WITH ISOCYANATES.AVOID PROLONGED HEATING ABOVE 160 DEG. C/320 DEG. F. STORE THE PRODUCT IN TIGHTLY CLOSED CONTAINERS IN A WELL-VENTILATED PLACE AND IN ACCORDANCE WITH NATIONAL REGULATIONS. KEEP OUT OF REACH OF CHILDREN.

8. EXPOSURE CONTROLS/ PERSONAL PROTECTION

FOR EXPOSURE CONTROLS SEE SECTION 15.

COMPONENT EXPOSURE LIMITS:

NAME	CAS NO.	TYPE	PPM	MG/M3
4,4'-DIPHENYLMETHANE DIISOCYANATE	101-68-8	OSHA PEL	0.02	0.2
		ACGIH (TLV-TWA)	0.005	

PERSONAL PROTECTION EQUIPMENT:

GENERAL:
WEAR SUITABLE PROTECTIVE CLOTHING, PROTECTIVE GLOVES AND PROTECTIVE GOGGLES/MASK.

SUITABLE MATERIALS FOR SAFETY GLOVES:

NATURAL RUBBER/NATURAL LATEX - NR (>/= 0.5 MM)

POLYCHLOROPRENE - CR (>/= 0.5MM)

NITRILE RUBBER - NBR (>/= 0.35MM)

BUTYL RUBBER - IIR (>/= 0.5 MM)

FLUORINATED RUBBER - FKM (>/= 0.4 MM)

RESPIRATORY PROTECTION:
REQUIRED IN INSUFFICIENTLY VENTILATED WORKING AREAS AND DURING SPRAYING. AN AIR-FED MASK, OR FOR SHORT PERIODS OF WORK, A COMBINATION OF CHARCOAL FILTER AND PARTICULATE FILTER IS RECOMMENDED.

EYES PROTECTION:
CHEMICAL GOGGLES OR FULL FACE SHIELDS ARE RECOMMENDED. AN EYEWASH FOUNTAIN AND SAFETY SHOWER SHOULD BE AVAILABLE IN THE WORK AREA. CONTACT LENSES SHOULD NOT BE WORN WHEN WORKING WITH THIS PRODUCT.

SKIN PROTECTION:

WEAR SPECIAL GLOVES AND WORKING CLOTHES TO AVOID SKIN IRRITATION OR SENSITIZATION.

DEPENDING ON OPERATION, CHEMICAL RESISTANT BOOTS, OVERSHOES, AND APRON MAY ALSO BE REQUIRED.

SUITABLE MATERIALS FOR CLOTHING:
POLYETHYLENE/ETHYLENE VINYL ALCOHOL LAMINATES (PE/VAL) HAS BEEN REPORTED AS AN EFFECTIVE MATERIAL OF CONSTRUCTION FOR CHEMICAL PROTECTIVE CLOTHING FOR MDI.

9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL FORM: LIQUID

COLOR: DARK-BROWN

ODOR: EARTHY, MUSTY

BOILING POINT: >300 DEG. C

FLASH POINT: >250 DEG. C

VAPOR PRESSURE: <0,00001 MBAR AT 20 DEG. C (DIPHENYL-METHANE-DIISOCYANATE)

SPECIFIC GRAVITY: APPROX. 1,14 G/CM3 AT 20 DEG. C

VISCOSITY: 4,000 - 7,000 MPA.S AT 25 DEG. C (BROOKFIELD SP. 6/20 RPM)

SOLUBILITY IN WATER: REACTS

VOC: 0%

10. STABILITY AND REACTIVITY

STABILITY:
THE PRODUCT IS STABLE UNDER THE RECOMMENDED HANDLING AND STORAGE CONDITIONS (SEE SECTION 7).

HAZARDOUS DECOMPOSITION PRODUCTS:
BY EXPOSURE TO HIGH TEMPERATURE, HAZARDOUS DECOMPOSITION PRODUCTS MAY DEVELOP, SUCH AS ISOCYANATE VAPOR AND MIST, CARBON DIOXIDE, CARBON MONOXIDE, NITROGEN OXIDE, AND TRACES OF HYDROGEN CYANIDE.

HAZARDOUS REACTION:
EXOTHERMIC REACTION WITH AMINES AND ALCOHOLS; REACTS WITH WATER FORMING HEAT, CO2, AND INSOLUBLE POLYUREA.THE COMBINED EFFECT OF CO2 AND HEAT CAN PRODUCE ENOUGH PRESSURE TO RUPTURE A CLOSED CONTAINER.

11. TOXICOLOGICAL INFORMATION

ACUTE TOXICITY:
LD50 ORAL, RAT:>5000 MG/KG

SKIN AND MUCOUS MEMBRANE COMPATIBILITY, RABBIT:
SKIN 8 HOUR'S EXPOSURE - SLIGHT REDDENING.

EYES: MODERATE REDDENING AND SLIGHT SWELLING.

INHALATION:
OVER-EXPOSURE MAY CAUSE IRRITATING EFFECTS ON NOSE THROAT AND RESPIRATORY TRACT.

SKIN CONTACT:
PROLONGED OR REPEATED CONTACT MAY RESULT IN TANNING AND IRRITATING EFFECTS.

EYE CONTACT: OVER-EXPOSURE MAY CAUSE IRRITATING EFFECTS ON EYES.

12. ECOLOGICAL INFORMATION

DO NOT ALLOW THE PRODUCT TO ESCAPE INTO WATERS, WASTEWATER OR SOIL.

BIODEGRADABILITY: 0% AFTER 28 DAYS

ACUTE FISH TOXICITY: LC0 >1,000 MG/L (96 HRS.)

TOXICITY FOR DAPHNIA: EC50 >1,000 MG/L (24 HRS.)

BACTERIA TOXICITY: EC50 >100 MG/L (3 HRS.)

13. DISPOSAL CONSIDERATIONS

THE PRODUCT REMNANTS ARE CLASSIFIED AS CHEMICAL WASTE. DISPOSE OF WASTE ACCORDING TO LOCAL, STATE, FEDERAL, AND PROVINCIAL ENVIRONMENTAL REGULATIONS.

14. TRANSPORTATION INFORMATION

THIS PREPARATION IS NOT CLASSIFIED DANGEROUS ACCORDING TO INTERNATIONAL TRANSPORT REGULATIONS
ADR/RID/IMDG/IATA.

OTHER INFORMATION:
THIS PRODUCT IS NOT DANGEROUS CARGO. IRRITATING TO SKIN AND MUCOUS MEMBRANES. KEEP SEPARATED FROM FOODSTUFFS.

15. REGULATION INFORMATION

THIS PRODUCT AND ITS COMPONENTS ARE LISTED ON THE TSCA 8(B) INVENTORY.

SYMBOL: HARMFUL OR IRRITANT

HAZARD DESIGNATION: Xn - HARMFUL.

CONTAINS: 4,4'- DIPHENYLMETHANE DIISOCYANATE (MDI), ISOMERE.

R-PHRASES:

R20: HARMFUL BY INHALATION.

R36/37/38: IRRITATING TO EYES, RESPIRATORY SYSTEM AND SKIN.

R42/43: MAY CAUSE SENSITIZATION BY INHALATION AND SKIN CONTACT.

S-PHRASES:

S23: DO NOT BREATHE GAS/FUMES/VAPOR/SPRAY.

S36/37: WEAR SUITABLE PROTECTIVE CLOTHING AND GLOVES.

S45:
IN CASE OF ACCIDENT OR IF YOU FEEL UNWELL, SEEK MEDICAL ADVICE IMMEDIATELY.

(SHOW THE LABEL WHERE POSSIBLE).

ANY EXISTING NATIONAL REGULATIONS ON THE HANDLING OF ISOCYANATES MUST BE OBSERVED.

16. OTHER INFORMATION

THE INFORMATION HEREIN IS PRESENTED IN GOOD FAITH AND BELIEVED TO BE ACCURATE AS OF THE EFFECTIVE DATE GIVEN. HOWEVER, NO WARRANTY, EXPRESSED OR IMPLIED, IS GIVEN. IT IS THE BUYER'S RESPONSIBILITY TO ENSURE THAT ITS ACTIVITIES COMPLY WITH FEDERAL, STATE OR PROVINCIAL, AND LOCAL LAWS.

MSDS - "NAPA"

NAPA Labeled Products

NAPA

Part: 7651399 Line: BK Desc: BELT DRE

MATERIAL SAFETY DATA SHEET

Effective Date: none Revision Date: none

AE-183B Belt Dressing

Code: AJC Page: 1

Section 1 - Product and Company Identification

PRODUCT NAME AE-183B Belt Dressing

MANUFACTURER'S NAME:
American Jetway Corporation
P.O. Box 126
Wayne, MI 48184

EMERGENCY TELEPHONE NUMBER
(800)424-9300

MISCELLANEOUS INFORMATION
(313)721-5930

Section 2 - Hazardous Ingredients

HAZARDOUS COMPONENTS (Specific Chemical Identity: Common Name(s))	OSHA PEL	ACGIH TLV	STEL	% Optional
Asphalt CAS# 8052-42-4		5mg/m3	10mg3	<50
Aliphatic Solvent CAS# 8052-42-3	100 ppm	100 ppm	200	>30
Isobutane CAS# 75-28-5	Unknown	800 ppm	N/A	<20

Section 3 - Hazards Indentification

ROUTE(S) OF ENTRY:
INHALATION: Yes
SKIN : Yes
INGESTION : Yes

HEALTH HAZARDS (Acute and Chronic): May cause dizziness or narcosis in high vapor concentrations. Will cause defatting of skin. Effects are reversible. Long term exposure (years) to vapor may cause lung, liver, or kidney damage. The solvents listed have been reported to affect the central nervous system.

CARCINOGENICITY:
NTP : N/A
IARC MONOGRAPHS: N/A
OSHA REG. : N/A

SIGNS AND SYMPTOMS OF EXPOSURE:
INHALATION: Difficulty in breathing.
SKIN : Redness
INGESTION : Vomiting
Headache, dizziness, skin irritation, dermatitis

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY OVEREXPOSURE:
Respiratory and skin conditions.

MATERIAL SAFETY DATA SHEET

Effective Date: none Revision Date: none

AE-183B Belt Dressing

Code: AJC Page: 2

Section 4 - First Aid Measures

EMERGENCY AND FIRST AID PROCEDURES:
Give oxygen-do not induce vomiting-gastric lavage-wash eyes and skin with water.

Section 5 - Firefighting Measures

FLASH POINT (METHOD USED): -120 to 100F

FLAMMABLE LIMITS:
LEL: N/A
UEL: N/A

EXTINGUISHING MEDIA: Use water fog, dry chemical or carbon dioxide

SPECIAL FIRE FIGHTING PROCEDURES: Fire fighters should wear NIOSH approved positive pressure self-contained breathing apparatus. Aerosol cans may rupture when heated.

UNUSUAL FIRE AND EXPLOSION HAZARDS: Heated cans may burst.

Section 6 - Environmental Release Measures

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:
Use absorbent sweeping compound to soak up material. Put into container. Dispose as hazardous waste.

Section 7 - Handling and Storage

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING:
Keep away from heat, sparks, or open flame. Store at temperature below 120 deg F.

OTHER PRECAUTIONS: Aerosol cans may burst from impact and or high temperatures.

Section 8 - Exposure Controls/Personal Protection

RESPIRATORY PROTECTION (Specify Type): Self contained breathing appatatus if above TLV limits are exceeded.

VENTILATION:
LOCAL EXHAUST : Yes
MECHANICAL(General): None
SPECIAL : None
OTHER : None

PROTECTIVE GLOVES: None required if spraying.

EYE PROTECTION: Safety glasses or goggles.

coveralls.ı

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WORK/HYGIENIC PRACTICES: Do not smoke while using. Wash hands after use.ı
Wash thoroughly after use!!ı

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Section 9 - Physical and Chemical Propertiesı

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BOILING POINT RANGE : 10.90ı
VAPOR PRESSURE PSIG @ 70F: 31ı
VAPOR DENSITY(AIR=1)ı
(Heavier than air) : Unknownı
SOLUBILITY IN WATER : NILı
SPECIFIC GRAVITY(H2O=1) : .8269ı
MELTING POINT-LIQUID : Unknownı
EVAPORATION RATEı
(Water=1) : Unknownı
APPEARANCE AND ODOR : Black liquid with characteristic odorı

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Section 10 - Stability and Reactivityı

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STABILITY: Stableı
CONDITIONS TO AVOID: N/Aı

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INCOMPATIBILITY (Materials to Avoid): May attack some plastics and rubbers.ı

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HAZARDOUS DECOMPOSITION OR BYPRODUCTS: Noneı

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HAZARDOUS POLYMERIZATION: Will not occur.ı
CONDITIONS TO AVOID: N/Aı

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Section 11 - Toxicological Informationı

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Not available.ı

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MATERIAL SAFETY DATA SHEETı

Effective Date: none Revision Date: noneı

AE-183B Belt Dressingı

Code: AJC Page: 4ı

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Section 12 - Ecological Informationı

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Not available.ı

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Section 13 - Disposal Considerationsı

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WASTE DISPOSAL METHOD: Dispose of waste in accordance with applicableı
federal, state and local requirements.ı

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Section 14 - Transport Informationı

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DOT SHIPPING: Consumer Commodity ORM-Dı

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Section 15 - Regulatory Informationı

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Part: 7651399 Line: BK Desc: BELT DRE

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Section 16 - Other Information1

*** End of Report ***

Automotive

NAPA

Part: 35032 Line: NBF Desc: BRK FLU

MATERIAL SAFETY DATA SHEET

Effective Date: 11-15-99 Revision Date: none

NAPA Brake Fluid DOT 3

Code: CST Page: 1

Section 1 - Product and Company Identification

PRODUCT NAME: [redacted]

MANUFACTURER'S NAME:
Coastal Uni-Lube Inc.
9 Greenway Plaza
Houston, TX 77046

EMERGENCY TELEPHONE NUMBER
(713)877-1400

MISCELLANEOUS INFORMATION

Section 2 - Hazardous Ingredients

Product Name	CAS #	Wt.	OSHA PEL	ACGIH TLV	Other	Units
Coastal S. H. D. Brake Fluid Mixture DOT3		100%	NA	NA		
Ingredients Blend of various Glycol Ethers, Glycol and Polyglycol	NA-P	100%	NA	NA	NA	PPM

NA= Not Available
NA-P= Information is claimed proprietary by supplier
STEL= Short Term Exposure Limit; 15 Minutes

MATERIAL SAFETY DATA SHEET

Effective Date: none Revision Date: none

NAPA Brake Fluid DOT 3

Code: CST Page: 2

Section 3 - Hazards Indentification

This product has not been tested as a whole to determine its specific hazards. The information provided in this section is based on health hazard information on the product components.

Effects of overexposure:

Acute:

EYES: May cause severe eye irritation and chemical burns.

SKIN: Slightly irritating to the skin. Harmful amounts may be absorbed through the skin with extensive and prolonged contact.

INHALATION: Exposure to vapors or mist may result in irritation of the respiratory tract, headache, drowsiness and dizziness. High concentrations of ethylene glycol ethers may be lethal.

INGESTION: May cause irritation of the mouth, throat, and the respiratory tract, abdominal discomfort, dizziness, lumbar pain, CNS depression, kidney and liver damage.

Chronic: Prolonged or repeated contact may result in toxic amounts being absorbed through the skin.

Carcinogenicity: NTP: No IARC Monographs: No OSHA Regulated: No

Section 4 - First Aid Measures

Eye Contact: Flush thoroughly with large amounts of water for at least 15 minutes, including underthe eye lids. Contact a physician immediately, preferably an opthamologist. Speed and thoroughness in rinsing eyes are important to avoid permanent injury.

Skin Contact: Remove contaminated clothing. Wash affected areas with soap and water. If irritation occurs, get medical help. Discard contaminated shoes.

Inhalation: Remove to fresh air. If breathing has stopped, apply artificial respiration. Get immediate medical attention.

Ingestion: Never give anything by mouth to an unconsious or convulsing person. Have the affected person, if conscious, drink 1 to 2 glasses of water, then induce vomiting. Get immediate medical attention.

Section 5 - Firefighting Measures

Flash Point: >200 F

Flammable Limits in Air % by Vol.: Lower: N.A. Upper: N.A.

Autoignition Temperature: N.A.

Extinguishing Media: Dry chemical, foam, carbon dioxide

Special Fire Fighting Procedure: Water spray may be used to keep fire-exposed containers cool, preventing pressure build up and explosion. Firefighters should wear self-contained breathing apparatus.

Unusual Fire or Explosion Hazard: May ignite when sufficient heat is applied.

Section 6 - Environmental Release Measures

Spill Procedures: Remove sources of heat or ignition including internal combustion engines and power tools. Remove spill with vacuum trucks or pump and soak up residue with an absorbent. Use approved respirator where occupational exposure limits may be exceeded.

Section 7 - Handling and Storage

Store in tightly closed aontainers in an dry place, away from incompatible materials or sources of heat, ignition or strong oxidizers. Ground and bond all transfer and storage equipment. Empty containers may contain residue (liquid and/or vapor) and can be dangerous. Do not pressurize, cut, puncture, incinerate, weld, braze, solder, drill, grind or expose such containers to heat, flame, sparks or other sources of ignition.

Part: 35032 Line: NBF Desc: BRK FLU

Section 8 - Exposure Controls/Personal Protection

Eye Protection: Remove contact lenses and wear chemical safety goggles where contact with liquid or mist may occur.

Skin Protection: Wear impervious gloves when contact with skin may occur. Use face shield where splashing may occur. Wash with soap and water before eating, drinking and smoking. Launder contaminated clothing before reuse.

Inhalation: Use approved respiratory protective equipment for cleaning large spills or entry into large tanks, vessels or other confined spaces or in situations where exposure may exceed occupational exposure levels.

Ventilation: Provide adequate general and local exhaust ventilation: (1) to keep mist and vapors below occupational exposure levels; and (2) to prevent the formation of an oxygen deficient atmosphere, particularly in a confined space.

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MATERIAL SAFETY DATA SHEET

Effective Date: none Revision Date: none

NAPA Brake Fluid DOT 3

Code: CST Page: 4

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Section 9 - Physical and Chemical Properties

Boiling Point 760 mmHg:	401 F	Melting Point:	N.A.
Vapor Pressure mmHg @ 100F:	<0.1	Vapor Density (air=1):	N.A.
Solubility in H2O %:	Soluble	pH:	N.A.
Specific Gravity(H2O):	1.02-1.04	Evaporation Rate:	
% Volatile by Volume:	N.A.	(ethyl ether=1):	N.A.
Viscosity (method, temp):	N.A.		

Appearance: Clear liquid Odor: Mild ether odor

N.A. = Not Available

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Section 10 - Stability and Reactivity

Stability: Stable

Hazardous Polymerization: Will not occur.

Conditions to Avoid/Incompatibility: Strong oxidizing agents, heat, spark, flame and build-up of static electricity.

Hazardous Decomposition Products: Carbon monoxide, carbon dioxide, water and/or oxygenated hydrocarbons.

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Section 11 - Toxicological Information

Persons with preexisting resperatory, liver, kidney, eye or skin diseases may be adversely affected by this product. Ethylene glycol and ethylene glycol ethers have produced dose-related teratogenic effects and maternal toxicity in laboratory animals. Exposure to vapors of ethylene glycol ethers have caused testicular atrophy in laboratory animals.

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Section 12 - Ecological Information

No information.

Section 13 - Disposal Considerations

Waste Disposal: Dispose through a licensed waste disposal company. Follow federal, state and local regulations.

Section 14 - Transport Information

Not applicable.

MATERIAL SAFETY DATA SHEET

Effective Date: none Revision Date: none

NAPA Brake Fluid DOT 3

Code: CST Page: 5

Section 15 - Regulatory Information

SARA TITLE III INFORMATION

Section 311/312 Hazard Categorization

Acute	Chronic	Fire	Pressure	Reactive
X	X			

SARA Hazardous Substances

Ingredient	CAS No.	%, wt	Sec 313	Sec 302	RQ, lb	TPQ, lb
Ethylene Glycol	110-80-5	NA	X			
Glycol Ethers	various	<75	X			

Key: Sec 313 = Toxic Chemicals, Section 313
Sec 302 = Extremely Hazardous Substances (EHS)
RQ = Reportable Quantity of EHS
TPQ = Threshold Planning Quantity of EHS

Section 16 - Other Information

CALIFORNIA PROPOSITION 65 WARNING

Chemicals known to the State of California to cause cancer, birth defects or other reproductive harm may be found in the petroleum products. Although it is possible to sufficiently refine the petroleum products to remove the potential for cancer, we are advising that one or more of the listed chemicals may be present in some detectable quantities. Read and follow directions and use care when handling these petroleum products.

THIS INFORMATION RELATES ONLY TO THE SPECIFIC MATERIAL DESIGNATED AND MAY NOT BE VALID FOR SUCH MATERIAL USED IN COMBINATION WITH ANY OTHER MATERIALS OR IN ANY PROCESS. SUCH INFORMATION IS TO THE BEST OF THIS COMPANY'S KNOWLEDGE AND BELIEVED ACCURATE AND RELIABLE AS OF THE DATE INDICATED. HOWEVER, NO REPRESENTATION, WARRANTY OR GUARANTEE IS MADE AS TO THE ACCURACY, RELIABILITY OR COMPLETENESS. IT IS THE USER'S RESPONSIBILITY TO SATISFY HIMSELF AS TO THE SUITABLENESS AND COMPLETENESS OF SUCH INFORMATION FOR HIS OWN PARTICULAR USE.

Part: 35032 Line: NBF Desc: BRK FLU

*** End of Report ***

NAPA

Part: 7000 Line: MAC Desc: DE-ICER

1

MATERIAL SAFETY DATA SHEET

1

The Valvoline Company Page 001

1

Date Prepared: 01/14/02

1

Date Printed: 12/01/04

1

MSDS No: 503.0177148-008.005

1

[redacted]

1

1

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

1

Material Identity

1

Product Name: [redacted]

1

SAP Material No: NM7000

1

General or Generic ID: SOLVENT BLEND

1

Company	Telephone Numbers	
The Valvoline Company	Emergency:	1-800-274-5263
P.O. Box 14000		
Lexington, KY 40512	Information:	1-859-357-7206

1

1

2. COMPOSITION/INFORMATION ON INGREDIENTS

1

Ingredient(s)	CAS Number	% (by weight)
METHYL ALCOHOL	67-56-1	62.0
ETHYLENE GLYCOL	107-21-1	6.0
CARBON DIOXIDE	124-38-9	0.0- 8.0

1

1

3. HAZARDS IDENTIFICATION

1

Potential Health Effects

1

Eye

1

Can cause eye irritation.

1

Skin

1

May cause mild skin irritation. Prolonged or repeated contact may

dry and crack the skin. Although rare, skin contact with ethylene glycol may cause allergic skin reaction (delayed skin rash which may be followed by blistering, scaling and other skin effects). Passage through the skin may add to toxic effects from breathing or swallowing.

MATERIAL SAFETY DATA SHEET

The Valvoline Company

Page 002

Date Prepared: 01/14/02

Date Printed: 12/01/04

MSDS No: 503.0177148-008.005

MAC'S WINDSHIELD DE-ICER 7000

Swallowing

Swallowing this material may be harmful.

Inhalation

Breathing of vapor or mist is possible. Breathing small amounts of this material during normal handling is not likely to cause harmful effects. Breathing large amounts may be harmful.

Symptoms of Exposure

stomach or intestinal upset (nausea, vomiting, diarrhea), irritation (nose, throat, airways), central nervous system excitation (giddiness, liveliness, light-headed feeling) followed by central nervous system depression (dizziness, drowsiness, weakness, fatigue, nausea, headache, unconsciousness) and other central nervous system effects, involuntary eye movement, visual impairment (including blindness), and death.

Target Organ Effects

Overexposure to this material (or its components) has been suggested as a cause of the following effects in laboratory

animals, and may aggravate preexisting disorders of these organs
1
in humans: liver abnormalities, spleen damage, nervous system
1
damage, eye damage, lung damage, brain damage, kidney damage,
1
visual impairment, kidney damage, liver damage.
1
Developmental Information
1
Ethylene glycol has caused birth defects in animal studies at high
1
oral doses.
1
Cancer Information
1
No data
1
Other Health Effects
1
No data
1
Primary Route(s) of Entry
1
Inhalation, Skin absorption, Skin contact.
1

1

1

MATERIAL SAFETY DATA SHEET

1

The Valvoline Company Page 003

1

Date Prepared: 01/14/02

1

Date Printed: 12/01/04

1

MSDS No: 503.0177148-008.005

1

MAC'S WINDSHIELD DE-ICER 7000

1

1

4. FIRST AID MEASURES

1

Eyes

1

If symptoms develop, immediately move individual away from
1
exposure and into fresh air. Flush eyes gently with water for at
1
least 15 minutes while holding eyelids apart; seek immediate
1
medical attention.
1
Skin
1
Remove contaminated clothing. Wash exposed area with soap and
1
water. If symptoms persist, seek medical attention. Launder

clothing before reuse.

Swallowing

Seek medical attention. If individual is drowsy or unconscious, do not give anything by mouth; place individual on the left side with the head down. Contact a physician, medical facility, or poison control center for advice about whether to induce vomiting. If possible, do not leave individual unattended.

Inhalation

If symptoms develop, immediately move individual away from exposure and into fresh air. Seek immediate medical attention; keep person warm and quiet. If person is not breathing, begin artificial respiration. If breathing is difficult, administer oxygen.

Note to Physicians

This product contains methanol which can cause intoxication and central nervous system depression. Methanol is metabolized to formic acid and formaldehyde. These metabolites can cause metabolic acidosis, visual disturbances and blindness. Since metabolism is required for these toxic symptoms, their onset may be delayed from 6 to 30 hours following ingestion. Ethanol competes for the same metabolic pathway and has been used to prevent methanol metabolism. Ethanol administration is indicated in symptomatic patients or at blood methanol concentrations above 20 ug/dl. Methanol is effectively removed by hemodialysis. This product contains ethylene glycol. Ethanol decreases the metabolism of ethylene glycol to toxic metabolites. Ethanol should be administered as soon as possible in cases of severe poisoning since the elimination half-life of ethylene glycol is 3 hours. If medical care will be delayed several hours, give the

MATERIAL SAFETY DATA SHEET

The Valvoline Company

Page 004

Date Prepared: 01/14/02

Date Printed: 12/01/04

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MAC'S WINDSHIELD DE-ICER 7000

patient three to four 1-ounce oral "shots" of 86-proof or higher whiskey before or during transport to the hospital. Fomepizole (4-methylpyrazole) is an effective antagonist of alcohol dehydrogenase, and as such, may be used as an antidote in the treatment of ethylene glycol poisoning. Hemodialysis effectively removes ethylene glycol and its metabolites from the body. Effects of acute ethylene glycol poisoning appear in three fairly distinct stages. The initial stage occurs shortly after exposure, lasts 6-12 hours, and is characterized by central nervous system effects (transient exhilaration, nausea, vomiting, and in severe cases, coma, convulsions, and possible death. The second stage lasts from 12-36 hours after exposure and is initiated by the onset of coma. This phase is characterized by tachypnia, tachycardia, mild hypotension, cyanosis, and in severe cases, pulmonary edema, bronchopneumonia, cardiac enlargement, and congestive failure. The final stage occurs 24-72 post-exposure and is characterized by renal failure ranging from a mild increase in blood urea nitrogen and creatinine followed by recovery to complete anuria with acute tubular necrosis that can lead to death. Oxaluria is found in most cases. The most significant laboratory finding in ethylene glycol intoxication is severe metabolic acidosis. Preexisting disorders of the following organs (or organ systems) may be aggravated by exposure to this material: skin.

1
5. FIRE FIGHTING MEASURES
1
Flash Point
1
Not applicable
1
Explosive Limit
1
(for component) Lower 3.2 Upper 36.5 %
1
Autoignition Temperature
1
No data
1

1

1

MATERIAL SAFETY DATA SHEET

1
The Valvoline Company Page 005
1
Date Prepared: 01/14/02
1
Date Printed: 12/01/04
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MSDS No: 503.0177148-008.005
1
MAC'S WINDSHIELD DE-ICER 7000
1

1
Hazardous Products of Combustion
1
May form: carbon dioxide and carbon monoxide.
1
Fire and Explosion Hazards
1
Vapors are heavier than air and may travel along the ground or be
1
moved by ventilation and ignited by heat, pilot lights, other
1
flames and ignition sources at locations distant from material
1
handling point. Never use welding or cutting torch on or near
1
drum (even empty) because product (even just residue) can ignite
1
explosively.
1
Extinguishing Media
1
alcohol foam, water fog.
1
Fire Fighting Instructions
1
Wear a self-contained breathing apparatus with a full facepiece
1
operated in the positive pressure demand mode with appropriate

turn-out gear and chemical resistant personal protective
1
equipment. Refer to the personal protective equipment section of
1
this MSDS.
1
NFPA Rating
1
Health - 1, Flammability - 3, Reactivity - 0
1

1
6. ACCIDENTAL RELEASE MEASURES
1
Small Spill
1
Absorb liquid on vermiculite, floor absorbent, or other absorbent
1
material and transfer to hood.
1
Large Spill
1
Eliminate all ignition sources (flares, flames including pilot
1
lights, electrical sparks). Persons not wearing protective
1
equipment should be excluded from area of spill until clean-up has
1
been completed. Stop spill at source. Prevent from entering
1
drains, sewers, streams or other bodies of water. Prevent from
1
spreading. If runoff occurs, notify authorities as required.
1
Pump or vacuum transfer spilled product to clean containers for
1
recovery. Absorb unrecoverable product. Transfer contaminated
1
absorbent, soil and other materials to containers for disposal.
1
Prevent run-off to sewers, streams or other bodies of water. If
1

1

1

1
run-off occurs, notify proper authorities as required, that a

spill has occured.

1

1

7. HANDLING AND STORAGE

1

Handling

1

Containers of this material may be hazardous when emptied. Since

1

emptied containers retain product residues (vapor, liquid, and/or

1

solid), all hazard precautions given in the data sheet must be

1

observed.

1

Storage

1

Not applicable

1

1

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

1

Eye Protection

1

Not required under normal conditions of use.

1

Skin Protection

1

Not required under normal conditions of use. Other protective

1

equipment: not required under normal conditions of use.

1

Respiratory Protections

1

Not required under normal conditions of use.

1

Engineering Controls

1

Not required under normal conditions of use.

1

Exposure Guidelines

1

Component

1

1

METHYL ALCOHOL (67-56-1)

1

OSHA VPEL 200.000 ppm - TWA ((Skin))

1

OSHA VPEL 250.000 ppm - STEL ((Skin))

1

ACGIH TLV 200.000 ppm - TWA ((Skin))

1

ACGIH TLV 250.000 ppm - STEL ((Skin))

1

1

Part: 7000 Line: MAC Desc: DE-ICER

MATERIAL SAFETY DATA SHEET

1
The Valvoline Company Page 007
1
Date Prepared: 01/14/02
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MSDS No: 503.0177148-008.005
1
MAC'S WINDSHIELD DE-ICER 7000
1

1
ETHYLENE GLYCOL (107-21-1)
1
OSHA VPEL 50.000 ppm - Ceiling
1
ACGIH TLV 100.000 mg/m3 - Ceiling as an aerosol
1
CARBON DIOXIDE (124-38-9)
1
OSHA VPEL 10000.000 ppm - TWA
1
OSHA VPEL 30000.000 ppm - STEL
1
ACGIH TLV 5000.000 ppm - TWA
1
ACGIH TLV 30000.000 ppm - STEL
1

1
9. PHYSICAL AND CHEMICAL PROPERTIES
1
Boiling Point
1
(for component) 147.0 F (63.8 C) @ 760 mmHg
1
Vapor Pressure
1
(for component) 97.680 mmHg @ 68.00 F
1
Specific Vapor Density
1
> 1.000 @ AIR=1
1
Specific Gravity
1
.875 - .895 @ 77.00 F
1
Liquid Density
1
7.160 lbs/gal @ 77.00 F
1
.885 kg/l @ 25.00 C
1
Percent Volatiles (Including Water)
1
No data
1
Evaporation Rate

FASTER THAN ETHYL ETHER

MATERIAL SAFETY DATA SHEET

The Valvoline Company

Page 008

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MAC'S WINDSHIELD DE-ICER 7000

Appearance

CLEAR

State

LIQUID

Physical Form

No data

Color

COLORLESS

Odor

No data

pH

Not applicable

Flame Propagation

< 18.000 in

---

10. STABILITY AND REACTIVITY

Hazardous Polymerization

Product will not undergo hazardous polymerization.

Hazardous Decomposition

May form: carbon dioxide and carbon monoxide.

Chemical Stability

Stable.

Incompatibility

Avoid contact with: strong oxidizing agents.

MATERIAL SAFETY DATA SHEET

The Valvoline Company

Page 009

Date Prepared: 01/14/02

Date Printed: 12/01/04

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MAC'S WINDSHIELD DE-ICER 7000

11. TOXICOLOGICAL INFORMATION

No data

12. ECOLOGICAL INFORMATION

No data

13. DISPOSAL CONSIDERATION

Waste Management Information

Destroy by liquid incineration. Dispose of in accordance with all applicable local, state and federal regulations.

14. TRANSPORT INFORMATION

DOT Information - 49 CFR 172.101

DOT Description:

AEROSOLS,2.1,UN 1950

Container/Mode:

CASES/SURFACE - NO EXCEPTIONS

NOS Component:

None

RQ (Reportable Quantity) - 49 CFR 172.101

Product Quantity (lbs)	Component
8112	METHANOL

MATERIAL SAFETY DATA SHEET

The Valvoline Company

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MAC'S WINDSHIELD DE-ICER 7000

15. REGULATORY INFORMATION

US Federal Regulations

CERCLA RQ - 40 CFR 302.4

Component	Component
METHYL ALCOHOL	5000
ETHYLENE GLYCOL	5000

SARA 302 Components - 40 CFR 355 Appendix A

None

Section 311/312 Hazard Class - 40 CFR 370.2

Immediate(X) Delayed(X) Fire(X) Reactive( ) Sudden Release of Pressure( )

SARA 313 Components - 40 CFR 372.65

Section 313 Component(s)	CAS Number
METHANOL	67-56-1
ETHYLENE GLYCOL	107-21-1

International Regulations

Inventory Status

Not determined

State and Local Regulations

California Proposition 65

None

New Jersey RTK Label Information

METHYL ALCOHOL	67-56-1
ETHYLENE GLYCOL	107-21-1
CARBON DIOXIDE	124-38-9

Pennsylvania RTK Label Information

METHANOL	67-56-1
1,2-ETHANEDIOL	107-21-1
CARBON DIOXIDE	124-38-9

MATERIAL SAFETY DATA SHEET

The Valvoline Company

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MAC'S WINDSHIELD DE-ICER 7000

16. OTHER INFORMATION

The information accumulated herein is believed to be accurate but is not warranted to be whether originating with the company or not. Recipients are advised to confirm in advance of need that the information is current, applicable, and suitable to their circumstances.

is not warranted to be whether originating with the company or not. Recipients are advised to confirm in advance of need that the information is current, applicable, and suitable to their

circumstances.

not. Recipients are advised to confirm in advance of need that the information is current, applicable, and suitable to their circumstances.

*** End of Report ***

NAPA

Part: 7651525 Line: BK Desc: GRIN OIL

==========1

MATERIAL SAFETY DATA SHEET1

Effective Date: none Revision Date: none1

NAPA Cutting & Grinding Oil (Plastic, 1 Gallon)1

Code: AGS Page: 11

==========1

Section 1 - Product and Company Identification1

1

PRODUCT NAME: [redacted]

1

MANUFACTURER'S NAME: EMERGENCY TELEPHONE NUMBER1

AGS Company1
2651 Hoyt St.1
Muskegon Hts. , MI 49444 MISCELLANEOUS INFORMATION1
(616)733-2101 1

1

1

==========1

Section 2 - Hazardous Ingredients1

1

HAZARDOUS INGREDIENT	CAS NO.	WGT. %	TLV1
Mineral Oil *	Not Assigned	80-90	5 cu. m.1

1

1

NOTE: * Mineral oil used is severely hydrotreated or solvent extracted oil1
which does not require labeling as a carcinogen.1

1

==========1

Section 3 - Hazards Indentification1

1

EYES: May cause irritation.1

1

SKIN: May cause irritation.1

1

INGESTION: Not known; however, if aspirated into lungs chemical pneumonitis1
may develop.1

1

INHALATION: May cause irritation.1

1

OTHER EFFECTS: None known.1

1

==========1

Section 4 - First Aid Measures1

1

EYES: Flush with water for at least 15 minutes. Get medical attention if1
irritation occurs.1

1

SKIN: Wash with soap and water. If irritation occurs get medical1
attention.1

1

INGESTION: Do not induce vomiting. Get medical attention.1

1

INHALATION: Remove to fresh air. Administer oxygen or artificial1
respiration as needed. Get medical attention.1

1

==========1

MATERIAL SAFETY DATA SHEET1

Effective Date: none Revision Date: none1

NAPA Cutting & Grinding Oil (Plastic, 1 Gallon)1

Code: AGS Page: 21

Part: 7651525 Line: BK Desc: GRIN OIL

Section 5 - Firefighting Measures1

1
FLASH POINT : Not Determined1
METHOD :1
AUTO IGNITION TEMP: Not Determined1
1
FLAMMABLE LIMITS:1
LEL: Not Determined1
UEL: Not Determined1
1
EXTINGUISHING MEDIA: Dry chemical, foam, carbon dioxide. Foam and water1
fog may cause frothing.1
1
SPECIAL PROCEDURES: Use protective gear, including self-contained breathing1
apparatus.1
1
UNUSUAL HAZARDS: Mists or sprays may ignite.1
1
==========1

Section 6 - Environmental Release Measures1

1
SPILL PROCEDURE: Contain spill and eliminate all ignition sources. Absorb1
on an inert material. Prevent entry into sewers and1
waterways.1
1
==========1

Section 7 - Handling and Storage1

1
CONDITIONS TO AVOID: Keep away from ignition sources.1
1
==========1

Section 8 - Exposure Controls/Personal Protection1

1
VENTILATION REQUIREMENTS: Suitable to maintain a mist concentration below1
TLV.1
1
EYES : Yes1
GLOVES : Yes1
CLOTHING : No1
RESPIRATORY: No1
1
OTHER: Protective clothing, eye wash and safety shower in area.1
1
==========1

MATERIAL SAFETY DATA SHEET1
Effective Date: none Revision Date: none1
NAPA Cutting & Grinding Oil (Plastic, 1 Gallon)1
Code: AGS Page: 31
==========1

Section 9 - Physical and Chemical Properties1

1
pH SUPPLIED : Not Determined1
pH DILUTED : Not Determined1
WATER SOLUBILITY: Emulsifiable1
SPECIFIC GRAVITY: (Water=1) 0.941
MELTING POINT : Not Applicable1
BOILING POINT : 500F1
% VOLATILES : Not Determined1
VAPOR PRESSURE : Not Determined1
VAPOR DENSITY : Not Determined1
EVAPORATION RATE: Not Determined1

Part: 7651525 Line: BK Desc: GRIN OIL

1
==========1
Section 10 - Stability and Reactivity1
1
UNSTABLE AND/OR AUTO REACTIVE: Stable1
1
INCOMPATIBLE MATERIALS: Strong oxidizing agents.1
1
HAZARDOUS DECOMPOSITION PRODUCTS: Oxides of carbon and sulfur.1
1
==========1
Section 11 - Toxicological Information1
1
Not available.1
1
==========1
Section 12 - Ecological Information1
1
Not available.1
1
==========1
Section 13 - Disposal Considerations1
1
DISPOSAL METHOD: Removal by an approved, licensed waste hauler.1
1
EPA WASTE I.D. NO.: Not Reg.1
1
==========1
Section 14 - Transport Information1
1
Not available.1
1
==========1
Section 15 - Regulatory Information1
1
Not available.1
1
==========1
MATERIAL SAFETY DATA SHEET1
Effective Date: none Revision Date: none1
NAPA Cutting & Grinding Oil (Plastic, 1 Gallon)1
Code: AGS Page: 41
==========1
Section 16 - Other Information1
1
TRADE NAME : NAPA Cutting & Grinding Oil1
COMMON NAME : Cutting & Grinding Oil1
CONATINER SIZE: Plastic, 5 Gallons1
1
NFPA: HEALTH : 01
FLAMMABILITY : 11
REACTIVITY : 01
SPECIFIC HAZARD: N/A1
1
HMIS: HEALTH : 01
FLAMMABILITY : 11
REACTIVITY : 01
PROTECTIVE EQUIPMENT: A1
1
***The information herein is given in good faith,1
no warranty, expressed or implied, is made.***1

Part: 7651525 Line: BK Desc: GRIN OIL

*** End of Report ***

NAPA

Part: 6300 Line: MAC Desc: PENE OIL

1

MATERIAL SAFETY DATA SHEET

1

The Valvoline Company Page 001

1

Date Prepared: 10/14/03

1

Date Printed: 12/01/04

1

MSDS No: 503.0240649-005.001

1

AEROSOL PENETRATING OIL DEMOISTURIZER

1

1

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

1

Material Identity

1

Product Name: [redacted]

1

SAP Material No: NM6300

1

General or Generic ID: LUBRICANT

1

Company	Telephone Numbers	
The Valvoline Company	Emergency:	1-800-274-5263
P.O. Box 14000		
Lexington, KY 40512	Information:	1-859-357-7206

1

1

2. COMPOSITION/INFORMATION ON INGREDIENTS

1

Ingredient(s)	CAS Number	% (by weight)
KEROSENE	8008-20-6	74.0- 84.0
SOLVENT-DEWAXED HEAVY PARAFFINIC PETROLEUM D	64742-65-0	6.0- 16.0
CARBON DIOXIDE	124-38-9	1.0- 11.0
ETHYLENE GLYCOL MONOBUTYL ETHER	111-76-2	1.0- 11.0

1

1

3. HAZARDS IDENTIFICATION

1

Potential Health Effects

1

Eye

1

Can cause eye irritation.

1

Skin

Can cause skin irritation. Prolonged or repeated contact may dry and crack the skin. Additional symptoms of skin contact may include: skin blistering, acne, Passage of this material through the skin may be harmful.

MATERIAL SAFETY DATA SHEET

The Valvoline Company

Page 002

Date Prepared: 10/14/03

Date Printed: 12/01/04

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AEROSOL PENETRATING OIL DEMOISTURIZER

Swallowing

Swallowing small amounts of this material during normal handling is not likely to cause harmful effects. Swallowing large amounts may be harmful. This material can get into the lungs during swallowing or vomiting. This results in lung inflammation and other lung injury.

Inhalation

It is possible to breathe this material under certain conditions of handling and use (for example, during heating, spraying, or stirring). Breathing this material may be harmful. Symptoms usually occur at air concentrations higher than the recommended exposure limits (See Section 8).

Symptoms of Exposure

Signs and symptoms of exposure to this material through breathing, swallowing, and/or passage of the material through the skin may include: stomach or intestinal upset (nausea, vomiting, diarrhea) irritation (nose, throat, airways), lung irritation, central nervous system depression (dizziness, drowsiness, weakness,

fatigue, nausea, headache, unconsciousness), loss of coordination,
1
confusion, difficult breathing, irregular heartbeat, blood in the
1
urine, blood abnormalities (breakage of red blood cells), narcosis
1
(dazed or sluggish feeling), kidney damage, liver damage,
1
convulsions, coma, and death.
1
Target Organ Effects
1
Acute lethal exposure to ethylene glycol monobutyl ether in animal
1
studies has resulted in congestion of organs including kidney,
1
spleen, and lung. Exposure to this material (or a component) has
1
been found to cause kidney damage in male rats. The mechanism by
1
which this toxicity occurs is specific to the male rat and the
1
kidney effects are not expected to occur in humans. Overexposure
1
to this material (or its components) has been suggested as a cause
1
of the following effects in laboratory animals, and may aggravate
1
preexisting disorders of these organs in humans: blood
1
abnormalities.
1

1

1

MATERIAL SAFETY DATA SHEET

1
The Valvoline Company Page 003
1
Date Prepared: 10/14/03
1
Date Printed: 12/01/04
1
MSDS No: 503.0240649-005.001
1
AEROSOL PENETRATING OIL DEMOISTURIZER
1

1
Developmental Information
1
No data
1
Cancer Information
1
This material is not listed as a carcinogen by the International
1
Agency for Research on Cancer, the National Toxicology Program, or
1
the Occupational Safety and Health Administration. This product

(or a component) is a petroleum-derived material. Similar materials and certain compounds occurring naturally in petroleum oils have been shown to cause skin cancer in laboratory animals following repeated exposure without washing or removal.

Other Health Effects

No data

Primary Route(s) of Entry

Inhalation, Skin absorption, Skin contact, Eye contact, Ingestion.

---

4. FIRST AID MEASURES

Eyes

If symptoms develop, immediately move individual away from exposure and into fresh air. Flush eyes gently with water for at least 15 minutes while holding eyelids apart; seek immediate medical attention.

Skin

Immediately flush skin with water for at least 15 minutes while removing contaminated clothing and shoes. Seek immediate medical attention. Wash clothing before reuse and discard contaminated shoes. Remove contaminated clothing. Flush exposed area with large amounts of water. If skin is damaged, seek immediate medical attention. If skin is not damaged and symptoms persist, seek medical attention. Launder clothing before reuse.

1
Swallowing
1
Seek medical attention. If individual is drowsy or unconscious,
1
do not give anything by mouth; place individual on the left side
1
with the head down. Contact a physician, medical facility, or
1
poison control center for advice about whether to induce vomiting.
1
If possible, do not leave individual unattended.
1
Inhalation
1
If symptoms develop, immediately move individual away from
1
exposure and into fresh air. Seek immediate medical attention;
1
keep person warm and quiet. If person is not breathing, begin
1
artificial respiration. If breathing is difficult, administer
1
oxygen.
1
Note to Physicians
1
Inhalation of high concentrations of this material, as could occur
1
in enclosed spaces or during deliberate abuse, may be associated
1
with cardiac arrhythmias. Sympathomimetic drugs may initiate
1
cardiac arrhythmias in persons exposed to this material. This
1
material is an aspiration hazard. Potential danger from aspiration
1
must be weighed against possible oral toxicity (See Section 3 -
1
Swallowing) when deciding whether to induce vomiting. Acute
1
aspiration of large amounts of oil-laden material may produce a
1
serious aspiration pneumonia. Patients who aspirate these oils
1
should be followed for the development of long-term sequelae.
1
Repeated aspiration of small quantities of mineral oil can produce
1
chronic inflammation of the lungs (i.e. lipoid pneumonia) that may
1
progress to pulmonary fibrosis. Symptoms are often subtle and
1
radiological changes appear worse than clinical abnormalities.
1
Occasionally, persistent cough, irritation of the upper
1
respiratory tract, shortness of breath with exertion, fever, and
1
bloody sputum occur. Inhalation exposure to oil mists below

current workplace exposure limits is unlikely to cause pulmonary
1
abnormalities. Preexisting disorders of the following organs (or
1
organ systems) may be aggravated by exposure to this material:
1
skin, lung (for example, asthma-like conditions), liver, kidneys,
1
blood-forming system, Individuals with pre-existing heart
1
disorders may be more susceptible to arrhythmias (irregular
1
heartbeats) if exposed to high concentrations of this material.
1

1

1

MATERIAL SAFETY DATA SHEET

1

The Valvoline Company Page 005

1

Date Prepared: 10/14/03

1

Date Printed: 12/01/04

1

MSDS No: 503.0240649-005.001

1

AEROSOL PENETRATING OIL DEMOISTURIZER

1

1

5. FIRE FIGHTING MEASURES

1

Flash Point

1

160.0 F (71.1 C) TCC

1

Explosive Limit

1

(for component) Lower .7 Upper 10.6 %

1

Autoignition Temperature

1

No data

1

Hazardous Products of Combustion

1

May form: carbon dioxide and carbon monoxide, various
1
hydrocarbons.

1

Fire and Explosion Hazards

1

Material is highly volatile and readily gives off vapors which may
1
travel along the ground or be moved by ventilation and ignited by
1
pilot lights, other flames, sparks, heaters, smoking, electric
1
motors, static discharge, or other ignition sources at locations

distant from material handling point. Never use welding or
1
cutting torch on or near drum (even empty) because product (even
1
just residue) can ignite explosively.
1
Extinguishing Media
1
regular foam, carbon dioxide, dry chemical.
1
Fire Fighting Instructions
1
Water may be used to keep fire-exposed containers cool until fire
1
is out. Wear a self-contained breathing apparatus with a full
1
facepiece operated in the positive pressure demand mode with
1
appropriate turn-out gear and chemical resistant personal
1
protective equipment. Refer to the personal protective equipment
1
section of this MSDS.
1
NFPA Rating
1
Health - 1, Flammability - 3, Reactivity - 0
1

1

1

MATERIAL SAFETY DATA SHEET

1
The Valvoline Company Page 006
1
Date Prepared: 10/14/03
1
Date Printed: 12/01/04
1
MSDS No: 503.0240649-005.001
1
AEROSOL PENETRATING OIL DEMOISTURIZER
1

1
6. ACCIDENTAL RELEASE MEASURES
1
Small Spill
1
Eliminate all sources of ignition such as flares, flames
1
(including pilot lights), and electrical sparks. Absorb liquid on
1
vermiculite, floor absorbent or other absorbent material. Persons
1
not wearing proper personal protective equipment should be
1
excluded from area of spill.
1
Large Spill

Prevent run-off to sewers, streams or other bodies of water. If
1
run-off occurs, notify proper authorities as required, that a
1
spill has occured. Persons not wearing protective equipment
1
should be excluded from area of spill until clean-up has been
1
completed. Eliminate all ignition sources (flares, flames,
1
including pilot lights,electrical sparks).
1

1
7. HANDLING AND STORAGE
1
Handling
1
Containers of this material may be hazardous when emptied. Since
1
emptied containers retain product residues (vapor, liquid, and/or
1
solid), all hazard precautions given in the data sheet must be
1
observed. Avoid prolonged or repeated contact.
1
Storage
1
Under oxidation conditions, peroxides may be formed. If they
1
become concentrated, these peroxides may present an explosion
1
hazard. Do not store near extreme heat, open flame, or sources of
1
ignition.
1

1
8. EXPOSURE CONTROLS/PERSONAL PROTECTION
1
Eye Protection
1
Chemical splash goggles in compliance with OSHA regulations are
1
advised; however, OSHA regulations also permit other type safety
1
glasses. Consult your safety representative.
1

1

1

CARG004013

AEROSOL PENETRATING OIL DEMOISTURIZER
1

1
Skin Protection
1
Wear resistant gloves (consult your safety equipment supplier).
1
To prevent repeated or prolonged skin contact, wear impervious
1
clothing and boots.
1
Respiratory Protections
1
If workplace exposure limit(s) of product or any component is
1
exceeded (See Exposure Guidelines), a NIOSH/MSHA approved air
1
supplied respirator is advised in absence of proper environmental
1
control. OSHA regulations also permit other NIOSH/MSHA
1
respirators (negative pressure type) under specified conditions
1
(consult your industrial hygienist). Engineering or
1
administrative controls should be implemented to reduce exposure.
1
Engineering Controls
1
Provide sufficient mechanical (general and/or local exhaust)
1
ventilation to maintain exposure below TLV(s).
1
Exposure Guidelines
1
Component
1

1
KEROSENE (8008-20-6)
1
ACGIH TLV 200.000 mg/m3 - TWA ((Skin))
1
SOLVENT-DEWAXED HEAVY PARAFFINIC PETROLEUM DISTILLATE (64742-65-0)
1
OSHA VPEL 5.000 mg/m3 - TWA
1
ACGIH TLV 5.000 mg/m3 - TWA
1
CARBON DIOXIDE (124-38-9)
1
OSHA VPEL 10000.000 ppm - TWA
1
OSHA VPEL 30000.000 ppm - STEL
1
ACGIH TLV 5000.000 ppm - TWA
1
ACGIH TLV 30000.000 ppm - STEL
1
ETHYLENE GLYCOL MONOBUTYL ETHER (111-76-2)

OSHA VPEL 25.000 ppm - TWA ((Skin))
1
ACGIH TLV 25.000 ppm - TWA ((Skin))
1

1

1

MATERIAL SAFETY DATA SHEET

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The Valvoline Company Page 008
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Date Printed: 12/01/04
1
MSDS No: 503.0240649-005.001
1
AEROSOL PENETRATING OIL DEMOISTURIZER
1

1
9. PHYSICAL AND CHEMICAL PROPERTIES
1
Boiling Point
1
(for component) > 300.0 F (148.8 C)
1
Vapor Pressure
1
(for component) 5.000 mmHg @ F
1
Specific Vapor Density
1
> 1.000 @ AIR=1
1
Specific Gravity
1
.830 @ 77.00 F
1
Liquid Density
1
6.920 lbs/gal @ 77.00 F
1
.830 kg/l @ 25.00 C
1
Percent Volatiles (Including Water)
1
No data
1
Evaporation Rate
1
FASTER THAN ETHYL ETHER
1
Appearance
1
No data
1
State
1
LIOUID

Physical Form

No data

Color

No data

MATERIAL SAFETY DATA SHEET

The Valvoline Company Page 009

Date Prepared: 10/14/03

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AEROSOL PENETRATING OIL DEMOISTURIZER

Odor

No data

pH

Not applicable

Flame Propagation

> 18.000 in

---

10. STABILITY AND REACTIVITY

Hazardous Polymerization

Product will not undergo hazardous polymerization.

Hazardous Decomposition

May form: carbon dioxide and carbon monoxide, various hydrocarbons.

Chemical Stability

Stable.

Incompatibility

Avoid contact with: heat, strong acids, strong alkalies, strong oxidizing agents.

1

11. TOXICOLOGICAL INFORMATION

1

No data

1

1

1

MATERIAL SAFETY DATA SHEET

1

The Valvoline Company Page 010

1

Date Prepared: 10/14/03

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Date Printed: 12/01/04

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1

AEROSOL PENETRATING OIL DEMOISTURIZER

1

1

12. ECOLOGICAL INFORMATION

1

No data

1

1

13. DISPOSAL CONSIDERATION

1

Waste Management Information

1

Dispose of in accordance with all applicable local, state and

1

federal regulations.

1

1

14. TRANSPORT INFORMATION

1

DOT Information - 49 CFR 172.101

1

DOT Description:

1

AEROSOLS,2.1,UN 1950

1

Container/Mode:

1

CASES/SURFACE - NO EXCEPTIONS

1

NOS Component:

1

None

1

RQ (Reportable Quantity) - 49 CFR 172.101

1

Not applicable

1

15. REGULATORY INFORMATION

US Federal Regulations

CERCLA RQ - 40 CFR 302.4

None

MATERIAL SAFETY DATA SHEET

The Valvoline Company Page 011

Date Prepared: 10/14/03

Date Printed: 12/01/04

MSDS No: 503.0240649-005.001

AEROSOL PENETRATING OIL DEMOISTURIZER

SARA 302 Components - 40 CFR 355 Appendix A

None

Section 311/312 Hazard Class - 40 CFR 370.2

Immediate(X) Delayed(X) Fire(X) Reactive( ) Sudden Release of Pressure( )

SARA 313 Components - 40 CFR 372.65

Section 313 Component(s)	CAS Number
ETHYLENE GLYCOL MONOBUTYL ETHER	111-76-2

International Regulations

Inventory Status

Not determined

State and Local Regulations

California Proposition 65

None

New Jersey RTK Label Information

KEROSENE	8008-20-6
CARBON DIOXIDE	124-38-9

Part: 6300 Line: MAC Desc: PENE OIL

2-BUTOXY ETHANOL	111-76-2

Pennsylvania RTK Label Information

KEROSINE (PETROLEUM)	8008-20-6
CARBON DIOXIDE	124-38-9
ETHANOL, 2-BUTOXY-	111-76-2

16. OTHER INFORMATION

The information accumulated herein is believed to be accurate but is not warranted to be whether originating with the company or not. Recipients are advised to confirm in advance of need that the information is current, applicable, and suitable to their circumstances.

*** End of Report ***

MSDS - Paint

CARG004020

Paints & Related

Paint

The [redacted] Corporation
Material Safety Data Sheet

1. PRODUCT AND COMPANY IDENTIFICATION

Material Identification

Product ID: **400.0000236.076**
Product Name: [redacted]
Product Use: Paint product.
Date Published: 2004/10/13
Revision Date: 2004/06/25

Company Identification
The Valspar Corporation - Architectural Coatings Division
1000 Lake Road
Medina, OH 44256
Manufacturer's Phone: 1-330-725-4511

24-Hour Medical Emergency Phone: 1-888-345-5732

2. COMPOSITION / INFORMATION ON HAZARDOUS INGREDIENTS

Common Name CAS #	Approx Wt%	Chemical name
XYLENE (W/ ANTI-STATIC) 1330-20-7	5 - 10	Xylenes (o-, m-, p- isomers)
DIMETHYL KETONE 67-64-1	35 - 40	ACETONE
PROPANE 74-98-6	15 - 20	Propane
TALC 14807-96-6	10 - 15	TALC (MG3H2(SI03)4)
BUTANE 106-97-8	5 - 10	Butane
ISOPROPYL ALCOHOL 67-63-0	1 - 5	Isopropyl alcohol
METHYL ETHYL KETONE 78-93-3	1 - 5	Methyl ethyl ketone
ETHYL 3-ETHOXYPROPIONATE 763-69-9	1 - 5	Ethyl 3-ethoxypropionate
ISOBUTYL ACETATE 110-19-0	1 - 5	Isobutyl acetate
Trade Secret : PROPRIETARY RESIN	1 - 5	PROPRIETARY RESIN
ETHYLBENZENE 100-41-4	1 - 5	Ethyl benzene
CARBON BLACK 1333-86-4	.1 - 1	CARBON BLACK

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CARG004022

CRYSTALLINE SILICA 14808-60-7	.1 - 1	QUARTZ (Si02)

If this section is blank there are no hazardous components per OSHA guidelines.

3. HAZARDS IDENTIFICATION

Primary Routes of Exposure:
Inhalation
Ingestion
Skin absorption

Emergency Overview:
This section not in use.

This product contains ingredients that may contribute to the following potential acute health effects:

Inhalation Effects:
Harmful if inhaled. May affect the brain, nervous system, or respiratory system, causing dizziness, headache, nausea or respiratory irritation.

Eye Contact:
Causes eye irritation.

Skin Contact:
May cause moderate skin irritation.

Acute Ingestion:
None known

Other Effects:
May cause kidney damage. May cause liver damage.

This product contains ingredients that may contribute to the following potential chronic health effects:

Notice: Reports have associated repeated and prolonged occupational overexposure to solvents with permanent brain and nervous system damage. Intentional misuse by deliberately concentrating and inhaling the contents may be harmful or fatal. Prolonged exposure to respirable crystalline quartz silica may cause delayed chronic injury (silicosis).Prolonged and/or repeated contact can result in skin irritation. May cause skin drying with prolonged exposure.Possible cancer hazard. Contains ingredients which may cause cancer based on animal data. Risk of cancer depends on duration and level of exposure.

See Section 11 for toxicological information about Mutagens, Teratogens and Carcinogens.

If this section is blank, no information is available.

4. FIRST AID MEASURES

Inhalation:
If affected by inhalation, move victim to fresh air. If symptoms persist, seek medical attention.

Eye Contact:
In case of contact, or suspected contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention immediately after flushing.

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CARG004023

Skin Contact:
In case of contact, immediately flush skin with plenty of soap and water for at least 15 minutes. If irritation persists get medical attention. Remove contaminated clothing and shoes. Wash clothing before reuse. Thoroughly clean contaminated shoes.

Ingestion:
If swallowed, contact medical personnel immediately to determine best course of action.

Medical conditions aggravated by exposure: Any respiratory or skin condition.

5. FIRE FIGHTING MEASURES

Flash point (Fahrenheit):	-31° F (-35° C) TCC/PM
Lower explosive limit:	2 %
Upper explosive limit:	13 %
Autoignition temperature:	Not available.° F (° C)
Sensitivity to impact:	No.
Sensitivity to static discharge:	Subject to static discharge hazards. Please see bonding and grounding information in Section 7.
Hazardous combustion products:	See Section 10.

Unusual fire and explosion hazards:
Contaminated rags, wipes, saw dust, etc., may catch fire spontaneously. Store waste under water in closed metal containers until disposed of in compliance with applicable regulations. Contains oxidizable materials.

Extinguishing media:
Carbon dioxide, dry chemical, foam and/or water fog.

Fire fighting procedures:
Use water spray to cool nearby containers and structures exposed to fire. Firefighters should be equipped with self-contained breathing apparatus and turn out gear.

6. ACCIDENTAL RELEASE MEASURES

Action to be taken if material is released or spilled:
Ventilate area. Avoid breathing of vapors. Use self-containing breathing apparatus or airmask for large spills in a confined area. Wipe, scrape or soak up in an inert material and put in a container for disposal. See section 5, "Unusual Fire and Explosion Hazards", for proper container and storage procedures. Remove sources of ignition. Remove with inert absorbent and non sparking tools. Avoid contact with eyes.

7. HANDLING AND STORAGE

Precautions to be taken in handling and storage:
Keep away from heat, sparks, and flames. Keep container closed when not in use. Do not store above 120 degrees F. (49 degrees C). Based on flash point and vapor pressure, suitable storage should be provided in accordance with OSHA regulation 1910.106, Ontario OH&S regulation 851 section 22. Empty containers may contain product residue, including flammable or explosive vapors. Do not cut, puncture or weld on or near container. All label warnings must be observed until the container has been commercially cleaned or reconditioned. If the product is used near or above the flashpoint, an ignition hazard may be present. Activities, uses, or operations which liberate vapor (such as mixing or free fall of liquids) may also present an ignition hazard. Please ensure containers and other interconnected equipment are properly bonded and grounded at all times.

8. PERSONAL PROTECTIVE EQUIPMENT AND EXPOSURE CONTROLS

Personal Protective Equipment

Eye and face protection:
Avoid contact with eyes. Wear chemical goggles if there is the possibility of contact or splashing in the eye.

Skin protection:
Appropriate chemical resistant gloves should be worn.To prevent skin contact wear protective clothing covering all exposed areas.

Respiratory protection:
If exposure cannot be controlled below applicable limits, use the appropriate NIOSH approved respirator such as an air purifying respirator with organic vapor cartridge and dust/mist filter. Consult the respirator manufacturer's literature to ensure that the respirator will provide adequate protection. Read and follow all respirator manufacturer's instructions.

Ventilation
Required when spraying or applying in confined area. Ventilation equipment should be explosion proof. Eliminate ignition sources.

Exposure Guidelines

OSHA Permissible Exposure Limits (PEL's)

Common Name CAS #	Approx Wt%	TWA (final)	Ceilings limits (final)	Skin designations
XYLENE (W/ ANTI-STATIC) 1330-20-7	5 - 10	100 ppm TWA; 435 mg/m3 TWA		
PROPANE 74-98-6	15 - 20	1000 ppm TWA; 1800 mg/m3 TWA		
TALC 14807-96-6	10 - 15	see Table Z-3		
ISOPROPYL ALCOHOL 67-63-0	1 - 5	400 ppm TWA; 980 mg/m3 TWA		
METHYL ETHYL KETONE 78-93-3	1 - 5	200 ppm TWA; 590 mg/m3 TWA		
ISOBUTYL ACETATE 110-19-0	1 - 5	150 ppm TWA; 700 mg/m3 TWA		
ETHYLBENZENE 100-41-4	1 - 5	100 ppm TWA; 435 mg/m3 TWA		
CARBON BLACK 1333-86-4	.1 - 1	3.5 mg/m3 TWA		
CRYSTALLINE SILICA 14808-60-7	.1 - 1	see Table Z-3		

ACGIH Threshold Limit Value (TLV's)

Common Name CAS #	Approx Wt%	TWA	STEL	Ceiling limits	Skin designations
XYLENE (W/ ANTI-STATIC) 1330-20-7	5 - 10	100 ppm TWA	150 ppm STEL		
DIMETHYL KETONE 67-64-1	35 - 40	750 PPM			

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PROPANE 74-98-6	15 - 20	2500 ppm TWA			
TALC 14807-96-6	10 - 15	2 mg/m3 TWA (this TLV is for the respirable fraction of dust for Talc containing no asbestos and <1% crystalline silica)			
BUTANE 106-97-8	5 - 10	800 ppm TWA			
ISOPROPYL ALCOHOL 67-63-0	1 - 5	(400 ppm) TWA	(500ppm) STEL		
METHYL ETHYL KETONE 78-93-3	1 - 5	200 ppm TWA	300 ppm STEL		
ISOBUTYL ACETATE 110-19-0	1 - 5	150 ppm TWA			
ETHYLBENZENE 100-41-4	1 - 5	100 ppm TWA	125 ppm STEL		
CARBON BLACK 1333-86-4	.1 - 1	3.5 mg/m3 TWA			
CRYSTALLINE SILICA 14808-60-7	.1 - 1	0.05 mg/m3 TWA (this TLV is for the respirable fraction of dust)			

If this section is blank, no information is available.

9. PHYSICAL PROPERTIES

Odor:	Normal for this product type.
Physical State:	Liquid
pH:	Not determined.
Vapor pressure:	NOT DETERMINED mmHG @ 68° F (20° C)
Vapor density (air = 1.0):	5
Boiling point:	-42° F (-41° C)
Solubility in water:	Not determined.
Coefficient of water/oil distribution:	Not determined.
Density (weight per gallon):	6.69
Specific gravity (water = 1):	.8
Evaporation rate (butyl acetate = 1.0):	5.6

10. STABILITY AND REACTIVITY

Stability:	This product is stable.
Conditions to Avoid:	None known.
Incompatibility:	Strong oxidizers.
Hazardous Polymerization:	None anticipated.
Hazardous Decomposition Products:	Silicon dioxide. Carbon monoxide and carbon dioxide. Metal oxide fumes.
Sensitivity to static discharge:	Subject to static discharge hazards. Please see bonding and grounding information in Section 7.

11. TOXICOLOGICAL INFORMATION

Contains ethylbenzene, which has been determined by NTP to be an animal carcinogen with no known relevance to humans. IARC has classified ethylbenzene as possibly carcinogenic to humans (2b) on the basis of sufficient evidence of carcinogenicity in laboratory animals but inadequate evidence of cancer in humans. Contains crystaline silica. The IARC has determined that crystaline silica inhaled in the form of quartz or cristobablite from occupational sources is carcinogenic to humans (group 1). Refer to IARC monograph 68 in conjunction with the use of these materials. Risk of cancer depends on the duration and level of exposure. In coatings products, risk is due primarily to inhalation of sanding dusts or respirable particles in spray mists. The NTP has also determined that crystaline silica is a known human carcinogen in the form of fine, breathable particles. Risk of cancer depends on duration and level of exposure in coatings products, risk is due primarily to inhalation of sanding dust or respirable particles in spray mist.

Common Name CAS #	Approx Wt%	IARC Group 1 - Human Evidence	IARC Group 2A - limited human data	IARC Group 2b - sufficient animal data
ETHYLBENZENE 100-41-4	1 - 5			Monograph 77, 2000
CARBON BLACK 1333-86-4	.1 - 1			Monograph 65, 1996
CRYSTALLINE SILICA 14808-60-7	.1 - 1	Monograph 68, 1997; (inhaled in the form of quartz or cristobalite from occupational sources)		

Common Name CAS #	Approx Wt%	NTP Known carcinogens	NTP Suspect carcinogens	NTP Evidence of carcinogenicity
TALC 14807-96-6	10 - 15			male rat-some evidence; female rat-clear evidence; male mice-no evidence; female mice-no evidence
ETHYLBENZENE 100-41-4	1 - 5			male rat-clear evidence; female rat-some evidence; male mice-some evidence; female mice-some evidence
CRYSTALLINE SILICA 14808-60-7	.1 - 1	Known Carcinogen		

Common Name CAS #	Approx Wt%	OSHA Select carcinogens	OSHA Possible select carcinogens	ACGIH Carcinogens
ETHYLBENZENE 100-41-4	1 - 5		Monograph 77, 2000 IARC - Group 2B (Possibly carcinogenic to humans)	
CARBON BLACK 1333-86-4	.1 - 1		Monograph 65, 1996 IARC - Group 2B (Possibly carcinogenic to humans)	A4 - Not Classifiable as a Human Carcinogen
CRYSTALLINE SILICA 14808-60-7	.1 - 1			A2 - Suspected Human Carcinogen

If this section is blank, no information is available.

12. ECOLOGICAL DATA

Not available at this time.

13. DISPOSAL CONSIDERATIONS

Disposal should be made in accordance with federal, state and local regulations.

14. TRANSPORTATION INFORMATION

U.S. Department of Transportation
Proper Shipping Name: CONSUMER COMMODITY ORM-D
UN ID Number: CONCOM

49 CFR Hazardous Material Regulations Parts 100-180
The supplier will apply the combustible liquid exception in 49 CFR 173.150(f), limited quantity or "does not sustain combustion" exceptions and consumer commodity rules, when authorized. Please check 49 CFR Parts 100-180 to determine if the use of these exceptions applies to your shipments when re-shipping our products.

International Air Transport Association:
Proper Shipping Name: AEROSOLS FLAMMABLE
Hazard Class: 2.1
UN ID Number: UN1950

International Maritime Organization:
Proper Shipping Name: AEROSOLS NOS
Hazard Class: 2.1
UN ID Number: UN1950

15. REGULATORY INFORMATION

U.S. FEDERAL REGULATIONS:

Common Name CAS #	Approx Wt%	SARA 302	SARA 313	CERCLA RQ IN LBS.
XYLENE (W/ ANTI-STATIC) 1330-20-7	5 - 10		form R reporting required for 1.0% de minimis concentration	100
METHYL ETHYL KETONE 78-93-3	1 - 5		form R reporting required for 1.0% de minimis concentration	5000
ISOBUTYL ACETATE 110-19-0	1 - 5			5000
ETHYLBENZENE 100-41-4	1 - 5		form R reporting required for 1.0% de minimis concentration	1000

SARA 311/312 Hazard Class:
Acute: Yes
Chronic: Yes
Flammability: Yes
Reactivity: No
Sudden Pressure: Yes

U.S. STATE REGULATIONS:

Pennsylvania Right To Know:

ETHYLBENZENE	100-41-4
BUTANE	106-97-8
XYLENE (W/ ANTI-STATIC)	1330-20-7
TALC	14807-96-6
ISOPROPYL ALCOHOL	67-63-0
DIMETHYL KETONE	67-64-1
PROPANE	74-98-6
ETHYL 3-ETHOXYPROPIONATE	763-69-9
METHYL ETHYL KETONE	78-93-3
PROPRIETARY RESIN	Trade Secret
ISOBUTYL ACETATE	110-19-0

California Proposition 65:
WARNING: This product contains a chemical known to the State of California to cause cancer.

Rule 66 status of product Photochemically reactive.

INTERNATIONAL REGULATIONS - Chemical Inventories

TSCA Inventory: This product does not comply with TSCA Inventory Requirements.

Canada Domestic Substances List: All components of this product are listed on the Domestic Substances List.

16. OTHER INFORMATION

HMIS Codes

Health:	2
Flammability:	4
Reactivity:	1
PPE:	X - See Section 8 for Personal Protective Equipment (PPE).

Abbreviations:
OSHA - Occupational Safety and Health Administration, IARC - International Agency for Research on Cancer, NIOSH - National Institute of Occupational Safety and Health, NTP - National Toxicology Program, ACGIH - American Conference of Governmental Industrial Hygienists, SCAQMD - South Coast Air Quality Management District, TSCA - Toxic Substances Control Act, IATA - International Air Transport Association, IMO - International Maritime Organization, DOT - Department of Transportation, NA - Not applicable, NOT ESTAB - Not established, N.A.V. - Not available, RQ - Reportable quantity, WT - Weight, MG/CU M - Milligrams per cubic meter, G/L - Grams per liter, MM - Millimeters, MPPCF - Millions of particles per cubic foot, PPM - parts per million, PPT - parts per thousand, TCC/PM - Tag closed cup / Pensky-Martens, PB - Lead, PEL - Permissible exposure level, TWA - Time Weighted Average, STEL - Short term exposure limit, C - Celsius, F - Fahrenheit.

Disclaimer:
The data on this sheet represent typical values. Since application variables are a major factor in product performance, this information should serve only as a general guide. Valspar assumes no obligation or liability for use of this information.

UNLESS VALSPAR AGREES OTHERWISE IN WRITING, VALSPAR MAKES NO WARRANTIES, EXPRESS OR IMPLIED, AND DISCLAIMS ALL IMPLIED WARRANTIES INCLUDING WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR USE OR FREEDOM FROM PATENT INFRINGEMENT. VALSPAR WILL NOT BE LIABLE FOR ANY SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES. Your only remedy for any defect in this product is the replacement of the defective product, or a refund of its purchase price, at our option. This MSDS contains additional information required by the state of Pennsylvania.

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FROM PK CUST SRV

CARG004030

Paint

1 S DUPONT MATERIAL SAFETY DATA SHEET Page: 1
11/04/2004 [redacted]

****** SECTION 1 - Product and Company Identification ******

Manufacturer: [redacted] de Nemours & Co.
Dupont Performance Coatings
Wilmington, DE, 19898

Telephone: Product Information: (800) 441-7515
Medical Emergency: (800) 441-3637
Transportation Emergency: (800) 424-9300 (CHEMTREC)

PRODUCT NAME: [redacted]

PRODUCT CODE: 8022 S 031117

Chemical Family: No Information Available

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****** SECTION 2 - Composition, Information on Ingredients ******

CAS #	Ingredient	Concentration/ Range (%)	Exposure Limits**
123-86-4	BUTYL ACETATE		A 200.0 ppm 15 min STEL A 150.0 ppm O 150.0 ppm
8032-32-4	VM&P NAPHTHA		A 300.0 ppm D 100.0 ppm O None
67-64-1	ACETONE		A 750.0 ppm 15 min STEL A 500.0 ppm O 1000.0 ppm D 500.0 ppm 8 & 12 hour TWA
108-88-3	TOLUENE	9- 9	A 50.0 ppm Skin O 300.0 ppm CEIL O 500.0 ppm 10 min TWA O 200.0 ppm D 50.0 ppm 8 & 12 hour TWA
112-34-5	ETHANOL, 2-(2-BUTOXYETHO-	2	D 5.0 ppm

****** SECTION 2 - Composition, Information on Ingredients ******
Cont'd

	XY)-		A	None
			O	None
108-83-8	DIISOBUTYL KETONE		A	25.0 ppm
			O	50.0 ppm
108-65-6	PROPYLENE GLYCOL MONOMET-HYL ETHER ACETATE		D	10.0 ppm 8 & 12 hour TWA
			A	None
			O	None
112-07-2	ETHYLENE GLYCOL MONOBUTY-L ETHER ACETATE	2	A	20.0 ppm
			D	10.0 ppm Skin
			O	None
142-82-5	HEPTANE		A	500.0 ppm 15 min STEL
			A	400.0 ppm
			O	500.0 ppm
64742-94-5	AROMATIC HYDROCARBON		D	100.0 ppm
			A	None
			O	None
91-20-3	NAPHTHALENE	0.1- 0.6	A	15.0 ppm CEIL Skin
			A	10.0 ppm Skin
			O	10.0 ppm
			D	0.1 ppm 8 & 12 hour TWA
540-84-1	2,2,4-TRIMETHYLPENTANE		A	300.0 ppm
			O	500.0 ppm
111-65-9*	MIXED OCTANES		A	300.0 ppm
			O	None

* Assigned CAS No. - An official CAS No. does not exist. The CAS No. shown is for a similar chemical.

OSHA HAZARDOUS? Yes

** A = ACGIH, O = OSHA, D = Dupont, S = Supplier (For additional definition of terms, see Section 16). Limits are 8-hour TWA unless otherwise specified.

****** SECTION 3 - Hazards Information ******

Emergency Overview:
DANGER! EXPOSURE MAY CAUSE LUNG INJURY AND ALLERGIC RESPIRATORY REACTION. EFFECTS MAY BE PERMANENT. EXTREMELY FLAMMABLE LIQUID AND VAPOR. VAPORS AND SPRAY MIST HARMFUL IF INHALED. VAPORS MAY CAUSE FLASH FIRE. MAY CAUSE CENTRAL NERVOUS SYSTEM EFFECTS SUCH AS DIZZINESS, HEADACHE, OR NAUSEA. MAY CAUSE NOSE, THROAT, EYE AND SKIN IRRITATION. CAN BE ABSORBED THROUGH THE SKIN.

Potential Health Effects:
Inhalation:
If this product mixed with an isocyanate activator/hardener (see MSDS for the activator), the following health effects may apply: Exposure to isocyanates may cause respiratory sensitization. This effect may be permanent. Symptoms include an asthma-like reaction with shortness of breath, wheezing, cough or permanent lung sensitization. This effect may be delayed for several hours after exposure. Repeated overexposure to isocyanates may cause a decrease in lung function, which may be permanent. Individuals with lung or breathing problems or prior reactions to isocyanates must not be exposed to vapors or spray mist of this product.

May cause nose and throat irritation. May cause nervous system depression characterized by the following progressive steps: headache, dizziness, nausea, staggering gait, confusion, unconsciousness. Reports have associated repeated and prolonged overexposure to solvents with permanent brain and nervous system damage.
Ingestion:
May result in gastrointestinal distress.
Skin or eye contact:
May cause irritation or burning of the eyes. Repeated or prolonged liquid contact may cause skin irritation with discomfort and dermatitis.

Other Potential Health Effects in addition to those listed above:

BUTYL ACETATE
May cause abnormal liver function.
The following medical conditions may be aggravated by exposure: respiratory system
Tests for embryotoxic activity in animals has been inconclusive. Rats exposed to very high airborne levels have exhibited high frequency hearing deficits. The significance of this to man is unknown.
Has been toxic to the fetus in laboratory animals at doses that are toxic to the mother.

VM&P NAPHTHA
Increased susceptibility to the effects of this material may be observed in people with preexisting disease of any of the following: central nervous system kidneys liver lungs respiratory system

****** SECTION 3 - Hazards Information ******
Cont'd

This substance may cause damage to any of the following organs/systems: central nervous system kidneys liver lungs skin and eyes
Material may be harmful or fatal if swallowed.

ACETONE
The following medical conditions may be aggravated by exposure: lung disease eye disorders skin disorders
Overexposure may cause damage to any of the following organs/systems: blood central nervous system eyes kidneys liver respiratory system skin

TOLUENE
Increased susceptibility to the effects of this material may be observed in people with preexisting disease of any of the following: central nervous system kidneys liver respiratory system skin

Can be absorbed through the skin in harmful amounts.
Recurrent overexposure may result in liver and kidney injury.
High airborne levels have produced irregular heart beats in animals and occasional palpitations in humans.
Rats exposed to very high airborne levels have exhibited high frequency hearing deficits. The significance of this to man is unknown.
WARNING: This chemical is known to the State of California to cause birth defects or other reproductive harm.

ETHANOL, 2-(2-BUTOXYETHOXY)-
Increased susceptibility to the effects of this material may be observed in people with preexisting disease of any of the following: central nervous system eyes kidneys liver skin
Tests in laboratory animals have shown effects on any of the following organs/systems: blood kidneys liver
Recurrent overexposure may result in liver and kidney injury.
High doses in laboratory animals have shown non specific effects such as irritation, weight loss, moderate blood changes.
Eye contact may cause any of the following: severe irritation burns corneal injury

DIISOBUTYL KETONE
The following medical conditions may be aggravated by exposure: asthma blood dermatitis
Contact may cause skin irritation with discomfort or rash.
Repeated exposure may cause allergic skin rash, itching, swelling.
This substance may cause damage to any of the following organs/systems: eyes kidneys liver
Extremely high oral and inhalation doses in laboratory animals have shown weight changes in various organs such as the liver, kidney, brain, heart and adrenal gland. In add ition liver and kidney injury

****** SECTION 3 - Hazards Information ******
Cont'd

were observed at the extremely high inhalation level. In another inhalation study there was a slight depression in the white blood cell count.
Liquid or vapor causes irritation, experienced as stinging, excess blinking and tear production, with excess redness and swelling of the conjuctiva.

PROPYLENE GLYCOL MONOMETHYL ETHER ACETATE
Recurrent overexposure may result in liver and kidney injury.

ETHYLENE GLYCOL MONOBUTYL ETHER ACETATE
May destroy red blood cells.
May cause abnormal kidney function.
May cause temporary upper respiratory and/or lung irritation with cough, difficult breathing, or shortness of breath.
The following medical conditions may be aggravated by exposure:
central nervous system gastrointestinal system kidneys liver dermatitis
Can be absorbed through the skin in harmful amounts.
Overexposure may cause damage to any of the following organs/systems: blood kidneys liver
Ingestion may cause headache, nausea, vomiting, dizziness, and drowsiness.

HEPTANE
Increased susceptibility to the effects of this material may be observed in people with preexisting disease of any of the following:
central nervous system respiratory system skin
May cause central nervous system effects such as dizziness, headache, nausea, and loss of consciousness.
Laboratory studies with rats have shown that petroleum distillates can cause kidney damage and kidney or liver tumors. These effects were not seen in similar studies with guinea pigs, dogs, or monkeys.
Several studies evaluating petroleum workers have not shown a significant increase of kidney damage or an increase in kidney or liver tumors.
Aspiration may occur during swallowing or vomiting, resulting in lung damage.

AROMATIC HYDROCARBON
Laboratory studies with rats have shown that petroleum distillates can cause kidney damage and kidney or liver tumors. These effects were not seen in similar studies with guinea pigs, dogs, or monkeys.
Several studies evaluating petroleum workers have not shown a significant increase of kidney damage or an increase in kidney or liver tumors.

NAPHTHALENE
Is an IARC, NTP or OSHA carcinogen.

****** SECTION 3 - Hazards Information ******
Cont'd

Tests in some laboratory animals demonstrate carcinogenic activity. Increased susceptibility to the effects of this material may be observed in people with preexisting disease of any of the following: kidneys liver
Recurrent overexposure may result in liver and kidney injury.
WARNING: This chemical is known to the State of California to cause cancer.

NOTE:
If a chemical listed above is not identified as a carcinogen it is not an "IARC, NTP, or OSHA carcinogen".

****** SECTION 4 - First Aid Measures ******

First Aid Procedures:
Inhalation:
If affected by inhalation of vapor or spray mist, move to fresh air. If not breathing, give artificial respiration, preferably mouth-to-mouth. If breathing difficulty persists, or occurs later, consult a physician.
Ingestion:
In the unlikely event of ingestion, DO NOT INDUCE VOMITING. Call a physician immediately and have names of ingredients available.
Skin or eye:
In case of eye contact, immediately flush with plenty of water for at least 15 minutes; call a physician. In case of skin contact, wash thoroughly with soap and water. If irritation occurs, contact a physician.

****** SECTION 5 - Firefighting Measures ******

Flash Point (Method) Below 20 deg F Closed Cup
Approx. flammable limits LFL 0.8 % UFL 12.8 %
Auto ignition temperature 232.2 - 465.0 Deg C
Hazardous Combustion Products:
CO, C02, smoke, and oxides of any heavy metals that are reported in "Composition, Information on Ingredients" section.
Extinguishing media:
Universal aqueous film-forming foam, carbon dioxide, dry chemical.
Special fire fighting procedures:
Full protective equipment, including self-contained breathing apparatus, is recommended. Water from fog nozzles may be used to prevent pressure build-up.
Fire & explosion hazards:
Flammable liquid. Vapor/air mixture will burn when an ignition source is present.

****** SECTION 6 - Accidental Release Measures ******

****** SECTION 6 - Accidental Release Measures ******
Cont'd

Procedures for cleaning up spills or leaks:
Ventilate area. Remove sources of ignition. Prevent skin and eye contact and breathing of vapor.

If the material contains, or is mixed with an isocyanate activator/hardener: Wear a positive-pressure, supplied-air respirator (NIOSH approved TC-19C), eye protection, gloves and protective clothing. Pour liquid decontamination solution over the spill and allow to sit at least 10 minutes. Typical decontamination solutions for isocyanate containing materials are: 20% Surfactant (Tergitol TMN 10) and 80% Water OR 0 -10% Ammonia, 2-5% Detergent and Water (balance) Pressure can be generated. Do not seal waste containers for 48 hours to allow C02 to vent. After 48 hours, material may be sealed and disposed of properly. If material does not contain or is not mixed with an isocyanate activator/hardener: Wear a properly fitted air-purifying respirator with organic vapor cartridges (NIOSH approved TC-23C), eye protection, gloves and protective clothing. Confine, remove with inert absorbent, and dispose of properly.

Skin contact may cause skin sensitization.

****** SECTION 7 - Handling and Storage ******

Precautions to be taken in handling and storing:
Observe label precautions. Keep away from heat, sparks, flame, static discharge and other sources of ignition. VAPORS MAY IGNITE EXPLOSIVELY. Vapors may spread long distances. Prevent buildup of vapors. Extinguish all pilot lights and turn off heaters, non-explosion proof electrical equipment and other sources of ignition during and after use and until all vapors are gone. Close container after each use. Ground containers when pouring. Wash thoroughly after handling and before eating or smoking. Do not store above 120 deg F.
OSHA/NFPA Storage Classification: IB
Other precautions:
If material is a coating: do not sand, flame cut, braze or weld dry coating without a NIOSH approved respirator or appropriate ventilation, and gloves.

****** SECTION 8 - Exposure Controls or Personal Protection ******

Engineering controls and work practices:
Ventilation:
Provide sufficient ventilation in volume and pattern to keep contaminants below applicable exposure limits.

Personal Protective Equipment:
Personal protective equipment should be worn to prevent contact with eyes, skin or clothing.

****** SECTION 8 - Exposure Controls or Personal Protection ******
Cont'd

Respiratory:
Do not breathe vapors or mists. When this product is used with an isocyanate activator/hardener, wear a positive-pressure, supplied-air respirator (NIOSH approved TC-19C) while mixing activator/hardener with paint, during application and until all vapors and spray mist are exhausted. If product is used without isocyanate activator/hardener, a properly fitted air-purifying respirator with organic vapor cartridges (NIOSH TC-23C) and particulate filter (NIOSH TC-84A) may be used. Follow respirator manufacturer s directions for respirator use. Do not permit anyone without protection in the painting area. Refer to the hardener/activator label instructions and MSDS for further information. Individuals with history of lung or breathing problems or prior reaction to isocyanates should not use or be exposed to vapor or spray mist if mixed with isocyanate activators/hardeners.

Protective clothing:
Neoprene gloves and coveralls are recommended.

Eye protection:
Desirable in all industrial situations. Goggles are preferred to prevent eye irritation. If safety glasses are substituted, include splash guard or side shields.

****** SECTION 9 - Physical and Chemical Properties ******

Evaporation Rate	Slower than Ether
Vapor Pressure of principal solvent	51.30 mmHg @ 20 Deg C
Solubility of solvent in water	NIL
Vapor density of principal solvent (Air = 1)	3.40
Approx. Boiling range	56 - 213 DEG (C)
Approx. Freezing range	-74 - -73 DEG (C)
Gallon weight (lbs/gal)	6.60
Specific gravity	0.79
Percent volatile by volume	100.00
Percent volatile by weight	100.00
Percent solids by volume	0.00
Percent solids by weight	0.00
Odor	Characteristic Solvent Odor
Appearance	Liquid Thinner
Physical state	Liquid
pH (waterborne systems only)	Not Applicable
VOC* less exempt (lbs/gal)	6.6
VOC* as packaged (lbs/gal)	6.1

* VOC less exempt (theoretical) and VOC as packaged (theoretical) are based upon the VOC of the packaged material at the point of manufacture.

****** SECTION 10 - Stability and Reactivity ******

Stability:
Stable
Incompatibility (materials to avoid):
None reasonably foreseeable
Hazardous decomposition products:
CO, C02, smoke, and oxides of any heavy metals that are reported in "Composition, Information on Ingredients" section.
Hazardous polymerization:
Will not occur.
Sensitivity to static discharge:
Solvent vapors in air may explode if static grounding and bonding is not used during transfer of this product.
Sensitivity to mechanical impact: None Known

****** SECTION 11 - Toxicological Information ******

No Information Available

****** SECTION 12 - Ecological Information ******

No Information Available

****** SECTION 13 - Disposal Considerations ******

Waste disposal method:
Do not allow material to contaminate ground water systems. Incinerate or otherwise dispose of waste material in accordance with Federal, State, Provincial, and local requirements. Do not incinerate in closed containers.

****** SECTION 14 - Transportation Information ******

No Information Available

****** SECTION 15 - Regulatory Information ******

TSCA Status:
In compliance with TSCA Inventory requirements for commercial purposes.
DSL Status:
All components of the mixture are listed on the DSL.

Photochemical Reactivity: Non-photochemically reactive

Other Regulatory Information:

CAS #	Ingredient	302	TPQ/RQ	EPCRA 311/312	313	CERCLA RQ(lbs)	HAP
123-86-4	BUTYL ACETATE	N	NR	A,C,F	N	NR	N
8032-32-4	VM&P NAPHTHA	N	NR	A,C,F	N	NR	N

****** SECTION 15 - Regulatory Information ******
Cont'd

67-64-1	ACETONE	N	NR	A,C,F	N	5000	N
108-88-3	TOLUENE	N	NR	A,C,F	Y	1000	Y
112-34-5	ETHANOL, 2-(2-BUTOXYETHOXY)-	N	NR	A,F	Y	NR	Y
108-83-8	DIISOBUTYL KETONE	N	NR	C,F	N	NR	N
108-65-6	PROPYLENE GLYCOL MONOMETHYL ETHER ACETATE	N	NR	F	N	NR	N
112-07-2	ETHYLENE GLYCOL MONOBUTYL ETHER ACETATE	N	NR	A,C,F	Y	NR	Y
142-82-5	HEPTANE	N	NR	A,C,F	N	100	N
64742-94-5	AROMATIC HYDROCARBON	N	NR	A	N	NR	N
91-20-3	NAPHTHALENE	N	NR	A,C,F	Y	100	Y
540-84-1	2,2,4-TRIMETHYLPENTANE	N	NR	A,C,F	N	1000	Y
111-65-9	MIXED OCTANES	N	NR	NA	N	NR	N

Key:
EPCRA: Emergency Planning and Community Right-to-Know Act (aka Title III, SARA)
302: Extremely hazardous substances
311/312 Categories: F = Fire Hazard A = Acute Hazard
R = Reactivity Hazard C = Chronic Hazard
P = Pressure Related Hazard
313 Information: Section 313 Supplier Notification - The chemicals listed above with a 'Y' in the 313 column are subject to reporting requirements of Section 313 of the Emergency Planning and Community Right-to-Know act of 1986 and of 40 CFR 372.
CERCLA: Comprehensive Emergency Response, Compensation and Liability Act of 1980.
HAP = Listed as a Clean Air Act Hazardous Air Pollutant
TPQ = Threshold planning quantity
RQ = Reportable quantity
NA = not available
NR = not regulated

****** SECTION 16 - Additional Information ******

HMIS Rating: H: 2 F: 3 R: 0

Glossary of Terms:
ACGIH - American Conference of Governmental Industrial Hygienists
IARC - International Agency for Research on Cancer
NTP - National Toxicology Program
OSHA - Occupational Safety and Health Administration
STEL - Short term exposure limit
TWA - Time-weighted average
PNOR - Particles not otherwise regulated
PNOC - Particles not otherwise classified

****** SECTION 16 - Additional Information ******
Cont'd

NOTICE FROM DUPONT

The data in this material safety data sheet relate only to the specific material designated herein and do not relate to use in combination with any other material or any process.

MSDS prepared by:
Performance Coatings Regulatory Affairs Consultant.

Paint

SECTION I - MATERIAL SAFETY DATA SHEET

PLASTI-KOTE CO., INC.
1000 LAKE ROAD
MEDINA, OHIO 44256
1-330-725-4511
1-800-255-3924 24 Hour Emergency Only

DATE PREPARED: 09/29/00
PRODUCT CLASS: AEROSOL SPRAY PAINT
SHIPPING NAME: CONSUMER COMMODITY
ORM-D INT'L UN NO. : 1950
NE = NONE ESTABLISHED
NA = NONE AVAILABLE

HAZARD RATING	HMIS		NFPA	
4 = SEVERE	HEALTH	1	HEALTH	2
3 = SERIOUS	FLAMMABILITY	4	FLAMMABILITY	4
2 = MODERATE	REACTIVITY	0	REACTIVITY	0
1 = SLIGHT	PERSONAL -		OTHER	–
0 = MINIMAL	PROTECTION	E		

SECTION II - HAZARDOUS INGREDIENTS

PRODUCT NAME :

MAGICOLOR MULTI-PURPOSE ENAMEL

INGREDIENT	CAS NUMBER	ACGIH TWA PPM	OSHA PEL PPM	OTHER TLV PPM	VAPOR PRESSURE mmHg at 20 C	PRODUCT# 14000, 14001, 14002, 14003, 14004, 14005, 14006, 14007, 14008, 14009, 14010, 14011, 14012, 14013, 14014, 14015, 14016, 14017, 14018, 14019, 14020, 14021, 14022, 14023, 14024, 14025, 14026, 14027, 14028, 14029, 14030, 14031, 14032, 14033, 14034, 14035, 14036, 14037, 14038, 14039, 14040, 14041, 14048, 14049 14050, 14051 % (wt)	RODUCT PRIMERS 14046 14047 % (wt)	PRODUCT# CLEAR ACRYLIC 14044 14045 % (wt)	PRODUCT# METALLICS 14042 14043 14052 % (wt)
ACETONE	67-64-1	750	1000	—	186	33-42	10-15	27-32	15-40
ALIPHATIC HYDROCARBON	64742-89-8	NE	NE	300	38		5-10		0-2
AROMATIC HYDROCARBON	64742-95-6	NE	NE	100	3	0-5			
ETHYL ACETATE	141-78-6	400	400	—	69	0-4			0-6
ISOPROPYL ALCOHOL	67-63-0	400	400	—	33	0-5			0-5
ETHYL ALCOHOL	64-17-5	1000	1000	—	40	5-10			0-2
2-BUTOXY ETHANOL	111-76-2	50	100	—	4.2				0-3
ETHYL 3-ETHOXY PROPIONATE	763-69-9	NE	NE	50	.67	5-10			0-3
DI-ISOBUTYL KETONE	106-83-6	25	50	—	1.7				0-5
ISOBUTYL ACETATE	110-19-0	150	150	—	12.6				0-10
METHYL ISOBUTYL KETONE	108-10-1	50	100	—	16				0-10
* METHYL ETHYL KETONE	78-93-3	200	200	—	70	0-5			0-10
MINERAL SPIRITS	64742-48-9	NE	NE	100	2.0				0-5
CARBON BLACK	1333-86-4	—	(1)	(1)	—	0-0.9			
TITANIUM DIOXIDE	13463-67-7	—	(2)	(2)	—	0-10			
* XYLENE	1330-20-7	100	100	—	5.1	5-10	30-40	35-40	25-50
PROPANE-ISOBUTANE MIXTURE	**68476-86-8**	**NE**	**1000**	—	—	**23**	**25**	**23**	**19-23**

(1) 3.5 mg/m3 DUST (2) 10mg/m3 DUST

* THIS CHEMICAL IS SUBJECT TO THE REPORTING REQUIREMENTS OF SECTION 313 OF SARA TITLE III.

SECTION III - PHYSICAL DATA

BOILING RANGE:	133° - 331° F	**VAPOR DENSITY:**	_X_ Heavier ___ Lighter than air
MELTING POINT:	Estimated min. 1500° F	**WEIGHT PER GALLON:**	7.8 - 8.0 (PAINT)
VAPOR PRESSURE:	Unknown for products.	**SPECIFIC GRAVITY :**	(H2O- =1): < 1
SOLUBILITY IN WATER:	Slight to moderate	**EVAPORATION RATE:**	__ Faster _X_ Slower than ether.
APPEARANCE AND ODOR:	Typical solvent paint	**EVAPORATION RATE:**	
PERCENT VOLATILE BY VOLUME: 99-90		(Butyl Acetate = 1) Section 1 products > 1	
See Section II for volatile, hazardous components.		Propellants > 1	

Continued on page 2

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SECTION IV - FIRE AND EXPLOSION HAZARD DATA

FLAMMABILITY CLASSIFICATION: OSHA: IA FLASH POINT: 0° F (-18° C) TCC
(EXTREMELY FLAMMABLE) UNIFORM FIRE CODE: LEVEL 3 AEROSOL (Propellant = -100° F)
EXTINGUISHING MEDIA: ALCOHOL FOAM, CO2, DRY CHEMICAL LEL 1.0

UNUSUAL FIRE AND EXPLOSION HAZARDS:
Closed containers may explode and/or autoignite when exposed to extreme heat, vapors are heavier than air and may travel along the ground or may be moved by ventilation and ignited by pilot lights, other flames, sparks, heaters, smoking, electric motors or other locations distant from material handling point.

SPECIAL FIRE FIGHTING PROCEDURES:
Water spray may be ineffective. Water may be used to cool closed containers to prevent pressure build and possible autoignition or explosion when exposed to extreme heat. If water is used, fog nozzles are preferable use self-contained breathing apparatus with full face piece operated in pressure demand or other positive pressure mode.

SECTION V - HEALTH HAZARD DATA

ROUTE(S) OF ENTRY: _X_ INHALATION _X_ SKIN ___ INGESTION _X_ EYES

CARCINOGENICITY: ___ NTP _X_ IARC ___ OSHA
Contains ethylbenzene as a component of xylene and/or mineral spirits. Ethylbenzene is classified by IARC as possibly carcinogenic to humans based on animal data; however there is inadequate evidence for cancer in exposed humans.

SYMPTOMS OF OVEREXPOSURE:

ACUTE: BREATHING: Excessive inhalation of vapors can cause nasal and respiratory irritation, dizziness, weakness, fatigue, nausea, headache, possible unconsciousness and even asphyxiation.

EYE CONTACT: Can cause severe irritation, redness, tearing, blurred vision.

SWALLOWING: Can cause gastrointestinal irritation, nausea, vomiting, diarrhea.

SKIN CONTACT: Can cause irritation. Prolonged contact can cause dryness and cracking of skin

CHRONIC: None known for product(s) in Section 1.

Reports have associated repeated and prolonged occupational overexposure to solvents with permanent brain and nervous system damage, severe overexposure in laboratory animals has also caused liver abnormalities and damage to kidneys, lungs, and spleen, heart and adrenals. Intentional misuse by deliberately concentrating and inhaling the contents may be harmful or fatal.

MEDICAL CONDITIONS: Generally Aggravated By Exposure - Can cause respiratory and/or skin reaction.

FIRST AID-EMERGENCY PROCEDURES:

1. IF INHALED - Remove individual to fresh air. If breathing is difficult, administer oxygen. If breathing is stopped, give artificial respiration and seek medical help.
2. IF IN EYES - Flush with water for 15 minutes while holding eyelids open. Get prompt medical attention.
3. IF SWALLOWED - Do NOT induce vomiting (aspiration of material into lungs can cause pneumonitis, which can be fatal). Keep person warm, quiet and get medical attention / Poison Control Center.
4. IF ON SKIN - Wash with soap and water or various hand cleaners, and wash clothing.

SECTION VI - REACTIVITY DATA

STABILITY: ___ UNSTABLE _X_ STABLE HAZARDOUS POLYMERIZATION: ___ MAY OCCUR _X_ WILL NOT OCCUR

CONDITIONS TO AVOID: Heat, sparks and open flame.
INCOMPATIBILITY (Materials to avoid): Avoid contact with strong oxidizing agents and heat.
HAZARDOUS DECOMPOSITION: May form toxic materials, carbon dioxide / carbon monoxide, various hydrocarbons, nitrogen compounds, etc., when burned.
CONDITIONS TO AVOID: Not applicable.

SECTION VII - SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: Eliminate all ignition sources, ventilate area, absorb liquid on paper, vermiculite, floor absorbent, or other absorbent material and transfer to a closed container.

WASTE DISPOSAL METHOD: Material collected on absorbent material may be deposited in a posted toxic substance landfill in accordance with local, state, and federal regulations.

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING: Do not puncture or incinerate. Do not store in areas above 120°F (49°C) or in direct sunlight, or near heat or open flames.

STORAGE CATEGORY: Store large quantities in building protected for storage of flammable liquids.

SECTION VIII - SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION: For casual/occasional use - to avoid breathing vapors or spray mist, open windows and doors or use other means to ensure fresh air entry during application and drying. If you experience eye watering, headache, or dizziness, increase fresh air, wear respiratory protection (NIOSH/MSHA approved), or leave the area.

VENTILATION: For regular/continuous use - provide sufficient mechanical (general) and/or local exhaust ventilation to maintain exposure below TLV'S in Section II.

PROTECTIVE GLOVES: Wear chemical resistant gloves, such as neoprene, if skin contact is to be avoided.

EYE PROTECTION: Chemical splash goggles, in compliance with OSHA regulations, are advised.

OTHER EQUIPMENT: Where special or unusual conditions exist, seek the expert assistance of an industrial hygienist.

WORK/HYGIENIC PRACTICES: Wash hands before eating or using washroom. As with all chemicals, minimize personal contact.

The data on this sheet represent typical values. Since application variables are a major factor in product performance, this information should serve only as a general guide. Valspar assumes no obligation or liability for use of this information. UNLESS VALSPAR AGREES OTHERWISE IN WRITING, VALSPAR MAKES NO WARRANTIES, EXPRESS OR IMPLIED, AND DISCLAIMS ALL IMPLIED WARRANTIES INCLUDING WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR USE OR FREEDOM FROM PATENT INFRINGEMENT. VALSPAR WILL NOT BE LIABLE FOR ANY SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES. Your only remedy for any defect in this product is the replacement of the defective product, or a refund of its purchase price, at our option. This MSDS contains additional information required by the state of Pennsylvania. 8/03

MSDS SHEET PREPARED BY: Plasti-Kote Technical Department Date 9/29/00

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CARG004043

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MATERIAL SAFETY DATA SHEET

SECTION I
PRODUCT IDENTIFICATION

KRYLON Sprayon

SHERWIN-WILLIAMS
DIVERSIFIED BRANDS, INC.
KRYLON/SPRAYON INDUSTRIAL PRODUCTS
31500 SOLON ROAD
SOLON, OH 44139

EMERGENCY TELEPHONE NO.
(216) 566-2917
INFORMATION TELEPHONE NO.
(800) 777-2966 SPRAYON INDUSTRIAL
(800) 247-3266 KRYLON INDUSTRIAL

DATE OF PREPARATION
01 - SEPT - 96

©1996, The Sherwin-Williams Co.

Unfilled [redacted]® Cans Used With OMNI-FILL® Package OMNIFILL/ISD

						Enamel Blend				*Lacquer, Acrylic, Vinyl*			*Jet Paks*	
SECTION II CAS No.	HAZARDOUS INGREDIENT (percent by weight)	ACGIH TLV <STEL>	OSHA PEL <STEL>	Units	Vapor Pressure (mm Hg)	25106 NMC EN-6	25112 NMC EN-12	25116 NMC EN-16		25206 LAV-6	25212 LAV-12	25216 LAV-16	S00070 Jet Pak Unit	S00072 Jet Pak Refills
74-98-6	Propane (propellant)		1000	PPM	760.0	22	22	22		22	22	22	51	51
106-97-8	Butane (propellant)	800	800	PPM	760.0	21	21	21					49	49
67-64-1	Acetone	750 <1000>	750 <1000>	PPM	180.0	48	48	48		70	70	70		
1330-20-7 §	Xylene	100 <150>	100 <150>	PPM	5.9	9	9	9		4	4	4		
100-41-4 §	Ethylbenzene	100 <125>	100 <125>	PPM	7.1	2	2	2						
123-42-2	Diacetone Alcohol	50	50	PPM	1.2					4	4	4		
	NFPA Code 30B Level					3	3	3		3	3	3	3	3
	VCC as a percent by weight, SAAQMD Rule 49					52	52	52		30	30	30	100	100
	HMIS® Ratings (Health - Flammability - Reactivity)					2-4-0	2-4-0	2-4-0		2-4-0	2-4-0	2-4-0	2-4-0	2-4-0

§ Ingredient subject to the reporting requirements of the Superfund Amendments and Reauthorization Act (SARA) Section 313, 40 CFR 372.65 C

NOTE: *This MSDS covers unfilled OMNI-FILL® cans only. Users of filled cans must consult both this MSDS and the MSDS for the material filled into the can.*

Omni-Pak Spray Enamels
Paint

→→→ *MSDS Text Page Follows* →→→

Unp[illegible]ed Omni-Pak® Cans Used With ([illegible]NI-FILL® Package OMNIFIL[illegible]

Section III — PHYSICAL DATA

PRODUCT WEIGHT	– N.A.	EVAPORATION RATE	– Faster than Ether
SPECIFIC GRAVITY	– N.A.	VAPOR DENSITY	– Heavier than Air
BOILING RANGE	– <0-342 °F	MELTING POINT	– N.A.
VOLATILE VOLUME	– 100 %	SOLUBILITY IN WATER	– N.A.

Section IV — FIRE AND EXPLOSION HAZARD DATA

FLAMMABILITY CLASSIFICATION *FLASH POINT* <0 F PMCC *LEL* 1.0 *UEL* 12.8

RED LABEL – Extremely Flammable, Flash below 21 °F

EXTINGUISHING MEDIA

Carbon Dioxide, Dry Chemical, Foam

UNUSUAL FIRE AND EXPLOSION HAZARDS

Closed containers may explode (due to the build-up of pressure) when exposed to extreme heat. Isolate from heat, electrical equipment, sparks and open flame. Application to hot surfaces requires special precautions. During emergency conditions, overexposure to decomposition products may cause a health hazard. Symptoms may not be immediately apparent. Obtain medical attention.

SPECIAL FIRE FIGHTING PROCEDURES

Full protective equipment including self-contained breathing apparatus should be used. Water spray may be ineffective. If water is used, fog nozzles are preferable. Water may be used to cool closed containers to prevent pressure build-up and possible autoignition or explosion when exposed to extreme heat.

Section V — HEALTH HAZARD DATA

ROUTES OF EXPOSURE

Exposure may be by INHALATION and/or SKIN or EYE contact, depending on conditions of use. To minimize exposure, follow recommendations for proper use, ventilation, and personal protective equipment.

ACUTE Health Hazards

EFFECTS OF OVEREXPOSURE

Irritation of eyes, skin and respiratory system. May cause nervous system depression. Extreme overexposure may result in unconsciousness and possibly death.

SIGNS AND SYMPTOMS OF OVEREXPOSURE

Headache, dizziness, nausea, and loss of coordination are indications of excessive exposure to vapors or spray mists.

Redness and itching or burning sensation may indicate eye or excessive skin exposure.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE

None generally recognized.

EMERGENCY AND FIRST AID PROCEDURES

If INHALED: If affected, remove from exposure. Restore breathing. Keep warm and quiet.
If on SKIN: Wash affected area thoroughly with soap and water. Remove contaminated clothing and launder before re-use.
If in EYES: Flush eyes with large amounts of water for 15 minutes. Get medical attention.
IF SWALLOWED: Never give anything by mouth to an unconscious person. DO NOT INDUCE VOMITING. Give several glasses of water. Seek medical attention.

CHRONIC Health Hazards

No ingredient in this product is an IARC, NTP or OSHA listed carcinogen.

Prolonged overexposure to solvent ingredients in Section II may cause adverse effects to the liver and urinary systems.

Reports have associated repeated and prolonged overexposure to solvents with permanent brain and nervous system damage.

Section VI — REACTIVITY DATA

STABILITY – Stable

INCOMPATIBILITY

None known.

HAZARDOUS DECOMPOSITION PRODUCTS

By fire: Carbon Dioxide, Carbon Monoxide

HAZARDOUS POLYMERIZATION – Will Not Occur

Section VII — SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED

Remove all sources of ignition. Ventilate and remove with inert absorbent.

WASTE DISPOSAL METHOD

Waste from this product may be hazardous as defined under the Resource Conservation and Recovery Act (RCRA) 40 CFR 261. Waste must be tested for ignitability to determine the applicable EPA hazardous waste numbers.

Do not incinerate. Depressurize container. Dispose of in accordance with Federal, State, and Local regulations regarding pollution.

Section VIII — PROTECTION INFORMATION

PRECAUTIONS TO BE TAKEN IN USE

Use only with adequate ventilation. Avoid breathing vapor and spray mist. Avoid contact with skin and eyes. Wash hands after using.

VENTILATION

Local exhaust preferable. General exhaust acceptable if the exposure to materials in Section II is maintained below applicable exposure limits. Refer to OSHA Standards 1910.94, 1910.107, 1910.108.

RESPIRATORY PROTECTION

If personal exposure cannot be controlled below applicable limits by ventilation, wear a properly fitted organic vapor/particulate respirator approved by NIOSH/MSHA for protection against materials in Section II.

PROTECTIVE GLOVES

Wear gloves which are recommended by glove supplier for protection against materials in Section II.

EYE PROTECTION

Wear safety spectacles with unperforated sideshields.

Section IX — PRECAUTIONS

DOL STORAGE CATEGORY – IA

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING

Contents are EXTREMELY FLAMMABLE. Keep away from heat, sparks, and open flame. Vapors will accumulate readily and may ignite explosively.

During use and until all vapors are gone: Keep area ventilated – Do not smoke – Extinguish all flames, pilot lights, and heaters – Turn off stoves, electric tools and appliances, and any other sources of ignition.

Consult NFPA Code. Use approved Bonding and Grounding procedures.

Contents under pressure. Do not puncture, incinerate, or expose to temperature above 120 °F. Heat from sunlight, radiators, stoves, hot water, and other heat sources could cause container to burst. Do not take internally. Keep out of the reach of children.

OTHER PRECAUTIONS

Intentional misuse by deliberately concentrating and inhaling the contents can be harmful or fatal.

Section X — OTHER REGULATORY INFORMATION

CALIFORNIA PROPOSITION 65

WARNING: These products (except S00070 and S000721 contain a chemical/s known to the State of California to cause cancer and birth defects or other reproductive harm.

TSCA CERTIFICATION

All chemicals in this product are listed, or are exempt from listing, on the TSCA inventory.

This Material Safety Data Sheet conforms to the Hazard Communication standard, 29 CFR 1910.1200(g)(4), for similar complex mixtures.

The above information pertains to this product as currently formulated, and is based on the information available at this time. Addition of reducers or other additives to this product may substantially alter the composition and hazards of the product. Since conditions of use are outside our control, we make no warranties, express or implied, and assume no liability in connection with any use of this information.

MATERIAL SAFETY DATA SHEET

PRODUCT NAME: [redacted] 450 HMIS CODES: H F R P
PRODUCT CODE: 2090-32 2 3 0 G

SECTION 1 - MANUFACTURER IDENTIFICATION

MANUFACTURER'S NAME: Imperial Paint Company, Inc.
ADDRESS : 2526 NW Yeon Avenue
Portland OR 97210-1895

EMERGENCY PHONE : 1-800-424-9300 DATE PRINTED : 02/11/05
INFORMATION PHONE : 1-503-223-5124 PREPARED BY: Regulatory Affairs Dept.

SECTION 2 - HAZARDOUS INGREDIENTS/SARA III INFORMATION

REPORTABLE COMPONENTS	CAS NUMBER	VAPOR PRESSURE mm Hg	@ TEMP	WEIGHT PERCENT
VM&P naphtha	64742-89-8	26	100°F	26
OSHA Permissible Exposure Limit (PEL):300 ppm (TWA), 400 ppm (STEL)				
ACGIH Threshold Limit Value (TLV):300 ppm (TWA), 400 ppm(STEL)				
iso-PROPYL ALCOHOL	67-63-0	33	68°F	8
OSHA Permissible Exposure Limit (PEL):400 ppm (TWA), 500 ppm (STEL)				
ACGIH Threshold Limit Value (TLV):400 ppm (TWA), 500 ppm (STEL)				
* TOLUENE	108-88-3	22	68°F	7
OSHA Permissible Exposure Limit (PEL):100 ppm (TWA), 150 ppm (STEL)				
ACGIH Threshold Limit Value (TLV):50 ppm (TWA) skin				
* XYLENE (mixed isomers)	1330-20-7	5.1	68°F	2
OSHA Permissible Exposure Limit (PEL):100 ppm (TWA), 150 ppm (STEL)				
ACGIH Threshold Limit Value (TLV):100 ppm (TWA), 150 ppm (STEL)				

* Indicates toxic chemical(s) subject to the reporting requirements of section 313 of Title III and of 40 CFR 372.

SECTION 3 - PHYSICAL/CHEMICAL CHARACTERISTICS

BOILING RANGE: 180°F - 284°F SPECIFIC GRAVITY (H2O=1): 1.03
VAPOR DENSITY: Heavier than air EVAPORATION RATE: Slower than ether
COATING V.O.C.(excluding water): 3.87 lb/gl
COATING V.O.C.(excluding water): 464 g/l
SOLUBILITY IN WATER: No
APPEARANCE AND ODOR: Liquid, typical odor of solvent(s) listed above.

SECTION 4 - FIRE AND EXPLOSION HAZARD DATA

FLASH POINT: 40°F METHOD USED: CLOSED CUP
FLAMMABLE LIMITS IN AIR BY VOLUME- LOWER: 1 UPPER: 12.3

EXTINGUISHING MEDIA: Foam, alcohol foam, CO2, dry chemical, water fog.

SPECIAL FIREFIGHTING PROCEDURES
Water spray may be ineffective. Water spray may be used to cool closed containers to prevent pressure build-up and possible rupture of containers. Water fog is preferred. Fire fighters should wear self contained breathing apparatus.

UNUSUAL FIRE AND EXPLOSION HAZARDS

CARG004046

MATERIAL SAFETY DATA SHEET

p containers tightly closed. Isolate from heat, electrical equipment, rks, and open flames. Closed containers may explode when exposed to extreme heat. Do not apply on hot surfaces, toxic gases may form when product is contacted by flame or hot surfaces.

SECTION 5 - REACTIVITY DATA

STABILITY: Stable

CONDITIONS TO AVOID
None

INCOMPATIBILITY (MATERIALS TO AVOID)
Avoid contact with strong alkalies, strong mineral acids or strong oxidizing agents.

HAZARDOUS DECOMPOSITION OR BYPRODUCTS
Dry material exposed to high heat such as welding or flame-cutting operations may release carbon monoxide.

HAZARDOUS POLYMERIZATION: Will not occur

SECTION 6 - HEALTH HAZARD DATA

INHALATION HEALTH RISKS AND SYMPTOMS OF EXPOSURE
Effects from vapors or spray mists in poorly ventilated areas may include irritation of the mucus membranes. Inhalation of vapors or spray mists may also result in nausea, dizziness, breathing difficulty, headaches, and loss of ordination.

SKIN AND EYE CONTACT HEALTH RISKS AND SYMPTOMS OF EXPOSURE
Skin contact: May cause skin irritation or sensitivity. Symptoms include redness, cracks, swelling, and dermatitis. Eye contact: Causes severe eye irritation. Symptoms include redness, tearing, burning, and visual disturbances.

SKIN ABSORPTION HEALTH RISKS AND SYMPTOMS OF EXPOSURE
May be harmful if absorbed through the skin. Symptoms include, nausea, headache and irritation, swelling, and redness of the affected area.

INGESTION HEALTH RISKS AND SYMPTOMS OF EXPOSURE
Harmful or fatal if swallowed. Symptoms include gastrointestinal irritation, nausea, vomiting, and diarrhea.

HEALTH HAZARDS (ACUTE AND CHRONIC)
Inhalation-(ACUTE) May cause dizziness, breathing difficulty, headaches & loss of coordination. (CHRONIC) Repeated exposure to high vapor concentrations may cause irritation of the respiratory system and permanent brain and nervous system damage. Eye Contact-Severe irritation, tearing, redness, and blurred vision. Skin contact-Can dry and de-fat skin causing cracks, irritation, and dermatitis. Ingestion-Can cause gastrointestinal irritation, vomiting, & diarrhea.

CARCINOGENICITY: **NTP CARCINOGEN:** No **IARC MONOGRAPHS:** No **OSHA REGULATED:** Yes
N/A

EDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE

CARG004047

MATERIAL SAFETY DATA SHEET

known

EMERGENCY AND FIRST AID PROCEDURES
Ingestion: Do not induce vomiting. Can cause chemical pneumonitis and pulmonary edema if material is aspirated into lungs. Call physician or emergency response agency immediately. Eye contact: Flush eyes with large amounts of water for at least 15 minutes. Seek medical attention. Skin contact: Flush with water followed by washing with soap and water. Inhalation: Remove victim to fresh air. Apply artificial respiration and other supportive measures as required. Seek medical attention.

========== SECTION 7 - PRECAUTIONS FOR SAFE HANDLING AND USE ==========

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED
Dike and contain spill with inert material (sand, earth, etc.). Transfer liquid to containers for recovery or disposal. Do not allow spilled material to enter drains or sewer systems. Remove all sources of ignition. Provide maximum ventilation. Do not allow personnel to enter spill area if they are not using proper protective gear as outlined in Section 6.

WASTE DISPOSAL METHOD
Dispose of waste in strict accordance with all local, state, and federal regulations.

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING
Keep containers closed when not in use. Do not store above 120°F. Store large quantities only in buildings designed and protected to comply with OSHA 1910.106. Spills on floors may be slippery, care should be taken to avoid falls. Keep out of reach of children.

OTHER PRECAUTIONS
Since containers of this material may contain residues (vapor, liquid or solid) when "empty", all hazard precautions given in this data sheet must be observed. Read and understand safety precautions before using this product. Keep closure tight and container upright to prevent leakage. Avoid breathing sanding dust. Intentional misuse by deliberately concentrating and inhaling this product can be harmful or fatal.

========== SECTION 8 - CONTROL MEASURES ==========

RESPIRATORY PROTECTION
Overexposure to vapors may be prevented by using ventilation controls, vapor exhaust or fresh air entry. NIOSH/MSHA approved (TC-23C) paint spray or air supplied (TC-19C) respirators may also reduce exposure. Read respirator manufactures's instructions carefully to determine the type of airborne contaminants which the respirator is effective.

VENTILATION
Provide sufficient mechanical ventilation to keep the concentration of ingredients listed in section 2 below the lowest suggested exposure limits.

PROTECTIVE GLOVES
Gloves should be constructed of nitrile, neoprene, or latex, or impervious to the ingredients listed in section 2.

EYE PROTECTION

CARG004048

Use chemical safety glasses, goggles or face shields for protection.

OTHER PROTECTIVE CLOTHING OR EQUIPMENT
To prevent repeated or prolonged skin contact, wear gloves, clothing, and footwear which are designed for protection when using this material.

WORK/HYGIENIC PRACTICES
Wash thoroughly after handling. If clothing or footwear is contaminated, discard or launder.

========== SECTION 9 - OTHER REGULATORY INFORMATION ==========

WARNING: Detectable amounts of a chemical known to the state of California to cause cancer, birth defects or other reproductive harm may be present in this product.

All information appearing herein is based upon data obtained from the manufacturer and/or recognized technical sources. While the information is believed to be accurate, Imperial Paint Company makes no representations as to its accuracy or sufficiency. Conditions of use are beyond Imperial Paint Companys control and therefore users are responsible to verify this data under their own operating conditions to determine whether the product is suitable for their particular purposes. Users assume all risks of their use, handling, and disposal of the product, or from the publication or use of, or reliance upon, information contained herein. This information relates only to the product designated herein, and does not relate to its use in combination with any other material or in any other process.

REVISION DATE: 02/11/05 **SUPERSEDES: ALL PREVIOUS VERSIONS**

CARG004049

Paint

Part: GAL15240 Line: MS Desc: THINNER

MATERIAL SAFETY DATA SHEET

15240

14 00

Section 1 -- PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NUMBER

15240

HMIS CODES

Health	3*
Flammability	3
Reactivity	0

PRODUCT NAME

[redacted]

MANUFACTURER'S NAME

MARTIN SENOUR PAINTS

4440 Warrensville Center Road

Warrensville Hts., OH 44128-2837

EMERGENCY TELEPHONE NO.

(216) 566-2917

DATE OF PREPARATION

05-AUG-03

INFORMATION TELEPHONE NO.

(216) 566-2902

Section 2 -- COMPOSITION/INFORMATION ON INGREDIENTS

% by WT	CAS No.	INGREDIENT			UNITS	VAPOR PRESSURE
23	64742-89-8	Lt. Aliphatic Hydrocarbon Solvent				
			ACGIH TLV	100	ppm	53 mm
			OSHA PEL	100	ppm	
31	108-88-3	Toluene				
			ACGIH TLV	50	ppm (skin)	22 mm
			OSHA PEL	100	ppm (skin)	
			OSHA PEL	150	ppm (skin) STEL	

Part: GAL15240 Line: MS Desc: THINNER

0.8	100-41-4	Ethylbenzene					
			ACGIH TLV	100	ppm		7.1 mm
			ACGIH TLV	125	ppm STEL		
			OSHA PEL	100	ppm		
			OSHA PEL	125	ppm STEL		
5	1330-20-7	Xylene					
			ACGIH TLV	100	ppm		5.9 mm
			ACGIH TLV	150	ppm STEL		
			OSHA PEL	100	ppm		
			OSHA PEL	150	ppm STEL		
8	67-56-1	Methanol					
			ACGIH TLV	200	ppm (skin)		92 mm
			ACGIH TLV	250	ppm (skin) STEL		
			OSHA PEL	200	ppm (skin)		
			OSHA PEL	250	ppm (skin) STEL		
10	67-63-0	2-Propanol					
			ACGIH TLV	400	ppm		33 mm
			ACGIH TLV	500	ppm STEL		
			OSHA PEL	400	ppm		
			OSHA PEL	500	ppm STEL		
1	111-76-2	2-Butoxyethanol					
			ACGIH TLV	20	ppm (skin)		0.88 mm
			OSHA PEL	20	ppm (skin)		
14	67-64-1	Acetone					
			ACGIH TLV	500	ppm		180 mm
			ACGIH TLV	750	ppm STEL		
			OSHA PEL	1000	ppm		

Continued on page 2

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1
    5        108-10-1  Methyl Isobutyl Ketone
1
                            ACGIH TLV     50  ppm                    16 mm
1
                            ACGIH TLV     75  ppm STEL
1
                            OSHA  PEL     50  ppm
1
                            OSHA  PEL     75  ppm STEL
1
    2         77-76-9  Dimethoxypropane
1
                            ACGIH TLV  Not Available                76 mm
1
                            OSHA  PEL  Not Available
1
==============================================================================
1
          Section 3 -- HAZARDS IDENTIFICATION
1
------------------------------------------------------------------------------
1
ROUTES OF EXPOSURE
1
   INHALATION of vapor or spray mist.
1
   EYE or SKIN contact with the product, vapor or spray mist.
1
EFFECTS OF OVEREXPOSURE
1
         EYES:  Irritation.
1
         SKIN:  Prolonged or repeated exposure may cause irritation.
1
   INHALATION:  Irritation of the upper respiratory system.
1
   May cause nervous system depression.  Extreme overexposure may result in
1
unconsciousness and possibly death.
1
SIGNS AND SYMPTOMS OF OVEREXPOSURE
1
   Headache, dizziness, nausea, and loss of coordination are indications of
1
excessive exposure to vapors or spray mists.
1
   Redness and itching or burning sensation may indicate eye or excessive
1
skin exposure.
1
MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE
1
   None generally recognized.
1
CANCER INFORMATION
1
  For complete discussion of toxicology data refer to Section 11.
1
==============================================================================
1
```

EYES: Flush eyes with large amounts of water for 15 minutes.
Get medical attention.

SKIN: Wash affected area thoroughly with soap and water.
Remove contaminated clothing and launder before re-use.

INHALATION: If affected, remove from exposure. Restore breathing.
Keep warm and quiet.

INGESTION: Do not induce vomiting.
Get medical attention immediately.

==========

Section 5 -- FIRE FIGHTING MEASURES

FLASH POINT	LEL	UEL
21 F TCC	1.0	36.5

FLAMMABILITY CLASSIFICATION

RED LABEL -- Flammable, Flash below 100 F

EXTINGUISHING MEDIA

Carbon Dioxide, Dry Chemical, Foam

Continued on page 3

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UNUSUAL FIRE AND EXPLOSION HAZARDS

Closed containers may explode when exposed to extreme heat.

Application to hot surfaces requires special precautions.

During emergency conditions overexposure to decomposition products may cause a health hazard. Symptoms may not be immediately apparent. Obtain medical attention.

SPECIAL FIRE FIGHTING PROCEDURES

Full protective equipment including self-contained breathing apparatus should be used.

Water spray may be ineffective. If water is used, fog nozzles are preferable. Water may be used to cool closed containers to prevent pressure build-up and possible autoignition or explosion when exposed to extreme heat.

Section 6 -- ACCIDENTAL RELEASE MEASURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED

Remove all sources of ignition. Ventilate the area.

Remove with inert absorbent.

Section 7 -- HANDLING AND STORAGE

STORAGE CATEGORY

DOL Storage Class IB

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE

Contents are FLAMMABLE. Keep away from heat, sparks, and open flame.

During use and until all vapors are gone: Keep area ventilated - Do not smoke - Extinguish all flames, pilot lights, and heaters - Turn off stoves, electric tools and appliances, and any other sources of ignition.

Consult NFPA Code. Use approved Bonding and Grounding procedures.

Keep container closed when not in use. Transfer only to approved containers with complete and appropriate labeling. Do not take internally.

Keep out of the reach of children.
ı
==========
ı
Section 8 -- EXPOSURE CONTROLS/PERSONAL PROTECTION
ı

ı
PRECAUTIONS TO BE TAKEN IN USE
ı
Use only with adequate ventilation.
ı
Avoid contact with skin and eyes. Avoid breathing vapor and spray mist.
ı
Wash hands after using.
ı
VENTILATION
ı
Local exhaust preferable. General exhaust acceptable if the exposure to
ı
materials in Section 2 is maintained below applicable exposure limits.
ı
Refer to OSHA Standards 1910.94, 1910.107, 1910.108.
ı
RESPIRATORY PROTECTION
ı
If personal exposure cannot be controlled below applicable limits by
ı
ventilation, wear a properly fitted organic vapor/particulate respirator
ı
approved by NIOSH/MSHA for protection against materials in Section 2.
ı
PROTECTIVE GLOVES
ı
Wear gloves which are recommended by glove supplier for protection
ı
against materials in Section 2.
ı
EYE PROTECTION
ı
Wear safety spectacles with unperforated sideshields.
ı

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15240 page 4
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ı
OTHER PRECAUTIONS
ı
Intentional misuse by deliberately concentrating and inhaling the
ı

Part: GAL15240 Line: MS Desc: THINNER

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1
Section 9 -- PHYSICAL AND CHEMICAL PROPERTIES
1

1

1

PRODUCT WEIGHT	6.64 lb/gal	796 g/l
SPECIFIC GRAVITY	0.80	
BOILING POINT	132 - 343 F	55 - 172 C
MELTING POINT	Not Available	
VOLATILE VOLUME	100 %	
EVAPORATION RATE	Slower than ether	
VAPOR DENSITY	Heavier than air	
SOLUBILITY IN WATER	N.A.	

1
VOLATILE ORGANIC COMPOUNDS (VOC Theoretical)
1

6.65 lb/gal	797 g/l	Less Water and Federally Exempt Solvents
5.71 lb/gal	685 g/l	Emitted VOC

1
==========
1
Section 10 -- STABILITY AND REACTIVITY
1

1
STABILITY -- Stable
1
CONDITIONS TO AVOID
1
None known.
1
INCOMPATIBILITY
1
None known.
1
HAZARDOUS DECOMPOSITION PRODUCTS
1
By fire: Carbon Dioxide, Carbon Monoxide
1
HAZARDOUS POLYMERIZATION
1
Will not occur
1
==========
1
Section 11 -- TOXICOLOGICAL INFORMATION
1

1

1
Ethylbenzene is classified by IARC as possibly carcinogenic to humans
1
(2B) based on inadequate evidence in humans and sufficient evidence in
1
laboratory animals. Lifetime inhalation exposure of rats and mice to high
1
ethylbenzene concentrations resulted in increases in certain types of
1
cancer, including kidney tumors in rats and lung and liver tumors in mice.
1
These effects were not observed in animals exposed to lower concentrations.
1
There is no evidence that ethylbenzene causes cancer in humans.
1
Prolonged overexposure to solvent ingredients in Section 2 may cause
1
adverse effects to the liver, urinary, blood forming, cardiovascular and
1
reproductive systems.
1
Reports have associated repeated and prolonged overexposure to solvents
1
with permanent brain and nervous system damage.
1

1
TOXICOLOGY DATA
1

1

1

1

1

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1

1
Continued on page 5
1
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15240 page 5
1
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1
CAS No. Ingredient Name
1

1
64742-89-8 Lt. Aliphatic Hydrocarbon Solvent
1
LC50 RAT 4HR Not Available

		LD50	RAT		Not Available	
108-88-3	Toluene					
		LC50	RAT	4HR	4000	ppm
		LD50	RAT		5000	mg/kg
100-41-4	Ethylbenzene					
		LC50	RAT	4HR	Not Available	
		LD50	RAT		3500	mg/kg
1330-20-7	Xylene					
		LC50	RAT	4HR	5000	ppm
		LD50	RAT		4300	mg/kg
67-56-1	Methanol					
		LC50	RAT	4HR	64000	ppm
		LD50	RAT		5630	mg/kg
67-63-0	2-Propanol					
		LC50	RAT	4HR	Not Available	
		LD50	RAT		5045	mg/kg
111-76-2	2-Butoxyethanol					
		LC50	RAT	4HR	Not Available	
		LD50	RAT		470	mg/kg
67-64-1	Acetone					
		LC50	RAT	4HR	Not Available	
		LD50	RAT		5800	mg/kg
108-10-1	Methyl Isobutyl Ketone					
		LC50	RAT	4HR	Not Available	
		LD50	RAT		2080	mg/kg
77-76-9	Dimethoxypropane					
		LC50	RAT	4HR	Not Available	
		LD50	RAT		Not Available	

Section 12 -- ECOLOGICAL INFORMATION

ECOTOXICOLOGICAL INFORMATION

No data available.

Section 13 -- DISPOSAL CONSIDERATIONS

WASTE DISPOSAL METHOD

Waste from this product may be hazardous as defined under the Resource Conservation and Recovery Act (RCRA) 40 CFR 261.

Waste must be tested for ignitability to determine the applicable EPA hazardous waste numbers.

Incinerate in approved facility. Do not incinerate closed container. Dispose of in accordance with Federal, State/Provincial, and Local regulations regarding pollution.

Section 14 -- TRANSPORT INFORMATION

No data available.

Continued on page 6

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Section 15 -- REGULATORY INFORMATION

SARA 313 (40 CFR 372.65C) SUPPLIER NOTIFICATION

CAS No.	CHEMICAL/COMPOUND	% by WT	% Element

108-88-3	Toluene	31
100-41-4	Ethylbenzene	0.8
1330-20-7	Xylene	5
67-56-1	Methanol	8
108-10-1	Methyl Isobutyl Ketone	5
	Glycol Ethers	1

CALIFORNIA PROPOSITION 65

WARNING: This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

TSCA CERTIFICATION

All chemicals in this product are listed, or are exempt from listing, on the TSCA Inventory.

Section 16 -- OTHER INFORMATION

This product has been classified in accordance with the hazard criteria of the CPR and the MSDS contains all of the information required by the CPR.

The above information pertains to this product as currently formulated, and is based on the information available at this time. Addition of reducers or other additives to this product may substantially alter the composition and hazards of the product. Since conditions of use are outside our control, we make no warranties, express or implied, and assume no liability in connection with any use of this information.

*** End of Report ***

MSDS - Welding

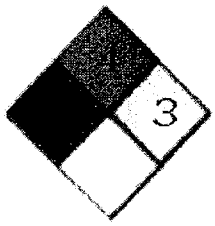
CARG004062

Welding

Includes abrasives.
- grinding wheel
- abrasive discs.

Welding

GAS DISSOLVED IN ACETONE



MATERIAL SAFETY DATA SHEET

Prepared to U.S. OSHA, CMA, ANSI and Canadian WHMIS Standards

PART I *What is the material and what do I need to know in an emergency?*

1. PRODUCT IDENTIFICATION

CHEMICAL NAME; CLASS: ACETYLENE - C_2H_2
Document Number: 00006

SUPPLIER/MANUFACTURER'S NAME: Quimby Corporation
ADDRESS: 1603 NW 14th Ave
Portland, OR 97209

BUSINESS PHONE: (503)221-1100
EMERGENCY PHONE: INFOTRAC: 1-800-535-5053

DATE OF PREPARATION: May 20, 1996
SECOND REVISION: December 8, 1999

2. COMPOSITION and INFORMATION ON INGREDIENTS

CHEMICAL NAME	CAS #	mole %	EXPOSURE LIMITS IN AIR					
			ACGIH		OSHA			OTHER
			TLV ppm	STEL ppm	PEL ppm	STEL ppm	IDLH ppm	
Acetylene	74-86-2	>99	Simple Asphyxiant		NE	NE	NE	NIOSH REL: 2500 ppm, ceiling Matheson maximum recommended limit for exposure: 5000 ppm
Maximum Impurities		< 0.4	None of the trace impurities in this mixture contribute significantly to the hazards associated with the product. All hazard information pertinent to this product has been provided in this Material Safety Data Sheet, per the requirements of the OSHA Hazard Communication Standard (29 CFR 1910.1200) and State equivalent standards.					

NF = Not Established C = Ceiling Limit See Section 16 for Definitions of Terms Used.

NOTE: all WHMIS required information is included. It is located in appropriate sections based on the ANSI Z400.1-1993 format.

3. HAZARD IDENTIFICATION

EMERGENCY OVERVIEW: Acetylene is a colorless, flammable gas, with a garlic-like odor, that is dissolved in acetone. The main health hazard associated with a release of this gas is asphyxiation by displacement of oxygen. Acetylene gas poses an extreme fire hazard when accidentally released. The gas is lighter than air, and may spread long distances. Distant ignition and flashback are possible. Flame or high temperature impinging on a localized area of the cylinder of this product can cause the cylinder to explode without activating the cylinder's relief devices. Acetylene gas may decompose explosively at elevated temperatures and pressures. Acetylene can form very explosive metallic salts (such as with copper, mercury, and silver). Provide adequate fire protection during emergency response situations.

SYMPTOMS OF OVEREXPOSURE BY ROUTE OF EXPOSURE: The most significant route of overexposure for this gas is by inhalation. The following paragraphs describe symptoms of exposure by route of exposure.

INHALATION: At concentration below the LEL of 2.5% (25000 ppm) this gas is essentially non-toxic. At higher concentrations, Acetylene has anesthetic effects. Symptoms of overexposure to such high concentrations may include drowsiness, dizziness, and a general feeling of weakness. High concentrations of this gas can cause an oxygen-deficient environment. Individuals breathing such an atmosphere may experience symptoms which include headaches, ringing in ears, dizziness, drowsiness, unconsciousness, nausea, vomiting, and depression of all the senses. The skin of a victim of overexposure may have a blue color. Under some circumstances of overexposure, death may occur. The following effects associated with various levels of oxygen are as follows:

CONCENTRATION	SYMPTOMS OF EXPOSURE
12-16% Oxygen:	Breathing and pulse rate increased, muscular coordination slightly disturbed.
10-14% Oxygen:	Emotional upset, abnormal fatigue, disturbed respiration.
6-10% Oxygen:	Nausea and vomiting, collapse or loss of consciousness.
Below 6%:	Convulsive movements, possible respiratory collapse, and death.

When administered with oxygen at concentrations of 10% or greater, Acetylene produces varying degrees of temporary narcosis.

See Section 16 for Definition of Ratings

OTHER POTENTIAL HEALTH EFFECTS: The gas is generally non-irritating to the skin and eyes. Acetylene is dissolved in acetone. Any skin or eye contact with the acetone component of this product may be slightly irritating to contaminated skin or eyes.

HEALTH EFFECTS OR RISKS FROM EXPOSURE: An Explanation in **Lay Terms**. Overexposure to Acetylene may cause the following health effects:

ACUTE: The most significant hazard associated with Acetylene is inhalation of oxygen-deficient atmospheres. Symptoms of oxygen deficiency include respiratory difficulty, ringing in ears, headaches, shortness of breath, wheezing, headache, dizziness, indigestion, and nausea. At high concentrations, unconsciousness or death may occur.

CHRONIC: There are currently no known adverse health effects associated with chronic exposure to the components of this compressed gas.

TARGET ORGANS: Respiratory system, central nervous system.

PART II *What should I do if a hazardous situation occurs?*

4. FIRST-AID MEASURES

RESCUERS SHOULD NOT ATTEMPT TO RETRIEVE VICTIMS OF EXPOSURE TO ACETYLENE WITHOUT ADEQUATE PERSONAL PROTECTIVE EQUIPMENT. At a minimum, Self-Contained Breathing Apparatus and Fire-Retardant Personal Protective equipment should be worn. Adequate fire protection must be provided during rescue situations.

Remove victim(s) to fresh air, as quickly as possible. Trained personnel should administer supplemental oxygen and/or cardio-pulmonary resuscitation, if necessary. Only trained personnel should administer supplemental oxygen.

SKIN EXPOSURE: If the liquid portion of this product (acetone) is spilled on skin, immediately begin decontamination with running water. Minimum flushing is for 15 minutes. Remove exposed or contaminated clothing, taking care not to contaminate eyes. Victim must seek immediate medical attention if redness or irritation develops.

EYE EXPOSURE: If the liquid portion of this product (acetone) splashes into eyes, open victim's eyes while under gentle running water. Use sufficient force to open eyelids. Have victim "roll" eyes. Minimum flushing is for 15 minutes.

Victim(s) must be taken for medical attention. Rescuers should be taken for medical attention, if necessary. Take copy of label and MSDS to physician or other health professional with victim(s).

5. FIRE-FIGHTING MEASURES

GAS DISSOLVED IN ACETONE

FLASH POINT (Closed Cup): 0°C (32°F)

AUTOIGNITION TEMPERATURE: 305°C (581°F)

FLAMMABLE LIMITS (in air by volume, %):
Lower (LEL): 2.5%
Upper (UEL): 82%
100% with substantial energy source and under certain conditions of pressure, container size and shape.

FIRE EXTINGUISHING MATERIALS: Extinguish fires of this gas by shutting-off the source of the gas. Use water spray to cool fire-exposed structures and equipment.

UNUSUAL FIRE AND EXPLOSION HAZARDS: When involved in a fire, this material ignites to produce toxic gases including carbon monoxide and carbon dioxide. Acetylene gas is extremely flammable and can readily form explosive mixtures with air over a very wide range. An explosion hazard exists in confined spaces when the gas is released. Pure Acetylene can explode under certain conditions of elevated pressure, temperature and container size. Acetylene reacts with active metals to form explosive acetylide compounds.

See Section 16 for Definition of Ratings

DANGER! Fires impinging (direct flame) on the outside surface of unprotected pressure storage vessels of Acetylene can be very dangerous. Direct flame exposure on the cylinder wall can cause an explosion either by BLEVE (Boiling Liquid Expanding Vapor Explosion), or by exothermic decomposition. This could cause a catastrophic failure of the vessel releasing the contents into a massive fireball and explosion. The resulting fire and explosion can result in severe equipment damage and personnel injury or death over a large area around the vessel. For massive fires in large areas, use unmanned hose holder or monitor nozzles; if this is not possible, withdraw from area and allow fire to burn.

Explosion Sensitivity to Mechanical Impact: Not Sensitive.
Explosion Sensitivity to Static Discharge: Static discharge may cause this gas to ignite explosively, if released.

SPECIAL FIRE-FIGHTING PROCEDURES: The best fire-fighting technique may be simply to let the burning gas escape from the pressurized cylinder, tank car, or pipeline. Stop the leak before extinguishing fire. If the fire is extinguished before the leak is sealed, the still-leaking gas could explosively re-ignite without warning and cause extensive damage, injury, or fatality. In this case, increase ventilation (in enclosed areas) to prevent flammable or explosive mixture formation. Structural fire-fighters must wear Self-Contained Breathing Apparatus and full protective equipment. Because of the potential for a BLEVE, evacuation of non-emergency personnel is essential. If water is not available for cooling or protection of vessel exposures, evacuate the area. Refer to the North American Emergency Response Guidebook (Guide #116).

6. ACCIDENTAL RELEASE MEASURES

SPILL AND LEAK RESPONSE: Uncontrolled releases should be responded to by trained personnel using pre-planned procedures. Proper protective equipment should be used. In case of a release, clear the affected area and protect people. Adequate fire protection must be provided.

Minimum Personal Protective Equipment should be **Level B: fire-retardant protective clothing, mechanically-resistant gloves and Self-Contained Breathing Apparatus.** Use only non-sparking tools and equipment. Locate and seal the source of the leaking gas. Protect personnel attempting the shut-off with water-spray. Allow the gas to dissipate. Monitor the surrounding area for oxygen and combustible gas levels. Combustible gas concentration must be below 10% of the LEL (LEL = 2.5%) prior to entry of any response personnel. The atmosphere must have at least 19.5 percent oxygen before personnel can be allowed in the area without Self-Contained Breathing Apparatus.

Attempt to close the main source valve prior to entering the area. If this does not stop the release (or if it is not possible to reach the valve), allow the gas to release in-place or remove it to a safe area and allow the gas to be released there.

THIS IS AN EXTREMELY FLAMMABLE GAS. Protection of all personnel and the area must be maintained.

PART III *How can I prevent hazardous situation from occurring?*

7. HANDLING and STORAGE

WORK PRACTICES AND HYGIENE PRACTICES: As with all chemicals, avoid getting Acetylene IN YOU. Do not eat or drink while handling chemicals. Be aware of any signs of dizziness or fatigue; exposures to fatal concentrations of Acetylene could occur without any significant warning symptoms.

STORAGE AND HANDLING PRACTICES: Cylinders should be stored in dry, well-ventilated areas away from sources of heat. Compressed gases can present significant safety hazards. Store containers away from heavily trafficked areas and emergency exits. Post "No Smoking or Open Flames" signs in storage or use areas. Avoid storage for over six months and keep the smallest amount necessary on-site at any one-time. In the United States, cylinders of Acetylene stored inside buildings at the locations of use, must be limited to a total capacity of 2500 ft^3 ($70m^3$). In Canada, the limit is for a total capacity of 2160 ft^3 (60 m^3) in non-sprinklered buildings and 6130 ft^3 (170 m^3) in building with sprinkler systems. After these quantities are exceeded, a special room must be built for the storage of Acetylene. Consider installation of leak detection and alarm for storage area. Cylinders should be stored upright and be firmly secured to prevent falling or being knocked over. This will prevent acetone from being released from the cylinder. Cylinders can be stored in the open, but in such cases, should be protected against extremes of weather and from the dampness of the ground to prevent rusting.

Use non-sparking ventilation systems, approved explosion-proof equipment, and appropriate electrical systems. Keep the quantity stored as small as possible. Store away from process and production areas, away from elevators, building and room exits or main aisles leading to exits. Keep storage area clear of materials which can burn. Have appropriate extinguishing equipment in the storage area (e.g., sprinkler system, portable fire extinguishers).

It is important to note that Acetylene, in its free state, under pressure, may decompose violently. The higher the pressure, the smaller the initial force necessary to cause a reaction. Therefore, **never use the free gas outside the cylinder at pressures in excess of 15 psig.** If pressures exceeding this limit are utilized, special explosion and fire safety precautions must be implemented.

SPECIAL PRECAUTIONS FOR HANDLING GAS CYLINDERS: Protect cylinders against physical damage. Store in cool, dry, well-ventilated area, away from sources of heat, ignition and direct sunlight. Do not allow area where cylinders are stored to exceed 52°C (125°F). Isolate from halogens and oxidizers such as oxygen, chlorine, or fluorine. Use a check valve or trap in the discharge line to prevent hazardous backflow. Never tamper with pressure relief devices in valves and cylinders. Electrical equipment should be non-sparking or explosion proof. The following rules are applicable to work situations in which cylinders are being used:

Before Use: Move cylinders with a suitable hand-truck. Do not drag, slide or roll cylinders. Do not drop cylinders or permit them to strike each other. Secure cylinders firmly. Leave the valve protection cap (where provided) in-place until cylinder is ready for use.

During Use: Use designated CGA fittings and other support equipment. Do not use adapters. Do not heat cylinder by any means to increase the discharge rate of the product from the cylinder. Use check valve or trap in discharge line to prevent hazardous backflow into the cylinder. Do not use oils or grease on gas-handling fittings or equipment.

After Use: Close main cylinder valve. Valves should be closed tightly, to prevent evaporation of acetone. Replace valve protection cap. Mark empty cylinders "EMPTY".

7. HANDLING and STORAGE (Continued)

NOTE: Use only DOT or ASME code containers designed for acetylene storage. Earth-ground and bond all lines and equipment associated with this product. Close valve after each use and when empty. Cylinders must not be recharged except by or with the consent of owner. For additional information refer to the Compressed Gas Association Pamphlet P-1, *Safe Handling of Compressed Gases in Containers.* Additionally, refer to CGA Bulletin SB-2 "*Oxygen Deficient Atmospheres*" and NFPA Bulletin 58.

For welding and brazing operations, refer to ANSI Z-49.1 "*Safety in Welding and Cutting*" and OSHA safety regulations for welding, cutting, and brazing (29 CFR 1910.252).

PROTECTIVE PRACTICES DURING MAINTENANCE OF CONTAMINATED EQUIPMENT: Follow practices indicated in Section 6 (Accidental Release Measures). Make certain application equipment is locked and tagged-out safely. Purge gas handling equipment with inert gas (e.g., nitrogen) before attempting repairs.

8. EXPOSURE CONTROLS - PERSONAL PROTECTION

VENTILATION AND ENGINEERING CONTROLS: Use with adequate ventilation to ensure oxygen levels are above 19.5% in the work area. Local exhaust ventilation is preferred, because it prevents Acetylene dispersion into the work place by eliminating it at its source. If appropriate, install automatic monitoring equipment to detect the level of oxygen and the presence of potentially explosive air-gas mixtures.

RESPIRATORY PROTECTION: Maintain oxygen levels above 19.5% in the workplace. Use supplied air respiratory protection if oxygen levels are below 19.5% or during emergency response to a release of Acetylene. If respiratory protection is required, follow the requirements of the Federal OSHA Respiratory Protection Standard (29 CFR 1910.134), or equivalent State standards.

EYE PROTECTION: Splash goggles or safety glasses, for protection from rapidly expanding gases and splashes of the acetone.

HAND PROTECTION: Wear mechanically-resistant gloves when handling cylinders of Acetylene. Wear Solvex or neoprene gloves if operations could lead to a potential exposure to acetone.

BODY PROTECTION: Use body protection appropriate for task. Transfer of large quantities under pressure may require protective equipment appropriate to protect employees from splashes of liquefied product, as well as fire retardant items.

9. PHYSICAL and CHEMICAL PROPERTIES

VAPOR DENSITY (@ 0°C): 1.1716 kg/m^3 (0.073 lb/ft^3)
SPECIFIC GRAVITY (air = 1): 0.906
SOLUBILITY IN WATER @0°C (32°F) 1 atm: 1.7 vol/vol
EVAPORATION RATE (nBuAc = 1): Not applicable.
ODOR THRESHOLD (Detection): 226 ppm
COEFFICIENT WATER/OIL DISTRIBUTION: Not applicable.

pH: Not applicable.
FREEZING POINT (@ 10 psig): -119°C (-182°F)
BOILING POINT: -84°C (-118°F) [sublimes]
EXPANSION RATIO: Not applicable.
VAPOR PRESSURE (psia): 649.6
SPECIFIC VOLUME (ft^3/lb): 14.7

APPEARANCE AND COLOR: Colorless gas with a garlic-like, odor dissolved in acetone.

HOW TO DETECT THIS SUBSTANCE (warning properties): There are no distinct warning properties. In terms of leak detection, fittings and joints can be painted with a soap solution to detect leaks, which will be indicated by a bubble formation.

10. STABILITY and REACTIVITY

STABILITY: Acetylene is stable at standard temperatures and pressures. Gaseous acetylene may decompose violently at elevated temperatures and pressures. Acetylene must not be used above pressure greater than 15 psig. The higher the pressure, the more likely it is for a reaction to occur.

DECOMPOSITION PRODUCTS: Carbon and hydrogen. When ignited in the presence of oxygen, carbon monoxide and carbon dioxide are formed.

10. STABILITY and REACTIVITY (Continued)

MATERIALS WITH WHICH SUBSTANCE IS INCOMPATIBLE: Acetylene is not compatible with the following materials. Strong oxidizers (e.g. chlorine, bromine pentafluoride, oxygen, oxygen difluoride, and nitrogen trifluoride), brass (with a copper content exceeding 65%), calcium hypochlorite, various heavy metals (copper, silver, mercury) and the salts of these metals, halogens (bromine, chlorine, iodine, fluorine), hydrides (e.g. sodium hydride, cesium hydride), ozone, perchloric acid; potassium.

HAZARDOUS POLYMERIZATION: Can occur when heated or under pressure.

CONDITIONS TO AVOID: Contact with incompatible materials and exposure to heat, sparks and other sources of ignition. Cylinders exposed to high temperatures or direct flame can rupture or burst. Liquid nitrogen should not be used as a trap, as it may cause acetylene to condense to its liquid or solid state, both of which are explosive.

PART IV *Is there any other useful information about this material?*

11. TOXICOLOGICAL INFORMATION

TOXICITY DATA: The following information is for Acetylene.

TCLo (inhalation, human) = 20 pph; central nervous system, respiratory system effects.
LCLo (inhalation, human) = 50 pph/5 minutes
LCLo (inhalation, human) = 500,000 ppm/5 minutes

Other data pertaining to the effects of Acetylene inhalation on humans are as follows:

Concentration	Symptom
100,000 ppm	Intoxication (drowsiness, dizziness, giddiness).
200,000 ppm	Severe intoxication.
300,000 ppm	Loss of coordination.
350,000 ppm	Unconsciousness after 5 minutes of exposure.

Effects on Short-Term Inhalation: Animals have shown tolerance to 10% Acetylene. In studies with dogs, cats, and rabbits, Acetylene acts as an anesthetic at 20% exposure. Recovery occurs if the oxygen level is maintained. In an oxygen-deficient environment, death may occur after 5-10 minutes. Rodents exposed to 25, 50, and 80 percent Acetylene in oxygen for 1-2 hours daily (93 hours total exposure), evidenced no weight change or cellular damage. Mixtures of 80% Acetylene/20% oxygen caused a rise in blood pressure in an exposed cat.

SUSPECTED CANCER AGENT: Acetylene is not found on the following lists: FEDERAL OSHA Z LIST, NTP, IARC, CAL/OSHA, and therefore is not considered to be, nor suspected to be a cancer-causing agent by these agencies.

IRRITANCY OF PRODUCT: Acetylene is not irritating; however, contact with the acetone component of Acetylene can be slightly irritating to contaminated skin or eyes.

SENSITIZATION TO THE PRODUCT: Acetylene is not known to cause sensitization in humans.

REPRODUCTIVE TOXICITY INFORMATION: Listed below is information concerning the effects Acetylene on the human reproductive system.

Mutagenicity: No mutagenicity effects have been described for Acetylene.
Embryotoxcity: No embryotoxic effects have been described for Acetylene.
Teratogenicity: No teratogenicity effects have been described for Acetylene.
Reproductive Toxicity: No reproductive toxicity effects have been described for Acetylene.

A mutagen is a chemical which causes permanent changes to genetic material (DNA) such that the changes will propagate through generation lines. An embryotoxin is a chemical which causes damage to a developing embryo (i.e. within the first eight weeks of pregnancy in humans), but the damage does not propagate across generational lines. A teratogen is a chemical which causes damage to a developing fetus, but the damage does not propagate across generational lines. A reproductive toxin is any substance which interferes in any way with the reproductive process.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Acute or chronic respiratory conditions may be aggravated by overexposure to the components of Acetylene.

BIOLOGICAL EXPOSURE INDICES (BEIs): Currently, Biological Exposure Indices (BEIs) are not applicable for this gas.

RECOMMENDATIONS TO PHYSICIANS: Administer oxygen, if necessary. Treat symptoms and eliminate exposure.

12. ECOLOGICAL INFORMATION

ENVIRONMENTAL STABILITY: This gas will be dissipated rapidly in well-ventilated areas. The following environmental data are available for this gas.

ACETYLENE: Water Solubility = 100 vol./100 vol. at 18 EC. Acetylene is not expected to be harmful to aquatic life. Only moderately toxic to fish. Volatility and low solubility suggest it would be rare for water to become critically polluted from accidental releases. Acetylene is biodegraded through various plant and bacterial systems by inactivating atmospheric acetylene through their nitrogen- fixing mechanisms.

EFFECT OF MATERIAL ON PLANTS or ANIMALS: Any adverse effect on animals would be related to oxygen deficient environments and the anesthetic properties of Acetylene at high concentrations of exposure. The following data are available for effects on plant-life:

Sweet pea: declination in seedling: 250 ppm, 3 days
Tomato: Epinasty in petiole: 50 ppm, 2 days.

EFFECT OF CHEMICAL ON AQUATIC LIFE: The following aquatic toxicity data are available for Acetylene.

LC50 (river trout): 33 hours, 200 mg/L

13. DISPOSAL CONSIDERATIONS

PREPARING WASTES FOR DISPOSAL: Waste disposal must be in accordance with appropriate Federal, State, and local regulations. Return cylinders with any residual product to Quimby Corporation. Do not dispose of locally.

14. TRANSPORTATION INFORMATION

THIS MATERIAL IS HAZARDOUS AS DEFINED BY 49 CFR 172.101 BY THE U.S. DEPARTMENT OF TRANSPORTATION.

PROPER SHIPPING NAME:	Acetylene, dissolved
HAZARD CLASS NUMBER and DESCRIPTION:	2.1 (Flammable Gas)
UN IDENTIFICATION NUMBER:	UN 1001
PACKING GROUP:	Not Applicable
DOT LABEL(S) REQUIRED:	Flammable Gas

NORTH AMERICAN EMERGENCY RESPONSE GUIDEBOOK NUMBER (2000): 116

MARINE POLLUTANT: Acetylene is not classified by the DOT as a Marine Pollutant (as defined by 49 CFR 172.101, Appendix B).

TRANSPORT CANADA TRANSPORTATION OF DANGEROUS GOODS REGULATIONS: THIS MATERIAL IS CONSIDERED AS DANGEROUS GOODS. Use the above information for the preparation of Canadian Shipments.

15. REGULATORY INFORMATION

U.S. SARA REPORTING REQUIREMENTS: Acetylene is not subject to the reporting requirements of Sections 302, 304, and 313 of Title III of the Superfund Amendments and Reauthorization Act.

U.S. SARA THRESHOLD PLANNING QUANTITY: Not applicable.

U.S. CERCLA REPORTABLE QUANTITY (RQ): Not applicable.

CANADIAN DSL/NDSL INVENTORY STATUS: Acetylene is on the DSL Inventory.

U.S. TSCA INVENTORY STATUS: Acetylene is on the TSCA Inventory.

OTHER U.S. FEDERAL REGULATIONS: Acetylene is subject to the reporting requirements of Section 112(r) of the Clean Air Act. The Threshold Quantity for this gas is 10,000 lb. Depending on specific operations involving the use of Acetylene, the regulations of the Process Safety Management of Highly Hazardous Chemicals may be applicable (29 CFR 1910.119). Under this regulation Acetylene is not listed in Appendix A, however, any process that involves a flammable gas on-site, in one location, in quantities of 10,000 lb (4,553 kg) or greater is covered under this regulation unless it is used as a fuel.

15. REGULATORY INFORMATION (Continued)

U.S. STATE REGULATORY INFORMATION: Acetylene is covered under specific State regulations, as denoted below:

Alaska - Designated Toxic and Hazardous Substances: Acetylene.
California - Permissible Exposure Limits for Chemical Contaminants: Acetylene.
Florida - Substance List: Acetylene.
Illinois - Toxic Substance List: Acetylene.
Kansas - Section 302/313 List: No.
Massachusetts - Substance List: Acetylene.
Michigan - Critical Materials Register: No.
Minnesota - List of Hazardous Substances: Acetylene.
Missouri - Employer Information/Toxic Substance List: Acetylene.
New Jersey - Right to Know Hazardous Substance List: Acetylene.
North Dakota - List of Hazardous Chemicals, Reportable Quantities: No.
Pennsylvania - Hazardous Substance List: Acetylene.
Rhode Island - Hazardous Substance List: Acetylene.
Texas - Hazardous Substance List: No.
West Virginia - Hazardous Substance List: No.
Wisconsin - Toxic and Hazardous Substances: No.

CALIFORNIA SAFE DRINKING WATER AND TOXIC ENFORCEMENT ACT (PROPOSITION 65): Acetylene is not on the California Proposition 65 lists.

LABELING:

DANGER: FLAMMABLE GAS UNDER PRESSURE.
CAN FORM EXPLOSIVE MIXTURES WITH AIR.
FUSIBLE PLUGS ON TOP, BOTTOM, OR VALVE MELT AT 208 °F (98-104 °C).
DO NOT DISCHARGE AT PRESSURES ABOVE 15 PSIG (103 kPa)

ODOR: Garlic-like.

Keep away from heat, flames, and sparks.
Store and use width adequate ventilation.
Use equipment rated for cylinder pressure.
Close valve after each use and when empty.
Use in accordance with the Material Safety Data Sheet.

NOTE: Cylinder contains acetone solvent, which may cause irritation.
DO NOT REMOVE THIS PRODUCT LABEL

CANADIAN WHMIS SYMBOLS:

Class A: Compressed Gases
Class B1: Flammable Gas

16. OTHER INFORMATION

The information contained herein is based on data considered accurate. However, no warranty is expressed or implied regarding the accuracy of these data or the results to be obtained from the use thereof. Quimby Corp. assumes no responsibility for injury to the vendee or third persons proximately caused by the material if reasonable safety procedures are not adhered to as stipulated in the data sheet. Additionally, Quimby Corp. assumes no responsibility for injury to vendee or third persons proximately caused by abnormal use of the material even if reasonable safety procedures are followed. Furthermore, vendee assumes the risk in his use of the material.

DEFINITIONS OF TERMS

A large number of abbreviations and acronyms appear on a MSDS. Some of these which are commonly used include the following:

CAS #: This is the Chemical Abstract Service Number which uniquely identifies each constituent. It is used for computer-related searching.

EXPOSURE LIMITS IN AIR:

ACGIH - American Conference of Governmental Industrial Hygienists, a professional association which establishes exposure limits.

TLV - Threshold Limit Value - an airborne concentration of a substance which represents conditions under which it is generally believed that nearly all workers may be repeatedly exposed without adverse effect. The duration must be considered, including the 8-hour Time Weighted Average **(TWA)**, the 15-minute Short Term Exposure Limit, and the instantaneous Ceiling Level **(C)**. Skin absorption effects must also be considered.

OSHA - U.S. Occupational Safety and Health Administration.

PEL - Permissible Exposure Limit - This exposure value means exactly the same as a TLV, except that it is enforceable by OSHA. The OSHA Permissible Exposure Limits are based in the 1989 PELs and the June, 1993 Air Contaminants Rule (Federal Register: 58: 35338-35351 and 58: 40191). Both the current PELs and the vacated PELs are indicated. The phrase, "Vacated 1989 PEL," is placed next to the PEL which was vacated by Court Order.

IDLH - Immediately Dangerous to Life and Health - This level represents a concentration from which one can escape within 30-minutes without suffering escape-preventing or permanent injury. **The DFG - MAK** is the Republic of Germany's Maximum Exposure Level, similar to the U.S. PEL. **NIOSH** is the National Institute of Occupational Safety and Health, which is the research arm of the U.S. Occupational Safety and Health Administration (**OSHA**). NIOSH issues exposure guidelines called Recommended Exposure Levels (**RELs**). When no exposure guidelines are established, an entry of **NE** is made for reference.

HAZARD RATINGS:

HAZARDOUS MATERIALS IDENTIFICATION SYSTEM: Health Hazard: **0** (minimal acute or chronic exposure hazard); **1** (slight acute or chronic exposure hazard); **2** (moderate acute or significant chronic exposure hazard); **3** (severe acute exposure hazard; onetime overexposure can result in permanent injury and may be fatal); **4** (extreme acute exposure hazard; onetime overexposure can be fatal). Flammability Hazard: **0** (minimal hazard); **1** (materials that require substantial pre-heating before burning); **2** (combustible liquid or solids; liquids with a flash point of 38-93°C [100-200°F]); **3** (Class IB and IC flammable liquids with flash points below 38°C [100°F]); **4** (Class IA flammable liquids with flash points below 23°C [73°F] and boiling points below 38°C [100°F]. Reactivity Hazard: **0** (normally stable); 1 (material that can become unstable at elevated temperatures or which can react slightly with water); **2** (materials that are unstable but do not detonate or which can react violently with water); **3** (materials that can detonate when initiated or which can react explosively with water); **4** (materials that can detonate at normal temperatures or pressures).

NATIONAL FIRE PROTECTION ASSOCIATION: Health Hazard: **0** (material that on exposure under fire conditions would offer no hazard beyond that of ordinary combustible materials); **1** (materials that on exposure under fire conditions could cause irritation or minor residual injury); **2** (materials that on intense or continued exposure under fire conditions could cause temporary incapacitation or possible residual injury); **3** (materials that can on short exposure could cause serious temporary or residual injury); **4** (materials that under very short exposure could cause death or major residual injury). Flammability Hazard and Reactivity Hazard: Refer to definitions for "Hazardous Materials Identification System".

FLAMMABILITY LIMITS IN AIR:

Much of the information related to fire and explosion is derived from the National Fire Protection Association (**NFPA**). Flash Point - Minimum temperature at which a liquid gives off sufficient vapors to form an ignitable mixture with air. Autoignition Temperature: The minimum temperature required to initiate combustion in air with no other source of ignition. LEL - the lowest percent of vapor in air, by volume, that will explode or ignite in the presence of an ignition source. UEL - the highest percent of vapor in air, by volume, that will explode or ignite in the presence of an ignition source.

TOXICOLOGICAL INFORMATION:

Possible health hazards as derived from human data, animal studies, or from the results of studies with similar compounds are presented. Definitions of some terms used in this section are: **LD_{50}** - Lethal Dose (solids & liquids) which kills 50% of the exposed animals; **LC_{50}** - Lethal Concentration (gases) which kills 50% of the exposed animals; **ppm** concentration expressed in parts of material per million parts of air or water; **mg/m^3** concentration expressed in weight of substance per volume of air; **mg/kg** quantity of material, by weight, administered to a test subject, based on their body weight in kg. Data from several sources are used to evaluate the cancer-causing potential of the material. The sources are: **IARC** - the International Agency for Research on Cancer; **NTP** - the National Toxicology Program, **RTECS** - the Registry of Toxic Effects of Chemical Substances, **OSHA** and **CAL/OSHA**. IARC and NTP rate chemicals on a scale of decreasing potential to cause human cancer with rankings from 1 to 4. Subrankings (2A, 2B, etc.) are also used. Other measures of toxicity include **TDLo**, the lowest dose to cause a symptom and **TCLo** the lowest concentration to cause a symptom; **TDo**, **LDLo**, and **LDo**, or **TC**, **TCo**, **LCLo**, and **LCo**, the lowest dose (or concentration) to cause lethal or toxic effects. **BEI** - Biological Exposure Indices, represent the levels of determinants which are most likely to be observed in specimens collected from a healthy worker who has been exposed to chemicals to the same extent as a worker with inhalation exposure to the TLV. Ecological Information: EC is the effect concentration in water.

REGULATORY INFORMATION:

This section explains the impact of various laws and regulations on the material. **EPA** is the U.S. Environmental Protection Agency. **WHMIS** is the Canadian Workplace Hazardous Materials Information System. **DOT** and **TC** are the U.S. Department of Transportation and the Transport Canada, respectively. Superfund Amendments and Reauthorization Act **(SARA)**; the Canadian Domestic/Non-Domestic Substances List **(DSL/NDSL)**; the U.S. Toxic Substance Control Act **(TSCA)**; Marine Pollutant status according to the **DOT**; the Comprehensive Environmental Response, Compensation, and Liability Act **(CERCLA or Superfund)**; and various state regulations.

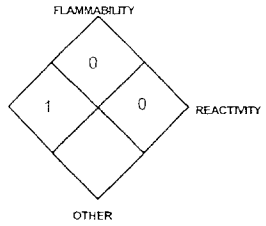
welding

MATERIAL SAFETY DATA SHEET

Prepared to U.S. OSHA, CMA, ANSI and Canadian WHMIS Standards

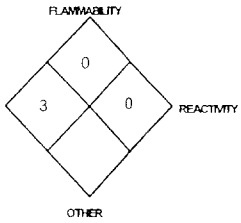
ARGON GAS

NFPA RATING



LIQUID ARGON

NFPA RATING



PART I *What is the material and what do I need to know in an emergency?*

1. PRODUCT IDENTIFICATION

CHEMICAL NAME; CLASS: [redacted]

Document Number: 00007

PRODUCT USE: For general analytical/synthetic chemical uses.
SUPPLIER/MANUFACTURER'S NAME: Quimby Corporation
ADDRESS: 1603 NW 14th Ave
Portland, OR 97209

BUSINESS PHONE: (503)221-1100
EMERGENCY PHONE: INFOTRAC: 1-800-535-5053

DATE OF PREPARATION: May 12, 1996
SECOND REVISION: December 10, 1999

2. COMPOSITION and INFORMATION ON INGREDIENTS

CHEMICAL NAME	CAS #	mole %	EXPOSURE LIMITS IN AIR					
			ACGIH		OSHA			
			TLV ppm	STEL ppm	PEL ppm	STEL ppm	IDLH ppm	OTHER
Argon	7440-37-1	99.995%	There are no specific exposure limits for Argon. Argon is a simple asphyxiant (SA). Oxygen levels should be maintained above 19.5%.					
Maximum Impurities		<0.01 (50 ppm)	None of the trace impurities in this mixture contribute significantly to the hazards associated with the product. All hazard information pertinent to this product has been provided in this Material Safety Data Sheet, per the requirements of the OSHA Hazard Communication Standard (29 CFR 1910.1200) and State equivalent standards.					

NE = Not Established. C = Ceiling Limit. See Section 16 for Definitions of Terms Used.

NOTE: All WHMIS required information is included. It is located in appropriate sections based on the ANSI Z400.1-1993 format.

3. HAZARD IDENTIFICATION

EMERGENCY OVERVIEW: Argon is a colorless, odorless, non-flammable gas or a colorless, odorless, cryogenic liquid. The cryogenic liquid will rapidly boil to the gas at standard temperatures and pressures. The liquefied gas can cause frostbite to any contaminated tissue. The main health hazard associated with releases of this gas is asphyxiation, by displacement of oxygen.

ARGON GAS

HAZARDOUS MATERIAL INFORMATION SYSTEM

HEALTH	(BLUE)	1
FLAMMABILITY	(RED)	0
REACTIVITY	(YELLOW)	0
PROTECTIVE EQUIPMENT		B

EYES	RESPIRATORY	HANDS	BODY
	See Section 8		See Section 8

For routine industrial applications

LIQUID ARGON

HAZARDOUS MATERIAL INFORMATION SYSTEM

HEALTH	(BLUE)	3
FLAMMABILITY	(RED)	0
REACTIVITY	(YELLOW)	0
PROTECTIVE EQUIPMENT		X

EYES	RESPIRATORY	HANDS	BODY
	See Section 8		See Section 8

For routine industrial applications

See Section 16 for Definition of Ratings

SYMPTOMS OF OVEREXPOSURE BY ROUTE OF EXPOSURE: The most significant route of overexposure for this gas is by inhalation. The following paragraphs describe symptoms of exposure by route of exposure.

INHALATION: High concentrations of this gas can cause an oxygen-deficient environment. Individuals breathing such an atmosphere may experience symptoms which include headaches, ringing in ears, dizziness, drowsiness, unconsciousness, nausea, vomiting, and depression of all the senses. The skin of a victim may have a blue color. Under some circumstances, death may occur. The effects associated with various levels of oxygen are as follows:

CONCENTRATION	SYMPTOMS OF EXPOSURE
12-16% Oxygen:	Breathing and pulse rate increased, muscular coordination slightly disturbed.
10-14% Oxygen:	Emotional upset, abnormal fatigue, disturbed respiration.
6-10% Oxygen:	Nausea and vomiting, collapse or loss of consciousness.
Below 6%:	Convulsive movements, possible respiratory collapse, and death.

OTHER POTENTIAL HEALTH EFFECTS: Contact with cryogenic liquid or rapidly expanding gases (which are released under high pressure) may cause frostbite. Symptoms of frostbite include change in skin color to white or grayish-yellow. The pain after contact with liquid can quickly subside.

HEALTH EFFECTS OR RISKS FROM EXPOSURE: An Explanation in **Lay Terms**. Overexposure to Argon may cause the following health effects:

ACUTE: The most significant hazard associated with this gas is inhalation of oxygen-deficient atmospheres. Symptoms of oxygen deficiency include respiratory difficulty, headache, dizziness, and nausea. At high concentrations, unconsciousness or death may occur. Contact with cryogenic liquid or rapidly expanding gases may cause frostbite.

CHRONIC: There are currently no known adverse health effects associated with chronic exposure to Argon.

TARGET ORGANS: Respiratory system.

PART II *What should I do if a hazardous situation occurs?*

4. FIRST-AID MEASURES

RESCUERS SHOULD NOT ATTEMPT TO RETRIEVE VICTIMS OF EXPOSURE TO ARGON WITHOUT ADEQUATE PERSONAL PROTECTIVE EQUIPMENT. At a minimum, Self-Contained Breathing Apparatus should be worn.

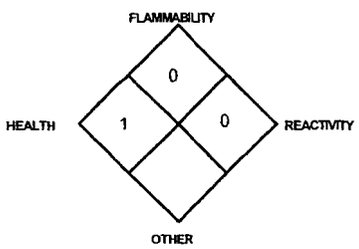
Remove victim(s) to fresh air as quickly as possible. In case of contact, immediately flush eyes with copious amounts of water for at least 15 minutes. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Only trained personnel should administer supplemental oxygen.

In case of frostbite, place the frostbitten part in warm water. DO NOT USE HOT WATER. If warm water is not available or is impractical to use, wrap the affected parts gently in blankets. Alternatively, if the fingers or hands are frostbitten, place the affected area in the armpit. Encourage victim to gently exercise the affected part while being warmed. Seek immediate medical attention.

Victim(s) must be taken for medical attention. Rescuers should be taken for medical attention, if necessary. Take copy of label and MSDS to physician or other health professional with victim(s).

5. FIRE-FIGHTING MEASURES

ARGON GAS
NFPA RATING



See Section 16 for Definition of Ratings

FLASH POINT: Not applicable.

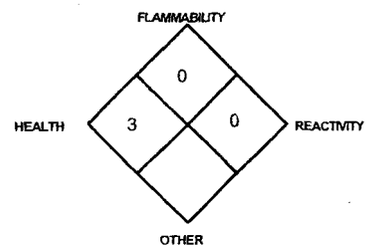
AUTOIGNITION TEMPERATURE: Not applicable.

FLAMMABLE LIMITS (in air by volume, %):
Lower (LEL): Not applicable.
Upper (UEL): Not applicable.

FIRE EXTINGUISHING MATERIALS: Non-flammable, inert gas. Use extinguishing media appropriate for surrounding fire.

UNUSUAL FIRE AND EXPLOSION HAZARDS: Argon does not burn; however, containers, when involved in fire, may rupture or burst in the heat of the fire.

LIQUID ARGON
NFPA RATING



RESPONSE TO FIRE INVOLVING CRYOGEN: Cryogenic liquids can be particularly dangerous during fires because of their potential to rapidly freeze water. Careless use of water may cause heavy icing. Furthermore, relatively warm water greatly increases the evaporation rate of Argon. If large concentrations of Argon gas are present, the water vapor in the surrounding air will condense, creating a dense fog that makes it difficult to find fire exits or equipment. Liquid Argon, when exposed to the atmosphere, will produce a cloud of ice/fog in the air upon its release.

Explosion Sensitivity to Mechanical Impact: Not sensitive.
Explosion Sensitivity to Static Discharge: Not sensitive.

SPECIAL FIRE-FIGHTING PROCEDURES: Structural firefighters must wear Self-Contained Breathing Apparatus and full protective equipment. Move fire-exposed cylinders if it can be done without risk to firefighters. Otherwise, cool containers with hose stream and protect personnel. Withdraw immediately in case of rising sounds from venting safety device or any discoloration of tanks due to the fire.

6. ACCIDENTAL RELEASE MEASURES

SPILL AND LEAK RESPONSE: Uncontrolled releases should be responded to by trained personnel using pre-planned procedures. Proper protective equipment should be used. In case of a release, clear the affected area and protect people. Minimum Personal Protective Equipment should be **Level B: protective clothing, gloves resistant to tears, and Self-Contained Breathing Apparatus**.

6. ACCIDENTAL RELEASE MEASURES (Continued)

SPILL AND LEAK RESPONSE (continued): Allow the gas, which is heavier than air, to dissipate. Monitor the surrounding area for oxygen levels. The atmosphere must have at least 19.5 percent oxygen before personnel can be allowed in the area without Self-Contained Breathing Apparatus. Attempt to close the main source valve prior to entering the area. If this does not stop the release (or if it is not possible to reach the valve), allow the gas to release in-place or remove it to a safe area and allow the gas to be released there.

RESPONSE TO CRYOGENIC RELEASE: Clear the affected area and allow the liquid to evaporate and the gas to dissipate. After the gas is formed, follow the instructions provided in the previous paragraph. If the area must be entered by emergency personnel, SCBA, Kevlar gloves, and appropriate foot and leg protection must be worn.

PART III *How can I prevent hazardous situations from occurring?*

7. HANDLING and STORAGE

WORK PRACTICES AND HYGIENE PRACTICES: As with all chemicals, avoid getting Argon IN YOU. Do not eat or drink while handling chemicals. Be aware of any signs of dizziness or fatigue; exposures to fatal concentrations of Argon could occur without any significant warning symptoms.

STORAGE AND HANDLING PRACTICES: Cylinders should be stored in dry, well-ventilated areas away from sources of heat. Compressed gases can present significant safety hazards. Store containers away from heavily trafficked areas and emergency exits. Post "No Smoking or Open Flames" signs in storage or use areas.

SPECIAL PRECAUTIONS FOR HANDLING GAS CYLINDERS: Protect cylinders against physical damage. Store in cool, dry, well-ventilated fireproof area, away from flammable materials and corrosive atmospheres. Store away from heat and ignition sources and out of direct sunlight. Do not store near elevators, corridors, or loading docks. Do not allow area where cylinders are stored to exceed 52°C (125°F). Use only storage containers and equipment (pipes, valves, fittings to relieve pressure, etc.) designed for the storage of Liquid Argon. Do not store containers where they can come into contact with moisture. Cylinders should be stored upright and be firmly secured to prevent falling or being knocked over. Cylinders can be stored in the open, but in such cases, should be protected against extremes of weather and from the dampness of the ground to prevent rusting.

Keep Dewar flasks covered with loose-fitting cap. This prevents air or moisture from entering the container, yet allows pressure to escape. Use only the stopper or plug supplied with the container. Ensure that ice does not form in the neck of flasks. If the neck of Dewar flask is blocked by ice or "frozen" air, follow manufacturer's instruction for removing it. Ice can also cause pressure release valves to fail. Never tamper with pressure relief devices in valves and cylinders. The following rules are applicable to situations in which cylinders are being used:

Before Use: Move cylinders with a suitable hand truck. Do not drag, slide, or roll cylinders. Do not drop cylinders or permit them to strike each other. Secure cylinders firmly. Leave the valve protection cap in place (where provided) until cylinder is ready for use.

During Use: Use designated CGA fittings and other support equipment. Do not use adapters. Do not heat cylinder by any means to increase the discharge rate of the product from the cylinder. Use check valve or trap in discharge line to prevent hazardous backflow into the cylinder. Do not use oils or grease on gas-handling fittings or equipment.

After Use: Close main cylinder valve. Replace valve protection cap (where provided). Mark empty cylinders "EMPTY".

NOTE: Use only DOT or ASME code containers. Cylinders must not be recharged except by or with the consent of owner. For additional information refer to the Compressed Gas Association Pamphlet P-1, *Safe Handling of Compressed Gases in Containers.* For cryogenic liquids, refer to CGA P-12, *Safe Handling of Cryogenic Liquids.* Additionally, refer to CGA Bulletin SB-2 *"Oxygen Deficient Atmospheres"*.

PROTECTIVE PRACTICES DURING MAINTENANCE OF CONTAMINATED EQUIPMENT: Follow practices indicated in Section 6 (Accidental Release Measures). Make certain that application equipment is locked and tagged-out safely. Purge gas handling equipment with inert gas (e.g., Nitrogen) before attempting repairs.

8. EXPOSURE CONTROLS - PERSONAL PROTECTION

VENTILATION AND ENGINEERING CONTROLS: Use with adequate ventilation to maintain oxygen level above 19.5% in the work area. Local exhaust ventilation is preferred, because it prevents Argon dispersion into the work place by eliminating it at its source. If appropriate, install automatic monitoring equipment to detect the level of oxygen.

8. EXPOSURE CONTROLS - PERSONAL PROTECTION (Continued)

RESPIRATORY PROTECTION: Maintain oxygen level above 19.5% in the workplace. Use supplied air respiratory protection if oxygen level is below 19.5% or during emergency response to a release of Argon. If respiratory protection is required, follow the requirements of the Federal OSHA Respiratory Protection Standard (29 CFR 1910.134) or equivalent State standards.

EYE PROTECTION: Splash goggles, face shields, or safety glasses. Face shields must be worn when using cryogenic Argon.

HAND PROTECTION: Wear gloves resistant to tears when handling cylinders of Argon. Use low-temperature protective gloves (e.g., Kevlar) when working with containers of Liquid Argon.

BODY PROTECTION: Use body protection appropriate for task. Transfer of large quantities under pressure may require protective equipment appropriate to protect employees from splashes of liquefied product, as well as to provide sufficient insulation from extreme cold.

9. PHYSICAL and CHEMICAL PROPERTIES

VAPOR DENSITY: 1.650 kg/m^3 (0.103 lb/ft^3)
SPECIFIC GRAVITY (air = 1): 1.380
SOLUBILITY IN WATER v/v @ 20 °C (68°F): 3.37%
VAPOR PRESSURE: Not applicable.
COEFFICIENT WATER/OIL DISTRIBUTION: Log P = 0.94.
SPECIFIC VOLUME (ft^3/lb): 9.7

EVAPORATION RATE (nBuAc = 1): Not applicable.
FREEZING POINT: -189.2°C (-308.9°F)
BOILING POINT (@ 1 atm.): -185.9°C (-302.6°F)
ODOR THRESHOLD: Not applicable.
pH: Not applicable.
EXPANSION RATIO: 841 (cryogenic liquid)

APPEARANCE AND COLOR: Argon is a colorless, odorless gas or a colorless, odorless, cryogenic liquid.

HOW TO DETECT THIS SUBSTANCE (warning properties): There are no unusual warning properties associated with a release of Argon. In terms of leak detection, fittings and joints can be painted with a soap solution to detect leaks, which will be indicated by a bubble formation.

10. STABILITY and REACTIVITY

STABILITY: Normally stable, inert gas.

DECOMPOSITION PRODUCTS: None.

MATERIALS WITH WHICH SUBSTANCE IS INCOMPATIBLE: None. Argon is an inert gas.

HAZARDOUS POLYMERIZATION: Will not occur.

CONDITIONS TO AVOID: Avoid exposing cylinders to extremely high temperatures, which could cause the cylinders to rupture or burst.

PART IV *Is there any other useful information about this material?*

11. TOXICOLOGICAL INFORMATION

TOXICITY DATA: The following data are for Argon:

Standard animal toxicity values are not available. Male rats were exposed for 6 days to 20% oxygen and 80% Argon at 1 atmosphere ambient pressure. No significant changes in blood cell counts or bone marrow were observed. Other animal studies concern the deficiency of (hypoxia) or the narcotic effects of various pressures of Argon, the effects of increased Argon pressures on the central nervous system and decompression sickness.

Eyes: Argon gas injected into the anterior (front) chamber of the eyes of rabbits caused no injury and was reabsorbed at about the same rate as air.

SUSPECTED CANCER AGENT: Argon is not found on the following lists: FEDERAL OSHA Z LIST, NTP, CAL/OSHA, IARC, and therefore is neither considered to be nor suspected to be a cancer-causing agent by these agencies.

IRRITANCY OF PRODUCT: Argon is not an irritant. However, contact with rapidly expanding gases can cause frostbite and damage to exposed skin and eyes.

SENSITIZATION OF PRODUCT: Argon is not a sensitizer after prolonged or repeated exposures.

11. TOXICOLOGICAL INFORMATION (Continued)

REPRODUCTIVE TOXICITY INFORMATION: Listed below is information concerning the effects of Argon on the human reproductive system.

Mutagenicity: Argon is not expected to cause mutagenic effects in humans.
Embryotoxicity: Argon is not expected to cause embryotoxic effects in humans.
Teratogenicity: Argon is not expected to cause teratogenic effects in humans.
Reproductive Toxicity: Argon is not expected to cause adverse reproductive effects in humans.

A mutagen is a chemical which causes permanent changes to genetic material (DNA) such that the changes will propagate through generational lines. An embryotoxin is a chemical which causes damage to a developing embryo (i.e., within the first eight weeks of pregnancy in humans), but the damage does not propagate across generational lines. A teratogen is a chemical which causes damage to a developing fetus, but the damage does not propagate across generational lines. A reproductive toxin is any substance which interferes in any way with the reproductive process.
reproductive process.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Pre-existing respiratory conditions may be aggravated by overexposure to Argon.

RECOMMENDATIONS TO PHYSICIANS: Treat symptoms and eliminate overexposure.

BIOLOGICAL EXPOSURE INDICES (BEIs): Currently, Biological Exposure Indices (BEIs) are not applicable for this compound.

12. ECOLOGICAL INFORMATION

ENVIRONMENTAL STABILITY: Argon occurs naturally in the atmosphere. The gas will be dissipated rapidly in well-ventilated areas.

EFFECT OF MATERIAL ON PLANTS or ANIMALS: Any adverse effect on animals would be related to oxygen-deficient environments. No adverse effect is anticipated to occur to plant life, except for frost produced in the presence of rapidly expanding gases.

EFFECT OF CHEMICAL ON AQUATIC LIFE: No evidence is currently available on Argon's effects on aquatic life.

13. DISPOSAL CONSIDERATIONS

PREPARING WASTES FOR DISPOSAL: Waste disposal must be in accordance with appropriate Federal, State, and local regulations. Return cylinders with any residual product to Quimby Corporation. Do not dispose of locally.

14. TRANSPORTATION INFORMATION

THIS MATERIAL IS HAZARDOUS AS DEFINED BY 49 CFR 172.101 BY THE U.S. DEPARTMENT OF TRANSPORTATION.

	Argon Gas:	**Argon Liquid:**
PROPER SHIPPING NAME:	Argon, compressed	Argon, refrigerated liquid
HAZARD CLASS NUMBER and DESCRIPTION:	2.2 (Non-Flammable Gas)	2.2 (Non-Flammable Gas)
UN IDENTIFICATION NUMBER:	UN 1006	UN 1951
PACKING GROUP:	Not applicable.	Not applicable.
DOT LABEL(S) REQUIRED:	Non-Flammable Gas	Non-Flammable Gas

NORTH AMERICAN EMERGENCY RESPONSE GUIDEBOOK NUMBER (2000): 121 (Gas); 120 (Liquid)

MARINE POLLUTANT: Argon is not classified by the DOT as a Marine Pollutant (as defined by 49 CFR 172.101, Appendix B).

TRANSPORT CANADA TRANSPORTATION OF DANGEROUS GOODS REGULATIONS: THIS MATERIAL IS CONSIDERED AS DANGEROUS GOODS. Use the above information for the preparation of Canadian Shipments.

15. REGULATORY INFORMATION

U.S. SARA REPORTING REQUIREMENTS: Argon is not subject to the reporting requirements of Sections 302, 304, and 313 of Title III of the Superfund Amendments and Reauthorization Act.

U.S. SARA THRESHOLD PLANNING QUANTITY: Not applicable.

15. REGULATORY INFORMATION (Continued)

U.S. CERCLA REPORTABLE QUANTITY (RQ): Not applicable.

CANADIAN DSL/NDSL INVENTORY STATUS: Argon is on the DSL Inventory.

U.S. TSCA INVENTORY STATUS: Argon is on the TSCA Inventory.

OTHER U.S. FEDERAL REGULATIONS: Not applicable.

U.S. STATE REGULATORY INFORMATION: Argon is covered under specific State regulations, as denoted below:

Alaska - Designated Toxic and Hazardous Substances: Argon.
California - Permissible Exposure Limits for Chemical Contaminants: Argon.
Florida - Substance List: Argon.
Illinois - Toxic Substance List: Argon.
Kansas - Section 302/313 List: No.
Massachusetts - Substance List: Argon.
Michigan - Critical Materials Register: No.
Minnesota - List of Hazardous Substances: Argon.
Missouri - Employer Information/Toxic Substance List: Argon.
New Jersey - Right to Know Hazardous Substance List: Argon.
North Dakota - List of Hazardous Chemicals, Reportable Quantities: No.
Pennsylvania - Hazardous Substance List: Argon.
Rhode Island - Hazardous Substance List: Argon.
Texas - Hazardous Substance List: No.
West Virginia - Hazardous Substance List: No.
Wisconsin - Toxic and Hazardous Substances: No.

CALIFORNIA SAFE DRINKING WATER AND TOXIC ENFORCEMENT ACT (PROPOSITION 65): Argon is not on the California Proposition 65 lists.

LABELING:

COMPRESSED GAS:

CAUTION:
HIGH PRESSURE GAS.
CAN CAUSE RAPID SUFFOCATION.
Store and use with adequate ventilation.
Use equipment rated for cylinder pressure.
Close valve after each use and when empty.
Use in accordance with the Material Safety Data Sheet.

FIRST-AID:
IF INHALED, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.

DO NOT REMOVE THIS PRODUCT LABEL.

CRYOGENIC LIQUID:

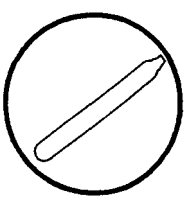
ALWAYS KEEP CONTAINER IN UPRIGHT POSITION.

WARNING:
EXTREMELY COLD LIQUID AND GAS UNDER PRESSURE.
CAN CAUSE RAPID SUFFOCATION.
CAN CAUSE SEVERE FROSTBITE.
Store and use with adequate ventilation.
Do not get liquid in eyes, on skin or clothing.
For liquid withdrawal, wear face shield and gloves.
Do not drop. Use hand truck for container movement.
Close valve after each use and when empty.
Use in accordance with the Material Safety Data Sheet.

FIRST-AID:
IF INHALED, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.
IN CASE OF FROSTBITE, obtain medical treatment immediately.

DO NOT REMOVE THIS PRODUCT LABEL.

CANADIAN WHMIS SYMBOLS: **Class A:** Compressed Gases



16. OTHER INFORMATION

The information contained herein is based on data considered accurate. However, no warranty is expressed or implied regarding the accuracy of these data or the results to be obtained from the use thereof. Quimby Corp. assumes no responsibility for injury to the vendee or third persons proximately caused by the material if reasonable safety procedures are not adhered to as stipulated in the data sheet. Additionally, Quimby Corp. assumes no responsibility for injury to vendee or third persons proximately caused by abnormal use of the material even if reasonable safety procedures are followed. Furthermore, vendee assumes the risk in his use of the material.

DEFINITIONS OF TERMS

A large number of abbreviations and acronyms appear on a MSDS. Some of these which are commonly used include the following:

CAS #: This is the Chemical Abstract Service Number which uniquely identifies each constituent. It is used for computer-related searching.

EXPOSURE LIMITS IN AIR:
ACGIH - American Conference of Governmental Industrial Hygienists, a professional association which establishes exposure limits. **TLV** - Threshold Limit Value - an airborne concentration of a substance which represents conditions under which it is generally believed that nearly all workers may be repeatedly exposed without adverse effect. The duration must be considered, including the 8-hour Time Weighted Average **(TWA)**, the 15-minute Short Term Exposure Limit, and the instantaneous Ceiling Level **(C)**. Skin absorption effects must also be considered.
OSHA - U.S. Occupational Safety and Health Administration.
PEL - Permissible Exposure Limit - This exposure value means exactly the same as a TLV, except that it is enforceable by OSHA. The OSHA Permissible Exposure Limits are based in the 1989 PELs and the June, 1993 Air Contaminants Rule (Federal Register: 58: 35338-35351 and 58: 40191). Both the current PELs and the vacated PELs are indicated. The phrase, "Vacated 1989 PEL," is placed next to the PEL which was vacated by Court Order.
IDLH - Immediately Dangerous to Life and Health - This level represents a concentration from which one can escape within 30-minutes without suffering escape-preventing or permanent injury. **The DFG - MAK** is the Republic of Germany's Maximum Exposure Level, similar to the U.S. PEL. **NIOSH** is the National Institute of Occupational Safety and Health, which is the research arm of the U.S. **O**ccupational **S**afety and **H**ealth **A**dministration (**OSHA**). NIOSH issues exposure guidelines called **R**ecommended **E**xposure **L**evels (**RELs**). When no exposure guidelines are established, an entry of **NE** is made for reference.

HAZARD RATINGS:
HAZARDOUS MATERIALS IDENTIFICATION SYSTEM: Health Hazard: **0** (minimal acute or chronic exposure hazard); **1** (slight acute or chronic exposure hazard); **2** (moderate acute or significant chronic exposure hazard); **3** (severe acute exposure hazard; onetime overexposure can result in permanent injury and may be fatal); **4** (extreme acute exposure hazard; onetime overexposure can be fatal). Flammability Hazard: **0** (minimal hazard); **1** (materials that require substantial pre-heating before burning); **2** (combustible liquid or solids; liquids with a flash point of 38-93°C [100-200°F]); **3** (Class IB and IC flammable liquids with flash points below 38°C [100°F]); **4** (Class IA flammable liquids with flash points below 23°C [73°F] and boiling points below 38°C [100°F]. Reactivity Hazard: **0** (normally stable); 1 (material that can become unstable at elevated temperatures or which can react slightly with water); **2** (materials that are unstable but do not detonate or which can react violently with water); **3** (materials that can detonate when initiated or which can react explosively with water); **4** (materials that can detonate at normal temperatures or pressures).
NATIONAL FIRE PROTECTION ASSOCIATION: Health Hazard: **0** (material that on exposure under fire conditions would offer no hazard beyond that of ordinary combustible materials); **1** (materials that on exposure under fire conditions could cause irritation or minor residual injury); **2** (materials that on intense or continued exposure under fire conditions could cause temporary incapacitation or possible residual injury); **3** (materials that can on short exposure could cause serious temporary or residual injury); **4** (materials that under very short exposure could cause death or major residual injury).

NATIONAL FIRE PROTECTION ASSOCIATION (Continued):
Flammability Hazard and Reactivity Hazard: Refer to definitions for "Hazardous Materials Identification System".

FLAMMABILITY LIMITS IN AIR:
Much of the information related to fire and explosion is derived from the National Fire Protection Association (**NFPA**). Flash Point - Minimum temperature at which a liquid gives off sufficient vapors to form an ignitable mixture with air. Autoignition Temperature: The minimum temperature required to initiate combustion in air with no other source of ignition. LEL - the lowest percent of vapor in air, by volume, that will explode or ignite in the presence of an ignition source. UEL - the highest percent of vapor in air, by volume, that will explode or ignite in the presence of an ignition source.

TOXICOLOGICAL INFORMATION:
Possible health hazards as derived from human data, animal studies, or from the results of studies with similar compounds are presented. Definitions of some terms used in this section are: **LD_{50}** - Lethal Dose (solids & liquids) which kills 50% of the exposed animals; **LC_{50}** - Lethal Concentration (gases) which kills 50% of the exposed animals; **ppm** concentration expressed in parts of material per million parts of air or water; **mg/m^3** concentration expressed in weight of substance per volume of air; **mg/kg** quantity of material, by weight, administered to a test subject, based on their body weight in kg. Data from several sources are used to evaluate the cancer-causing potential of the material. The sources are: **IARC** - the International Agency for Research on Cancer; **NTP** - the National Toxicology Program, **RTECS** - the Registry of Toxic Effects of Chemical Substances, **OSHA** and **CAL/OSHA**. IARC and NTP rate chemicals on a scale of decreasing potential to cause human cancer with rankings from 1 to 4. Subrankings (2A, 2B, etc.) are also used. Other measures of toxicity include **TDLo**, the lowest dose to cause a symptom and **TCLo** the lowest concentration to cause a symptom; **TDo**, **LDLo**, and **LDo**, or **TC**, **TCo**, **LCLo**, and **LCo**, the lowest dose (or concentration) to cause lethal or toxic effects. **BEI** - Biological Exposure Indices, represent the levels of determinants which are most likely to be observed in specimens collected from a healthy worker who has been exposed to chemicals to the same extent as a worker with inhalation exposure to the TLV. Ecological Information: EC is the effect concentration in water.

REGULATORY INFORMATION:
This section explains the impact of various laws and regulations on the material. **EPA** is the U.S. Environmental Protection Agency. **WHMIS** is the Canadian Workplace Hazardous Materials Information System. **DOT** and **TC** are the U.S. Department of Transportation and the Transport Canada, respectively. Superfund Amendments and Reauthorization Act **(SARA)**; the Canadian Domestic/Non-Domestic Substances List **(DSL/NDSL)**; the U.S. Toxic Substance Control Act **(TSCA)**; Marine Pollutant status according to the **DOT**; the Comprehensive Environmental Response, Compensation, and Liability Act **(CERCLA or Superfund)**; and various state regulations.

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No. 117

SECTION I - GENERAL INFORMATION

CHEMICAL NAME & SYNONYMS
N/A

TRADE NAME & SYNONYMS
108 DEPENDALLOY ELT 1/8

CHEMICAL FAMILY
N/A

FORMULA
X<--MIXTURE

MANUFACTURERS NAME:
X-ERGON, A PARTSMASTER CO., DIV OF NCH

ADDRESS (NUMBER, STREET, CITY, STATE & ZIP CODE)
BOX 152170
IRVING, TEXAS 75015

PREPARED BY:	PRODUCT CODE NUMBER	EMERGENCY TELEPHONE NUMBER
MICHAEL COLE/T.S.CHEMIST	10840000	214-438-1381

SECTION II- HAZARDOUS INGREDIENTS

THE HAZARDS PRESENTED BELOW ARE THOSE OF THE INDIVIDUAL COMPONENTS AS THE PRODUCT MIXTURE HAS NOT BEEN TESTED AS A WHOLE.

CHEMICAL NAME (INGREDIENTS)	HAZARD	TLV*	PEL*	CAS#
IRON(SURCE 2*)	IRRITANT	5 MG/M3	N/A	7439-89-6
POTASSIUM TITANATE(SOURCE 3*)	IRRITANT	N/A	N/A	N/A
MANGANESE(SOURCE 1*)	IRRITANT	5CL	N/A	7439-96-5
CELLULOSE(SOURCE 2*)	IRRITANT	10MG/M3	N/A	9004-34-6
TITANIUM DIOXIDE(SOURCE2*)	IRRITANT	10MG/M3	5MG/M3	13463-67-7
POTASSIUM ALUMINUM SILICATE(SO	IRRITANT	N/A	N/A	N/A
URCE 3*)SECTION VI*MORE INFO.				
NICKEL(SEE SEC. VI)	CARC.**	1MG/M3 1.	1MG/M3 1.	7440-02-0

SECTION III - PHYSICAL DATA

BOILING PT.(FAHRENHEIT)	N/A	SPEC GRAVITY (H2O=1)	:N/A
VAPOR PRESSURE (MM HG).	N/A	COLOR	N/A
VAPOR DENSITY (AIR=1)	N/A	ODOR	N/A
PH @ 100%	N/A	CLARITY	N/A
PERCENT, VOLATILE BY VOLUME (%)	N/A	EVAPORATION RATE (BU AC = 1)	N/A
SOLUBILITY IN WATER	N/A		
VISCOSITY	N/A		

SECTION IV - FIRE AND EXPLOSION HAZARD

FLASH POINT (METHOD USED)	FLAMMABLE LIMITS	LEL	UEL
N/A N/A		N/A	N/A

EXTINGUISHING MEDIA "ALCOHOL"
<--FOAM <--FOAM <--CO2 DRY <--CHEMICAL WATER <--SPRAY <--OTHER

SPECIAL FIRE FIGHTING PROCEDURES
SEE AMERICAN NATIONAL STANDARD Z49.1,SAFETY IN WELDING AND CUTTING, PUBLISHED BY THE AMERICAN WELDING SOCIETY AND OSHA PUBLICATION 2206(C.F.R. 192-1910)

UNUSUAL FIRE & EXPLOSION HAZARDS
NON-FLAMMABLE: WELDING ARC AND SPARK CAN IGNITE COMBUSTIBLES.

NFPA HAZARD RATING (0=INSIGNIFICANT;1=SLIGHT;2=MODERATE;3=HIGH;4=EXTREME):
2 <--HEALTH 0 <--FLAMMABILITY 0 <--REACTIVITY <--SPECIAL

SECTION V - HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE :

NOT ESTABLISHED FOR MIXTURES SEE SECTION II.

EFFECTS OF OVEREXPOSURE

- ACUTE - (SHORT TERM EXPOSURE)

FUMES AND GASES CAN BE DANGEROUS TO YOUR HEALTH. SHORT TERM OVEREXPOSURE TO WELDING FUMES MAY RESULT IN DISCOMFORT SUCH AS: DIZZINESS, NAUSEA, OR DRYNESS OR IRRITATION OF NOSE, THROAT OR EYES.

- CHRONIC - (LONG TERM EXPOSURE)

LONG TERM OVEREXPOSURE MAY LEAD TO SIDEROSIS (IRON DEPOSITS IN THE LUNG) AND IS BELIEVED BY SOME INVESTIGATORS TO AFFECT PULMONARY FUNCTION. ARC RAYS CAN INJURE EYES AND BURN SKIN. ELECTRIC SHOCK CAN KILL.

PRIMARY ROUTE OF ENTRY: <-- INHALATION <-- INGESTION <-- ABSORPTION

EMERGENCY & FIRST AID PROCEDURES

INHALATION :

REMOVE FROM EXPOSURE AREA AND CALL FOR MEDICAL AID. ADMINISTER RESPIRATION. IF NO DETECTABLE PULSE, BEGIN EXTERNAL HEART MASSAGE. EMPLOY FIRST AID TECHNIQUES RECOMMENDED BY THE AMERICAN RED CROSS. IN CASE OF ELECTRICAL SHOCK TURN OFF POWER PRIOR TO REMOVAL FROM EXPOSURE AREA AND ADMINISTER AID.

EYE CONTACT:

FLUSH WITH WATER FOR AT LEAST 15 MINUTES.

SKIN CONTACT:

REMOVE CONTAMINATED CLOTHING. WASH SKIN WITH SOAP AND WATER.

INGESTION :

DO NOT INDUCE VOMITING. OBTAIN MEDICAL ATTENTION.

NOTES TO PHYSICIAN :

N/A

SECTION VI - TOXICITY INFORMATION

PRODUCT CONTAINS CHEMICAL LISTED AS CARCINOGEN OR POTENTIAL CARCINOGEN BY:

IARC	NTP	OSHA	ACGIH	OTHER
<--YES X<--NO	<--YES X<--NO	<--YES X<--NO	<--YES X<--NO	X<--YES <--NO

(1*) OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION,29C.F.R.1910-1000 PERMISSIBLE EXPOSURE LIMIT(PEL).
(2*) AMERICAN CONFERENCE OF GOVERNMENTAL INDUSTRIAL HYGENISTS (ACGIH) THRESHOLD LIMIT VALUE (TLV).
(3*) NOT KNOWN; NUISANCE PARTICULATE CONCENTRATION PER ACGIH IS 10MG/M3.
**NICKEL IS LISTED ON CALIFONIA PROPOSTION 65 AS A CARCINOGEN.

SECTION VII - REACTIVITY DATA

	X<--STABLE	<--UNSTABL	CONDIDTIONS TO AVOID
STABILITY	REFER TO REFERENCES FOR FURTHER INFORMATION (SECTION XII)		

INCOMPATIBILITY (MATERIALS TO AVOID)

NONE

HAZARDOUS DECOMPOSITION PRODUCTS

REFER TO REFERENCES FOR FURTHER INFORMATION (SECTION XII)

	WILL NOT <--OCCUR	MAY <--OCCUR	CONDITIONS TO AVOID
HAZARDOUS POLYMERIZATION	N/A		

SECTION VIII - SPILL OR LEAK PROCEDURES

STEPS TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED

N/A

WASTE DISPOSAL METHOD

PREVENT WASTE FROM CONTAMINATING SURROUNDING ENVIRONMENT. DISCARD ANY PRODUCT, RESIDUE, DISPOSABLE, CONTAINER, OR LINER IN AN ENVIROMENTALLY ACCEPTABLE MANNER, IN FULL COMPLIANCE WITH FEDERAL, STATE AND LOCAL REGULATIONS.

NEUTRALIZING AGENT

N/A

SECTION IX - SPECIAL PROTECTION INFORMATION

REQUIRED VENTILATION

USE ENOUGH VENTILATION, LOCAL EXHAUST AT THE ARC, OR BOTH, TO KEEP THE FUMES AND GASES BELOW THE TLV'S IN THE WORKERS BREATHING ZONE AND THE GENERAL AREA. TRAIN THE WELDOR TO KEEP HIS HEAD OUT OF THE FUMES.

RESPIRATORY PROTECTION

WELD FUME RESPIRATOR OR AIR MASK FOR CONFINED SPACE OR WHEN EXCEEDING TLV.

PROTECTIVE GLOVES

WELDER'S PROTECTIVE GLOVES

EYE PROTECTION

PROTECTIVE WELDING LENS

OTHER PROTECTION
PROTECTIVE CLOTHING SUCH AS LEATHER APRONS, ETC.

SECTION X - STORAGE AND HANDLING INFORMATION

STORAGE TEMPERATURE 000000<--MAX 000000<--MIN	INDOOR	HEATED	REFRIGERATED	OUTDOOR

PRECAUTIONS TO BE TAKEN IN HANDLING & STORING
ARC AND SPARKS COULD BE THE SOURCE OF COMBUSTIBLE PRODUCTS.

OTHER PRECAUTIONS
SPARKS, SPATTER AND ARC CAN IGNITE FLAMMABLE PRODUCTS.

SECTION XI - REGULATORY INFORMATION

CHEMICAL NAME	C.A.S. NUMBER	UPPER % LIMIT
MANGANESE(SOURCE 1*)	7439-96-5	5%

THOSE INGREDIENTS LISTED ABOVE ARE SUBJECT TO THE REPORTING REQUIREMENTS OF 313 OF TITLE III OF THE SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF 1986 AND 40 CFR PART 372.
IF UE (USE EXEMPTION) APPEARS UNDER UPPER % LIMIT, END USERS ARE EXEMPT FROM NOTIFICATION BECAUSE THE PRODUCT IS USED AND LABELED FOR ROUTINE JANITORIAL WORK, OR THE PRODUCT IS USED AND LABELED FOR FACILITY GROUNDS MAINTENANCE (SUCH AS FERTILIZERS AND HERBICIDES), OR THE PRODUCT IS USED AND LABELED FOR MAINTAINING MOTOR VEHICLES.

SECTION XII - TRANSPORTATION * (FOR FUTURE USE)

APPLICABLE REGULATIONS
<--49 CFR <--IMCO <--TARIFF 6 D <--IATA <--MILITARY AIR (AFR 71-4)

SHIPPING NAME

HAZARD CLASS	ID NUMBER	REPORT QTY

LABELS	LIMITED QTY

108 DEPENDALLOY ELT 1/8

UNIT CONTAINER

DOT SPS CONTAINER	NET EXPLOSIVE WT.

AEROSOL PROPELLANT(S)

SECTION XIII - REFERENCES

MANUFACTURER'S MATERIAL SAFETY DATA SHEET.

ADDITIONAL INFORMATION SECTION VII REACTIVITY DATA:
WHEN THE ELECTRODE IS CONSUMED, THE FUME AND GAS DECOMPOSITION PRODUCTS ARE DIFFERENT IN PERCENT AND FORM FROM THE INGREDIENTS LISTED IN SECTION II. THESE COMPONENTS ARE ALWAYS PRESENT AS COMPLEX COMPOUNDS AND NOT AS METALS (CHARACTERIZATION OF ARC WELDING FUME: AMERICAN WELDING SOCIETY). REASONABLE EXPECTED FUME CONSTITUENTS FROM THESE PRODUCTS WOULD INCLUDE FLUORIDES AND COMPLEX OXIDES OR IRON, CHROMIUM, NICKEL, MANGANESE, AND SILICON. COMPLEX OXIDES CONTAINING MOLYBDENUM AND COPPER WILL BE FOUND IN THE FUMES OF THOSE PRODUCTS CONTAINING THESE ELEMENTS. THE FUME LIMIT FOR CR VI(0.05MG/M3 WILL BE REACHED BEFORE THE GENERAL LIMIT OF 5MG/M3 FOR FUMES IS REACHED. MONITOR FUMES FOR CR VI LEVEL. GASEOUS REACTION PRODUCTS MAY INCLUDE CARBON MONOXIDE AND CARBON DIOXIDE. OZONE AND NITROGEN OXIDES MAY BE FORMED BY THE RADIATION FROM THE ARC.

THE INFORMATION CONTAINED HEREIN IS BASED ON DATA CONSIDERED ACCURATE IN LIGHT OF CURRENT FORMULATION. HOWEVER, NO WARRANTY IS EXPRESSED OR IMPLIED REGARDING THE ACCURACY OF THIS DATA OR THE RESULTS TO BE OBTAINED FROM THE USE THEREOF.

X-ERGON, A PARTSMASTER CO., DIV OF NCH ASSUMES NO RESPONSIBILITY FOR PERSONAL INJURY OR PROPERTY DAMAGE CAUSED BY THE USE , STORAGE OR DISPOSAL OF THE PRODUCT IN A MANNER NOT RECOMMENDED ON THE PRODUCT LABEL. USERS ASSUME ALL RISKS ASSOCIATED WITH SUCH UNRECOMMENDED USE, STORAGE, OR DISPOSAL OF THE PRODUCT.

Welding

(000000-9999 -50111111-10640000)	DATE OF ISSUE 09/01/89	SUPERSEDES 09/15/88

SECTION I - GENERAL INFORMATION

CHEMICAL NAME & SYNONYMS	TRADE NAME & SYNONYMS
N/A	DURA-WELD ELECTRODE 1/8

CHEMICAL FAMILY	FORMULA
N/A	X<--MIXTURE

No. 116

MANUFACTURERS NAME:
X-ERGON, A PARTSMASTER CO., DIV OF NCH

ADDRESS (NUMBER, STREET, CITY, STATE & ZIP CODE)
BOX 152170
IRVING, TEXAS 75015

PREPARED BY:	PRODUCT CODE NUMBER	EMERGENCY TELEPHONE NUMBER
U. MICHAEL COLE T.S.S.	10640000	214-438-1381

SECTION II- HAZARDOUS INGREDIENTS

THE HAZARDS PRESENTED BELOW ARE THOSE OF THE INDIVIDUAL COMPONENTS AS THE PRODUCT MIXTURE HAS NOT BEEN TESTED AS A WHOLE.

CHEMICAL NAME (INGREDIENTS)	HAZARD	TLV*	PEL*	CAS#
IRON(SURCE 2*)	IRRITANT	5 MG/M3	N/A	7439-89-6
POTASSIUM TITANATE(SOURCE 3*)	IRRITANT	10 MG/M3	N/A	120303-976
MANGANESE(SOURCE 1*)	IRRITANT	5CL	5	7439-96-5
CELLULOSE(SOURCE 2*)	IRRITANT	10MG/M3	N/A	9004-34-6
TITANIUM DIOXIDE(SOURCE2*)	IRRITANT	10MG/M3	5MG/M3	13463-67-7
POTASSIUM ALUMINUM SILICATE(SO	IRRITANT	5MG/M3	N/A	1323-76-1
URCE 3*)SECTION VI*MORE INFO.				

DURA-WELD ELECTRODE 1/8

SECTION III - PHYSICAL DATA

BOILING PT.(FAHRENHEIT)	N/A	SPEC GRAVITY (H20=1)	:N/A
VAPOR PRESSURE (MM HG).	N/A	COLOR	N/A
VAPOR DENSITY (AIR=1)	N/A	ODOR	N/A
PH @ 100%	N/A	CLARITY	N/A
PERCENT, VOLATILE BY VOLUME (%)	N/A	EVAPORATION RATE (BU AC = 1)	N/A
SOLUBILITY IN WATER	N/A		
VISCOSITY	N/A		

SECTION IV - FIRE AND EXPLOSION HAZARD

FLASH POINT (METHOD USED)	FLAMMABLE LIMITS	LEL	UEL
N/A N/A		N/A	N/A

EXTINGUISHING MEDIA "ALCOHOL" DRY WATER
<--FOAM <--FOAM <--CO2 <--CHEMICAL <--SPRAY <--OTHER

SPECIAL FIRE FIGHTING PROCEDURES
SEE AMERICAN NATIONAL STANDARD Z49.1,SAFETY IN WELDING AND CUTTING, PUBLISH ED BY THE AMERICAN WELDING SOCIETY AND OSHA PUBLICATION 2206(C.F.R.192-1910)

UNUSUAL FIRE & EXPLOSION HAZARDS
NON-FLAMMABLE: WELDING ARC AND SPARK CAN IGNITE COMBUSTIBLES.

NFPA HAZARD RATING (0=INSIGNIFICANT;1=SLIGHT;2=MODERATE;3=HIGH;4=EXTREME):
2 <--HEALTH 0 <--FLAMMABILITY 0 <--REACTIVITY <--SPECIAL

SECTION V - HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE :

NOT ESTABLISHED FOR MIXTURES SEE SECTION II.

EFFECTS OF OVEREXPOSURE
- ACUTE - (SHORT TERM EXPOSURE)
FUMES AND GASES CAN BE DANGEROUS TO YOUR HEALTH. SHORT TERM OVEREXPOSURE TO

WELDING FUMES MAY RESULT IN DISCOMFORT SUCH AS: DIZZINESS, NAUSEA, OR DRYNESS OR IRRITATION OF NOSE, THROAT OR EYES.

- CHRONIC - (LONG TERM EXPOSURE)

LONG TERM OVEREXPOSURE MAY LEAD TO SIDEROSIS (IRON DEPOSITS IN THE LUNG) AND IS BELIEVED BY SOME INVESTIGATORS TO AFFECT PULMONARY FUNCTION. ARC RAYS CAN INJURE EYES AND BURN SKIN. ELECTRIC SHOCK CAN KILL.

PRIMARY ROUTE OF ENTRY: <-- INHALATION <-- INGESTION <-- ABSORPTION

EMERGENCY & FIRST AID PROCEDURES

INHALATION :

REMOVE FROM EXPOSURE AREA AND CALL FOR MEDICAL AID. ADMINISTER RESPIRATION. IF NO DETECTABLE PULSE, BEGIN EXTERNAL HEART MASSAGE. EMPLOY FIRST AID TECHNIQUES RECOMMENDED BY THE AMERICAN RED CROSS. IN CASE OF ELECTRICAL SHOCK TURN OFF POWER PRIOR TO REMOVAL FROM EXPOSURE AREA AND ADMINISTER AID.

EYE CONTACT:

FLUSH WITH WATER FOR AT LEAST 15 MINUTES.

SKIN CONTACT:

REMOVE CONTAMINATED CLOTHING. WASH SKIN WITH SOAP AND WATER.

INGESTION :

DO NOT INDUCE VOMITING. OBTAIN MEDICAL ATTENTION.

NOTES TO PHYSICIAN :

N/A

SECTION VI - TOXICITY INFORMATION

PRODUCT CONTAINS CHEMICAL LISTED AS CARCINOGEN OR POTENTIAL CARCINOGEN BY:

IARC	NTP	OSHA	ACGIH	OTHER
<--YES X<--NO	<--YES X<--NO	<--YES X<--NO	<--YES X<--NO	<--YES X<--NO

(1*) OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION,29C.F.R.1910-1000 PERMISSIBLE EXPOSURE LIMIT(PEL).

(2*) AMERICAN CONFERENCE OF GOVERNMENTAL INDUSTRIAL HYGENISTS (ACGIH) THRESHOLD LIMIT VALUE (TLV).

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SECTION VII - REACTIVITY DATA

STABILITY	X<--STABLE	<--UNSTABL	CONDIDTIONS TO AVOID

REFER TO REFERENCES FOR FURTHER INFORMATION (SECTION XII)

INCOMPATIBILITY (MATERIALS TO AVOID)

NONE

HAZARDOUS DECOMPOSITION PRODUCTS

REFER TO REFERENCES FOR FURTHER INFORMATION (SECTION XII)

HAZARDOUS POLYMERIZATION	WILL NOT <--OCCUR	MAY <--OCCUR	CONDITIONS TO AVOID
			N/A

SECTION VIII - SPILL OR LEAK PROCEDURES

STEPS TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED

N/A

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NEUTRALIZING AGENT

N/A

SECTION IX - SPECIAL PROTECTION INFORMATION

REQUIRED VENTILATION

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PROTECTIVE GLOVES

WELDER'S PROTECTIVE GLOVES

EYE PROTECTION

PROTECTIVE WELDING LENS

OTHER PROTECTION

PROTECTIVE CLOTHING SUCH AS LEATHER APRONS, ETC.

STORAGE TEMPERATURE 000000<--MAX 000000<--MIN	INDOOR	HEATED	REFRIGERATED	OUTDOOR

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SECTION XII - TRANSPORTATION * (FOR FUTURE USE)

APPLICABLE REGULATIONS
<--49 CFR <--IMCO <--TARIFF 6 D <--IATA <--MILITARY AIR (AFR 71-4)

SHIPPING NAME

HAZARD CLASS	ID NUMBER	REPORT QTY

LABELS | LIMITED QTY

UNIT CONTAINER

DOT SPS CONTAINER | NET EXPLOSIVE WT.

AEROSOL PROPELLANT(S)

SECTION XIII - REFERENCES

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ADDITIONAL INFORMATION SECTION VII REACTIVITY DATA:
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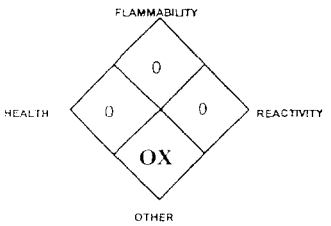
MATERIAL SAFETY DATA SHEET

Welding

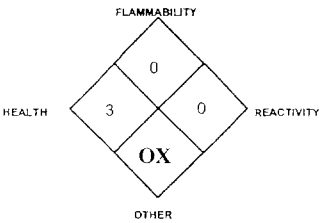
OXYGEN GAS

OXYGEN- REFRIGERATED LIQUID

NFPA RATING



NFPA RATING



Prepared to U.S. OSHA, CMA, ANSI and Canadian WHMIS Standards

PART I *What is the material and what do I need to know in an emergency?*

1. PRODUCT IDENTIFICATION

CHEMICAL NAME; CLASS: [redacted]

Document Number: 00015

PRODUCT USE: For general analytical/synthetic chemical uses.

SUPPLIER/MANUFACTURER'S NAME: Quimby Corporation

ADDRESS:

1603 NW 14th Ave
Portland, OR 97209

BUSINESS PHONE: 1-503-221-1100

EMERGENCY PHONE: INFOTRAC: 1-800-535-5053

DATE OF PREPARATION: May 20, 1996

SECOND REVISION: December 8, 1999

2. COMPOSITION and INFORMATION ON INGREDIENTS

CHEMICAL NAME	CAS #	mole %	EXPOSURE LIMITS IN AIR					
			ACGIH		OSHA			OTHER
			TLV ppm	STEL ppm	PEL ppm	STEL ppm	IDLH ppm	
Oxygen	7782-44-7	99.8%	There are no specific exposure limits for Oxygen. Oxygen levels should be maintained above 19.5% and below 23.5%					
Maximum Impurities		<0.2% (2000 ppm)	None of the trace impurities in this mixture contribute significantly to the hazards associated with the product. All hazard information pertinent to this product has been provided in this Material Safety Data Sheet, per the requirements of the OSHA Hazard Communication Standard (29 CFR 1910.1200) and State equivalent standards.					

NE = Not Established C = Ceiling Limit. See Section 16 for Definitions of Terms Used.

NOTE: All WHMIS required information is included. It is located in appropriate sections based on the ANSI Z400.1-1993 format.

CARG004087

3. HAZARD IDENTIFICATION

EMERGENCY OVERVIEW: Oxygen is a colorless, odorless, oxidizing gas, or a colorless, odorless, cryogenic liquid. The chief health hazard presented by this gas at atmospheric pressures is respiratory system irritation after overexposure to high oxygen concentrations. The main physical hazard associated with releases of this gas is related to its oxidizing power. In high oxygen content atmospheres, common combustible materials can become highly flammable. The cryogenic liquid will rapidly boil to the gas at standard temperatures and pressures. The liquefied gas can cause frostbite to any contaminated tissue. Emergency responders must practice extreme caution when approaching oxygen releases because of the extreme fire potential.

OXYGEN GAS

HAZARDOUS MATERIAL INFORMATION SYSTEM

HEALTH	(BLUE)	0
FLAMMABILITY	(RED)	0
REACTIVITY	(YELLOW)	0
PROTECTIVE EQUIPMENT		B

EYES	RESPIRATORY	HANDS	BODY
	See Section 8		See Section 8

For routine industrial applications

LIQUID OXYGEN

HAZARDOUS MATERIAL INFORMATION SYSTEM

HEALTH	(BLUE)	3
FLAMMABILITY	(RED)	0
REACTIVITY	(YELLOW)	0
PROTECTIVE EQUIPMENT		X

EYES	RESPIRATORY	HANDS	BODY
	See Section 8		See Section 8

For routine industrial applications

See Section 16 for Definition of Ratings

SYMPTOMS OF OVEREXPOSURE BY ROUTE OF EXPOSURE: The most significant route of overexposure for this gas or cryogenic liquid by inhalation. Skin and eye contact is also possible for the cryogenic liquid. The following paragraphs describe symptoms of exposure by route of exposure.

INHALATION: Normally, air contains 21% oxygen. No health effects have been observed in people exposed to 50% Oxygen at 1 atm. for 24 hours or longer. High concentrations of this gas create an oxygen-rich environment. Individuals breathing such an atmosphere containing 51-100% Oxygen may experience nausea, dizziness, coughing, and bronchial irritation. Exposures to high Oxygen concentrations, especially at elevated pressures, can cause, hypothermia, increased depth of respiration, bradycardia, pulmonary discomfort, central nervous system effects (e.g., mood changes, dizziness), peripheral vasoconstriction, amblyopia (loss of vision), seizures, or death. Exposure levels to pure oxygen which have produced the adverse symptoms described above are summarized below.

DURATION OF EXPOSURE	PRESSURE OF OXYGEN
5 hours	Sea level
3 hours	3 atmospheres
30 minutes	4 atmospheres
5 minutes	7 atmospheres

NOTE: Pure oxygen at 1/3 atmospheric pressure can be inhaled for weeks without symptoms. Inhalation of pure oxygen for up to 16 hours per day for many days and 65% oxygen in air for extended periods does not cause symptoms of oxygen toxicity.

OTHER POTENTIAL HEALTH EFFECTS: Contact of the skin or eyes with cryogenic liquid or rapidly expanding gases (which are released under high pressure) may cause frostbite. Symptoms of frostbite include change in skin color to white or grayish-yellow. The pain after contact with liquid can quickly subside. Ingestion and absorption through the skin are not considered significant routes of entry of oxygen into the body.

3. HAZARD IDENTIFICATION (Continued)

HEALTH EFFECTS OR RISKS FROM EXPOSURE: An Explanation in **Lay Terms**. Overexposure to Oxygen may cause the following health effects:

ACUTE: The most significant hazard associated with this gas is inhalation of oxygen-rich atmospheres. Symptoms of overexposure to Oxygen include nausea, dizziness, respiratory problems, lowering of body temperature, loss of vision, seizures, or death. Contact with cryogenic liquid or rapidly expanding gases (which are released under high pressure) may cause frostbite.

CHRONIC: Long-term exposure to high atmospheric concentrations of oxygen at normal pressure or elevated pressure may produce severe thickening and scarring of lung tissues. Blood hemoglobin concentration decreases (thus reducing oxygen-carrying capacity) with prolonged exposure to high concentrations). See Section 11 (Toxicological Information) for additional information.

TARGET ORGANS: Hyperbaric Oxygen: Respiratory system and Central Nervous System. Cryogenic Liquid: Skin.

PART II *What should I do if a hazardous situation occurs?*

4. FIRST-AID MEASURES

RESCUERS SHOULD NOT ATTEMPT TO RETRIEVE VICTIMS OF EXPOSURE TO OXYGEN WITHOUT ADEQUATE PERSONAL PROTECTIVE EQUIPMENT. At a minimum, Self-Contained Breathing Apparatus Personal Protective equipment (and fire retardant clothing, if appropriate) should be worn to protect against high oxygen content or super-heated gases in the event of fire.

Remove victim(s) to fresh air, as quickly as possible. Trained personnel should administer supplemental oxygen and/or cardio-pulmonary resuscitation, if necessary. Supplemental oxygen is not normally appropriate. Victims tend to recover rapidly, when removed from the hypoxic exposure.

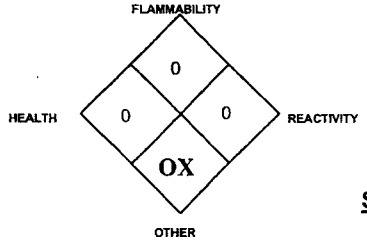
In case of frostbite, place the frostbitten part in warm water. DO NOT USE HOT WATER. If warm water is not available, or is impractical to use, wrap the affected parts gently in blankets. Alternatively, if the fingers or hands are frostbitten, place the affected area in the armpit, Encourage victim to gently exercise the affected part while being warmed. Seek immediate medical attention.

Victim(s) must be taken for medical attention. Rescuers should be taken for medical attention, if necessary. Take copy of label and MSDS to physician or other health professional with victim(s). Medical care providers should refer to Section 11 of this MSDS for additional information.

5. FIRE-FIGHTING MEASURES

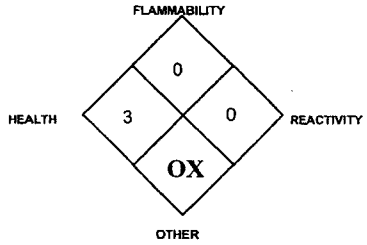
OXYGEN GAS

NFPA RATING



LIQUID OXYGEN

NFPA RATING



See Section 16 for Definition of Ratings

FLASH POINT: Not applicable.

AUTOIGNITION TEMPERATURE: Not applicable.

FLAMMABLE LIMITS (in air by volume, %):

Lower (LEL): Not applicable.
Upper (UEL): Not applicable.

5. FIRE-FIGHTING MEASURES (Continued)

FIRE EXTINGUISHING MATERIALS: Non-flammable gas. Use extinguishing media appropriate for surrounding fire.

UNUSUAL FIRE AND EXPLOSION HAZARDS: Oxygen does not burn; however, cylinders, when involved in fire, may rupture or burst in the heat of the fire. Oxygen will support and accelerate combustion. Common combustible materials will burn readily in elevated oxygen environments.

Water Spray: YES	Carbon Dioxide: YES	Foam: YES
Halon: YES	Dry Chemical: YES	Other: Any "ABC" Class.

RESPONSE TO FIRE INVOLVING CRYOGEN: Cryogenic oxygen may contribute to the ignition of any combustible material, including asphalt and wood. Extreme caution must be used when cryogenic oxygen storage vessels are involved in a fire. Cryogenic liquids can be particularly dangerous during fires because of their potential to rapidly freeze water. Careless use of water may cause heavy icing. Furthermore, relatively warm water greatly increases the evaporation rate of Oxygen. If large concentrations of Oxygen gas are present, the water vapor in the surrounding air will condense, creating a dense fog that may make it difficult to find fire exits or equipment. Liquid Oxygen, when exposed to the atmosphere, will produce a cloud of ice/fog in the air upon its release.

Explosion Sensitivity to Mechanical Impact: Not Sensitive.
Explosion Sensitivity to Static Discharge: Not Sensitive.

SPECIAL FIRE-FIGHTING PROCEDURES: Structural fire-fighters must wear Self-Contained Breathing Apparatus and full protective equipment. Do not enter areas which have more than 23.5% oxygen in the atmosphere, since a serious fire and explosion hazard exists. Remove all flammable and combustible materials from vicinity of a release, if it can be done without risk to firefighters. Direct water onto vessels to keep the vessels cool. Shut-off the flow of oxygen or move vessels from fire area if it can be done safely. Withdraw from the area in case of rising sounds from venting safety devices or any discoloration of vessels due to fire.

6. ACCIDENTAL RELEASE MEASURES

SPILL AND LEAK RESPONSE: Uncontrolled releases should be responded to by trained personnel using pre-planned procedures. Proper protective equipment should be used. In case of a release, clear the affected area and protect people. Minimum Personal Protective Equipment should be **Level B: fire protective clothing, mechanically-resistant, fire protective gloves and Self-Contained Breathing Apparatus**. In general, **DO NOT ENTER AN AREA IF THE OXYGEN CONTENT EXCEEDS 23.5%. USE VENTILATION TO REDUCE THE OXYGEN LEVELS.** Locate and seal the source of the leaking gas. Protect personnel attempting the shut-off with water-spray. Allow the gas to dissipate. Monitor the surrounding area for oxygen levels. The atmosphere must have at least 19.5 percent and less than 23.5% oxygen before personnel can be allowed in the area without Self-Contained Breathing Apparatus. Attempt to close the main source valve prior to entering the area. If this does not stop the release (or if it is not possible to reach the valve), allow the gas to release in-place or remove it to a safe area and allow the gas to be released there.

RESPONSE TO CRYOGENIC RELEASE: Clear the affected area and allow the liquid to evaporate and the gas to dissipate. After the gas is formed, follow the instructions provided in the previous paragraph. If the area must be entered by emergency personnel, SCBA, Kevlar gloves, and appropriate foot and leg protection and fire protective clothing must be worn.

PART III *How can I prevent hazardous situations from occurring?*

7. HANDLING and STORAGE

WORK PRACTICES AND HYGIENE PRACTICES: Do not eat or drink while handling chemicals. Be aware of any signs of overexposure to this gas (see Section 3, Hazard Information).

STORAGE AND HANDLING PRACTICES: Cylinders should be stored in dry, well-ventilated areas away from sources of heat. Compressed gases can present significant safety hazards. Store containers away from heavily trafficked areas and emergency exits. Post "No Smoking or Open Flames" signs in storage or use areas.

7. HANDLING and STORAGE (Continued)

SPECIAL PRECAUTIONS FOR HANDLING GAS CYLINDERS: Protect cylinders against physical damage. Store in cool, dry, well-ventilated, fireproof area, away from flammable materials and corrosive atmospheres. Store away from heat and ignition sources and out of direct sunlight. Do not store near elevators, corridors or loading docks. Do not allow area where cylinders are stored to exceed 52°C (125°F). Use only storage containers and equipment (pipes, valves, fittings to relieve pressure, etc.) designed for the storage of Oxygen. Do not store containers where they can come into contact with moisture.

Cylinders should be stored upright and be firmly secured to prevent falling or being knocked over. Cylinders can be stored in the open, but in such cases, should be protected against extremes of weather and from the dampness of the ground to prevent rusting.

Keep Dewar flasks of liquid oxygen covered with loose fitting cap. This prevents air or moisture from entering the container, yet allows pressure to escape. Use only the stopper or plug supplied with the container. Ensure that ice does not form in the neck of flasks. If the neck of Dewar flask is blocked by ice or "frozen" air, follow owner's instruction for removing it. A plugged Dewar or storage flask may develop sufficient pressure to cause catastrophic failure. Ice can also cause pressure release valves to fail. Never tamper with pressure relief devices in valves and cylinders. The temperature of Liquid Oxygen is sufficiently cold to condense and freeze most gases. Consequently, there is a danger of pipes or vents becoming plugged. Liquid Oxygen should therefore be stored and handled under positive pressure or in a closed system to prevent the infiltration and solidification of air or other gases. The following rules are applicable to situations in which cylinders are being used:

Before Use: Move cylinders with a suitable hand-truck. Do not drag, slide or roll cylinders. Do not drop cylinders or permit them to strike each other. Secure cylinders firmly. Leave the valve protection cap, if provided, in-place until cylinder is ready for use.

During Use: Use designated CGA fittings and other support equipment. Do not use adapters. Do not heat cylinder by any means to increase the discharge rate of the product from the cylinder. Use check valve or trap in discharge line to prevent hazardous backflow into the cylinder. Do not use oils or grease on gas-handling fittings or equipment.

After Use: Close main cylinder valve. Replace valve protection cap, if provided. Mark empty cylinders "EMPTY".

NOTE: Use only DOT or ASME code containers. Cylinders must not be recharged except by or with the consent of owner. For additional information refer to the Compressed Gas Association Pamphlet P-1, *Safe Handling of Compressed Gases in Containers*. For cryogenic liquids, refer to CGA P-12, *Safe Handling of Cryogenic Liquids*. Additionally, refer to CGA Bulletins G-4.3, "*Commodity Specification for Oxygen*", and G-4.1 "*Cleaning Equipment for Oxygen Service*".

PROTECTIVE PRACTICES DURING MAINTENANCE OF CONTAMINATED EQUIPMENT: Follow practices indicated in Section 6 (Accidental Release Measures). Make certain application equipment is locked and tagged-out safely. Purge gas handling equipment with inert gas (e.g., Nitrogen) before attempting repairs.

TANK CAR SHIPMENTS: Tank cars carrying Oxygen should be loaded and unloaded in strict accordance with tank-car owner's recommendations and all established on-site safety procedures. Appropriate personal protective equipment must be used during tank car operations (see Section 8). All loading and unloading equipment must be inspected, prior to each use. Loading and unloading operations must be attended, at all times. Tank cars must be level and wheels must be locked or blocked prior to loading or unloading. Tank car (for loading) or storage tank (for unloading) must be verified to be correct for receiving this product and be properly prepared, prior to starting the transfer operations. Hoses must be verified to be clean and free of incompatible chemicals, prior to connection to the tank car or vessel. Valves and hoses must be verified to be in the correct positions, before starting transfer operations. A sample (if required) must be taken and verified (if required) prior to starting transfer operations. All lines must be blown-down and purged before disconnecting them from the tank car or vessel. Refrigerated Liquid Oxygen is capable of causing the ignition of asphalt. Transfers should be performed on concrete surfaces.

8. EXPOSURE CONTROLS - PERSONAL PROTECTION

VENTILATION AND ENGINEERING CONTROLS: Use with adequate ventilation to maintain Oxygen levels between 19.5% and 23.5% in the work area. Local exhaust ventilation is preferred, because it prevents Oxygen dispersion into the work place by eliminating it at its source. If appropriate, install automatic monitoring equipment to detect the level of Oxygen.

8. EXPOSURE CONTROLS - PERSONAL PROTECTION (Continued)

RESPIRATORY PROTECTION: Maintain oxygen levels above 19.5% and below 23.5% in the workplace. Use supplied air respiratory protection during emergency response to a release of Oxygen. If respiratory protection is required, follow the requirements of the Federal OSHA Respiratory Protection Standard (29 CFR 1910.134), or equivalent State standards. DO NOT ENTER AN AREA IF THE OXYGEN CONTENT EXCEEDS 23.5%.

EYE PROTECTION: Safety glasses. Face-shields must be worn when using cryogenic Oxygen.

HAND PROTECTION: Wear mechanically-resistant gloves when handling cylinders of Oxygen. Use low-temperature protective gloves (e.g., Kevlar) when working with containers of Liquid Oxygen.

BODY PROTECTION: Use body protection appropriate for task. Transfer of large quantities under pressure may require protective equipment appropriate to protect employees from splashes of liquefied product, as well provide sufficient insulation from extreme cold.

9. PHYSICAL and CHEMICAL PROPERTIES

VAPOR DENSITY: 1.326 kg/m^3 (0.083 lb/ft^3)
SPECIFIC GRAVITY (air = 1): 1.105
SOLUBILITY IN WATER v/v @ 0°C (32°F): 4.9%
VAPOR PRESSURE (psia): Not applicable.
EXPANSION RATIO: 861 (cryogenic liquid).
COEFFICIENT WATER/OIL DISTRIBUTION: Log P -0.65

EVAPORATION RATE (nBuAc = 1): Not applicable.
FREEZING POINT: -218.8°C (-361.8°F)
BOILING POINT @ 1 atm.: -297.4°F (-183.0°C)
pH: Not applicable.
ODOR THRESHOLD: Not applicable. Odorless.
SPECIFIC VOLUME (ft^3/lb): 12.1

APPEARANCE AND COLOR: Oxygen is a colorless, odorless gas or a colorless and odorless, cryogenic liquid.

HOW TO DETECT THIS SUBSTANCE (warning properties): There are no unusual warning properties associated with a release of Oxygen. A release of the Refrigerated Liquid will be obvious as a result of the fog of atmospheric moisture which condenses in the vicinity of the release. An oxygen monitor can be used to detect oxygen levels.

10. STABILITY and REACTIVITY

STABILITY: Normally stable.

DECOMPOSITION PRODUCTS: None.

MATERIALS WITH WHICH SUBSTANCE IS INCOMPATIBLE: Oxygen is incompatible with combustible and flammable materials, chlorinated hydrocarbons, hydrazine, reduced boron compounds, ethers, phosphine, phosphorous tribromide, phosphorous trioxide, tetrafluorethylene, and compounds which readily form peroxides. The Refrigerated Liquid will cause asphalt to ignite.

HAZARDOUS POLYMERIZATION: Will not occur.

CONDITIONS TO AVOID: Avoid contact with incompatible materials. Cylinders exposed to high temperatures or direct flame can rupture or burst.

PART IV *Is there any other useful information about this material?*

11. TOXICOLOGICAL INFORMATION

TOXICITY DATA: Oxygen is the vital element in the atmosphere in which we live and breathe. The following toxicity data are for oxygen and are for exposure to high levels in extreme situations:

Cytogenetic Analysis System (hamster lung) 80 pph
TCLo (inhalation-woman) 12 pph for 10 minutes. Teratogenic effects.
TCLo (inhalation-human) 100 pph for 14 hours. Pulmonary effects.

SUSPECTED CANCER AGENT: Oxygen is not found on the following lists: FEDERAL OSHA Z LIST, NTP, CAL/OSHA, IARC; therefore it is not considered to be, nor suspected to be a cancer-causing agent by these agencies.

IRRITANCY OF PRODUCT: Contact with rapidly expanding gases or the refrigerated liquid can cause frostbite and damage to exposed skin and eyes.

SENSITIZATION OF PRODUCT: Oxygen is not a sensitizer.

11. TOXICOLOGICAL INFORMATION (Continued)

REPRODUCTIVE TOXICITY INFORMATION: Listed below is information concerning the effects of Oxygen on the human reproductive system.

Mutagenicity: Oxygen is not expected to cause mutagenic effects in humans. High concentrations of Oxygen at atmospheric pressure caused chromosomal aberrations and mutations in specific test animal tissues.
Embryotoxicity: Oxygen is not expected to cause embryotoxic effects in humans.
Teratogenicity: Oxygen is not expected to cause teratogenic effects in humans. Exposure of pregnant hamsters to 3-4 atmospheres of 100% oxygen for periods of 2-3 hours on days 6, 7, and 8 of pregnancy produced teratogenic effects in small, but significant number of fetuses.
Reproductive Toxicity: Oxygen is not expected to cause adverse reproductive effects in humans.

A mutagen is a chemical which causes permanent changes to genetic material (DNA) such that the changes will propagate through generation lines. An embryotoxin is a chemical which causes damage to a developing embryo (i.e. within the first eight weeks of pregnancy in humans), but the damage does not propagate across generational lines. A teratogen is a chemical which causes damage to a developing fetus, but the damage does not propagate across generational lines. A reproductive toxin is any substance which interferes in any way with the reproductive process.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Pre-existing respiratory conditions may be aggravated by overexposure to Oxygen.

RECOMMENDATIONS TO PHYSICIANS: Treat symptoms and reduce overexposure. Symptoms of overexposure usually are relieved quickly. Immediate sedation and anticonvulsive therapy should be provided, as needed.

BIOLOGICAL EXPOSURE INDICES (BEIs): Currently, Biological Exposure Indices (BEIs) are not applicable for this compound.

12. ECOLOGICAL INFORMATION

ENVIRONMENTAL STABILITY: Oxygen occurs naturally in the atmosphere. The gas will be dissipated rapidly in well-ventilated areas. The following environmental data are available for Oxygen.

OXYGEN: Log K_{ow} = -0.65, oxygen does not bioconcentrate in aquatic organisms

EFFECT OF MATERIAL ON PLANTS or ANIMALS: No adverse effect is anticipated to occur to animal or plant-life, except for frost produced in the presence of rapidly expanding gases.

EFFECT OF CHEMICAL ON AQUATIC LIFE: No evidence is currently available on Oxygen's effects on aquatic life.

13. DISPOSAL CONSIDERATIONS

PREPARING WASTES FOR DISPOSAL: Waste disposal must be in accordance with appropriate Federal, State, and local regulations. Return cylinders with any residual product to Quimby Corporation. Do not dispose of locally.

14. TRANSPORTATION INFORMATION

THIS MATERIAL IS HAZARDOUS AS DEFINED BY 49 CFR 172.101 BY THE U.S. DEPARTMENT OF TRANSPORTATION.

For Oxygen, Gas:

PROPER SHIPPING NAME:	Oxygen, compressed
HAZARD CLASS NUMBER and DESCRIPTION:	2.2 (Non-Flammable Gas)
UN IDENTIFICATION NUMBER:	UN 1072
PACKING GROUP:	Not Applicable
DOT LABEL(S) REQUIRED:	Non-Flammable Gas, Oxidizer

NORTH AMERICAN EMERGENCY RESPONSE GUIDEBOOK NUMBER (2000): 122

For Oxygen, Liquid:

PROPER SHIPPING NAME:	Oxygen, refrigerated liquid
HAZARD CLASS NUMBER and DESCRIPTION:	2.2 (Non-Flammable Gas)
UN IDENTIFICATION NUMBER:	UN 1073
PACKING GROUP:	Not Applicable
DOT LABEL(S) REQUIRED:	Non-Flammable Gas, Oxidizer

NORTH AMERICAN EMERGENCY RESPONSE GUIDEBOOK NUMBER (2000): 122

14. TRANSPORTATION INFORMATION (Continued)

MARINE POLLUTANT: Oxygen is not classified by the DOT as a Marine Pollutant (as defined by 49 CFR 172.101, Appendix B).

TRANSPORT CANADA TRANSPORTATION OF DANGEROUS GOODS REGULATIONS: THIS MATERIAL IS CONSIDERED AS DANGEROUS GOODS. Use the above information for the preparation of Canadian Shipments.

15. REGULATORY INFORMATION

U.S. SARA REPORTING REQUIREMENTS: Oxygen is not subject to the reporting requirements of Sections 302, 304, and 313 of Title III of the Superfund Amendments and Reauthorization Act.

U.S. SARA THRESHOLD PLANNING QUANTITY: Not applicable.

U.S. CERCLA REPORTABLE QUANTITY (RQ): Not applicable.

CANADIAN DSL/NDSL INVENTORY STATUS: Oxygen is on the DSL Inventory.

U.S. TSCA INVENTORY STATUS: Oxygen is on the TSCA Inventory.

OTHER U.S. FEDERAL REGULATIONS: Not applicable.

U.S. STATE REGULATORY INFORMATION: Oxygen is covered under specific State regulations, as denoted below:

Alaska - Designated Toxic and Hazardous Substances: No.
California - Permissible Exposure Limits for Chemical Contaminants: No.
Florida - Substance List: Oxygen.
Illinois - Toxic Substance List: No.
Kansas - Section 302/313 List: No.
Massachusetts - Substance List: Oxygen.
Minnesota - List of Hazardous Substances: No.
Michigan - Critical Materials Register: No.
Missouri - Employer Information/Toxic Substance List: No.
New Jersey - Right to Know Hazardous Substance List: Oxygen.
North Dakota - List of Hazardous Chemicals, Reportable Quantities: No.
Pennsylvania - Hazardous Substance List: Oxygen.
Rhode Island - Hazardous Substance List: Oxygen.
Texas - Hazardous Substance List: No.
West Virginia - Hazardous Substance List: No.
Wisconsin - Toxic and Hazardous Substances: No.

CALIFORNIA SAFE DRINKING WATER AND TOXIC ENFORCEMENT ACT (PROPOSITION 65): Oxygen is not on the California Proposition 65 lists.

LABELING (for Liquid):

ALWAYS KEEP CONTAINER IN UPRIGHT POSITION.

WARNING: EXTREMELY COLD, OXIDIZING LIQUID AND GAS UNDER PRESSURE.
VIGOROUSLY ACCELERATES COMBUSTION.
COMBUSTIBLES IN CONTACT WITH LIQUID OXYGEN MAY EXPLODE ON IGNITION OR CONTACT.
CAN CAUSE SEVERE FROSTBITE.

Keep oil, grease, and combustibles away.
Use only with equipment cleaned for oxygen service.
Do not get liquid in eyes, on skin, or clothing.
For liquid withdrawal, wear face shield and gloves.
Do not drop. Use hand truck for container movement.
Avoid spills. Do not walk on or roll equipment over spills.
Close valve after each use and when empty.
Use in accordance with the Material Safety Data Sheet.

FIRST-AID: **IN CASE OF FROSTBITE,** obtain immediate medial attention.

DO NOT REMOVE THIS PRODUCT LABEL.

15. REGULATORY INFORMATION (Continued)

LABELING (for Compressed Gas):

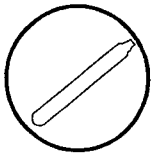
WARNING: HIGH PRESSURE OXIDIZING GAS.
VIGOROUSLY ACCELERATES COMBUSTION.

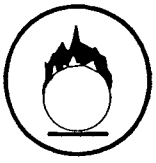
Keep oil and grease away.
Open valve slowly.
Use only with equipment cleaned for oxygen service and rated for cylinder pressure.
Close valve after each use and when empty.
Use in accordance with the Material Safety Data Sheet.

DO NOT REMOVE THIS PRODUCT LABEL.

CANADIAN WHMIS SYMBOLS:

Class A: Compressed Gases
Class C: Oxidizer





16. OTHER INFORMATION

The information contained herein is based on data considered accurate. However, no warranty is expressed or implied regarding the accuracy of these data or the results to be obtained from the use thereof. Quimby Corp. assumes no responsibility for injury to the vendee or third persons proximately caused by the material if reasonable safety procedures are not adhered to as stipulated in the data sheet. Additionally, Quimby Corp. assumes no responsibility for injury to vendee or third persons proximately caused by abnormal use of the material even if reasonable safety procedures are followed. Furthermore, vendee assumes the risk in his use of the material.

DEFINITIONS OF TERMS

A large number of abbreviations and acronyms appear on a MSDS. Some of these which are commonly used include the following:

CAS #: This is the Chemical Abstract Service Number which uniquely identifies each constituent. It is used for computer-related searching.

EXPOSURE LIMITS IN AIR:
ACGIH - American Conference of Governmental Industrial Hygienists, a professional association which establishes exposure limits.
TLV - Threshold Limit Value - an airborne concentration of a substance which represents conditions under which it is generally believed that nearly all workers may be repeatedly exposed without adverse effect. The duration must be considered, including the 8-hour Time Weighted Average **(TWA)**, the 15-minute Short Term Exposure Limit, and the instantaneous Ceiling Level **(C)**. Skin absorption effects must also be considered.
OSHA - U.S. *Occupational Safety and Health Administration.*
PEL - Permissible Exposure Limit - This exposure value means exactly the same as a TLV, except that it is enforceable by OSHA. The OSHA Permissible Exposure Limits are based in the 1989 PELs and the June, 1993 Air Contaminants Rule (Federal Register: 58: 35338-35351 and 58: 40191). Both the current PELs and the vacated PELs are indicated. The phrase, "Vacated 1989 PEL," is placed next to the PEL which was vacated by Court Order.
IDLH - Immediately Dangerous to Life and Health - This level represents a concentration from which one can escape within 30-minutes without suffering escape-preventing or permanent injury. **The DFG - MAK** is the Republic of Germany's Maximum Exposure Level, similar to the U.S. PEL. **NIOSH** is the National Institute of Occupational Safety and Health, which is the research arm of the U.S. **O**ccupational **S**afety and **H**ealth **A**dministration (**OSHA**). NIOSH issues exposure guidelines called **R**ecommended **E**xposure **L**evels (**RELs**). When no exposure guidelines are established, an entry of **NE** is made for reference.

HAZARD RATINGS:
HAZARDOUS MATERIALS IDENTIFICATION SYSTEM: Health Hazard: **0** (minimal acute or chronic exposure hazard); **1** (slight acute or chronic exposure hazard); **2** (moderate acute or significant chronic exposure hazard); **3** (severe acute exposure hazard; onetime overexposure can result in permanent injury and may be fatal); **4** (extreme acute exposure hazard; onetime overexposure can be fatal). Flammability Hazard: **0** (minimal hazard); **1** (materials that require substantial pre-heating before burning); **2** (combustible liquid or solids; liquids with a flash point of 38-93°C [100-200°F]); **3** (Class IB and IC flammable liquids with flash points below 38°C [100°F]); **4** (Class IA flammable liquids with flash points below 23°C [73°F] and boiling points below 38°C [100°F]. Reactivity Hazard: **0** (normally stable); 1 (material that can become unstable at elevated temperatures or which can react slightly with water); **2** (materials that are unstable but do not detonate or which can react violently with water); **3** (materials that can detonate when initiated or which can react explosively with water); **4** (materials that can detonate at normal temperatures or pressures).
NATIONAL FIRE PROTECTION ASSOCIATION: Health Hazard: **0** (material that on exposure under fire conditions would offer no hazard beyond that of ordinary combustible materials); **1** (materials that on exposure under fire conditions could cause irritation or minor residual injury); **2** (materials that on intense or continued exposure under fire conditions could cause temporary incapacitation or possible residual injury); **3** (materials that can on short exposure could cause serious temporary or residual injury); **4** (materials that under very short exposure could cause death or major residual injury). Flammability Hazard and Reactivity Hazard: Refer to definitions for "Hazardous Materials Identification System".

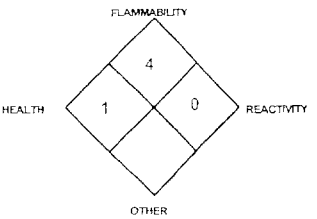
FLAMMABILITY LIMITS IN AIR:
Much of the information related to fire and explosion is derived from the National Fire Protection Association (**NFPA**). Flash Point - Minimum temperature at which a liquid gives off sufficient vapors to form an ignitable mixture with air. Autoignition Temperature: The minimum temperature required to initiate combustion in air with no other source of ignition. LEL - the lowest percent of vapor in air, by volume, that will explode or ignite in the presence of an ignition source. UEL - the highest percent of vapor in air, by volume, that will explode or ignite in the presence of an ignition source.

TOXICOLOGICAL INFORMATION:
Possible health hazards as derived from human data, animal studies, or from the results of studies with similar compounds are presented. Definitions of some terms used in this section are: **LD_{50}** - Lethal Dose (solids & liquids) which kills 50% of the exposed animals; **LC_{50}** - Lethal Concentration (gases) which kills 50% of the exposed animals; **ppm** concentration expressed in parts of material per million parts of air or water; **mg/m^3** concentration expressed in weight of substance per volume of air; **mg/kg** quantity of material, by weight, administered to a test subject, based on their body weight in kg. Data from several sources are used to evaluate the cancer-causing potential of the material. The sources are: **IARC** - the International Agency for Research on Cancer; **NTP** - the National Toxicology Program, **RTECS** - the Registry of Toxic Effects of Chemical Substances, **OSHA** and **CAL/OSHA**. IARC and NTP rate chemicals on a scale of decreasing potential to cause human cancer with rankings from 1 to 4. Subrankings (2A, 2B, etc.) are also used. Other measures of toxicity include **TDLo**, the lowest dose to cause a symptom and **TCLo** the lowest concentration to cause a symptom; **TDo**, **LDLo**, and **LDo**, or **TC**, **TCo**, **LCLo**, and **LCo**, the lowest dose (or concentration) to cause lethal or toxic effects. **BEI** - Biological Exposure Indices, represent the levels of determinants which are most likely to be observed in specimens collected from a healthy worker who has been exposed to chemicals to the same extent as a worker with inhalation exposure to the TLV. Ecological Information: EC is the effect concentration in water.

REGULATORY INFORMATION:
This section explains the impact of various laws and regulations on the material. **EPA** is the U.S. Environmental Protection Agency. **WHMIS** is the Canadian Workplace Hazardous Materials Information System. **DOT** and **TC** are the U.S. Department of Transportation and the Transport Canada, respectively. Superfund Amendments and Reauthorization Act **(SARA)**; the Canadian Domestic/Non-Domestic Substances List **(DSL/NDSL)**; the U.S. Toxic Substance Control Act **(TSCA)**; Marine Pollutant status according to the **DOT**; the Comprehensive Environmental Response, Compensation, and Liability Act **(CERCLA or Superfund)**; and various state regulations.

Welding

NFPA RATING



MATERIAL SAFETY DATA SHEET

Prepared to U.S. OSHA, CMA, ANSI and Canadian WHMIS Standards

PART I *What is the material and what do I need to know in an emergency?*

1. PRODUCT IDENTIFICATION

CHEMICAL NAME; CLASS: PROPANE - C_3H_8

Document Number: 00019

PRODUCT USE: For general analytical/synthetic chemical uses.
SUPPLIER/MANUFACTURER'S NAME: Quimby Corporation
ADDRESS: 1603 NW 14th Ave
Portland, OR 97209

BUSINESS PHONE: (503)221-1100
EMERGENCY PHONE: INFOTRAC: 1-800-535-5053

DATE OF PREPARATION: May 12, 1996
SECOND REVISION: January 16, 2000

2. COMPOSITION and INFORMATION ON INGREDIENTS

CHEMICAL NAME	CAS #	mole %	EXPOSURE LIMITS IN AIR					
			ACGIH		OSHA			
			TLV ppm	STEL ppm	PEL ppm	STEL ppm	IDLH ppm	OTHER
Propane	74-98-6	> 96.0	Simple Asphyxiant	NE	1000	NE	2100 (Based on LEL)	NIOSH REL: 1000 ppm DFG MAK: 1000 ppm
Maximum Impurities		<4.0	None of the trace impurities in this mixture contribute significantly to the hazards associated with the product. All hazard information pertinent to this product has been provided in this Material Safety Data Sheet, per the requirements of the OSHA Hazard Communication Standard (29 CFR 1910.1200) and State equivalent standards.					

NE = Not Established C = Ceiling Limit See Section 16 for Definitions of Terms Used

NOTE: All WHMIS required information is included. It is located in appropriate sections based on the ANSI Z400.1-1993 format.

CARG004097

3. HAZARD IDENTIFICATION

EMERGENCY OVERVIEW: Propane is a colorless, liquefied, flammable gas, with a faint odor at high concentrations. The liquefied gas rapidly turns into a gas at standard atmospheric temperatures and pressures. Propane is an asphyxiant and presents a significant health hazard by displacing the oxygen in the atmosphere. Both the liquid and gas pose a serious fire hazard when accidentally released. The gas is heavier than air and may spread long distances. Distant ignition and flashback are possible. Contact with liquid or rapidly expanding gases may cause frostbite. Flame or high temperature impinging on a localized area of the cylinder of Propane can cause the cylinder to rupture without activating the cylinder's relief devices. Provide adequate fire protection during emergency response situations.

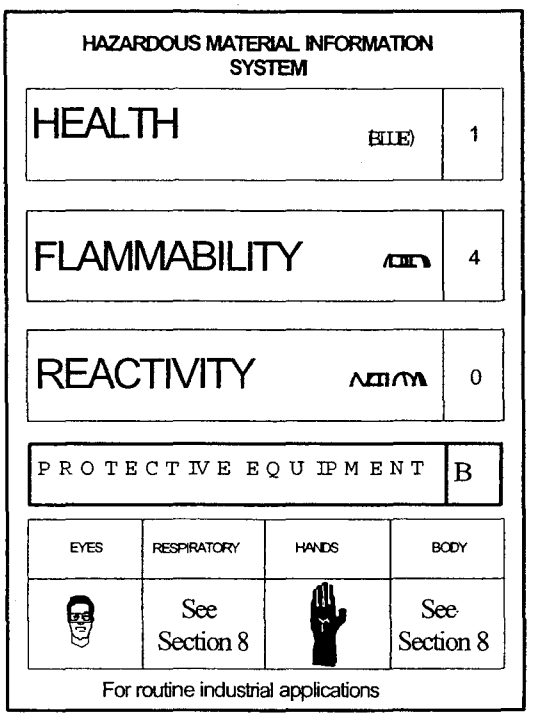
SYMPTOMS OF OVEREXPOSURE BY ROUTE OF EXPOSURE: The most significant route of overexposure for this gas is by inhalation. The following paragraphs describe symptoms of exposure by route of exposure.

INHALATION: High concentrations of this gas can cause an oxygen-deficient environment. Individuals breathing such an atmosphere may experience symptoms which include headaches, ringing in ears, dizziness, drowsiness, unconsciousness, nausea, vomiting, and depression of all the senses. The skin of a victim may have a blue color. Under some circumstances, death may occur. The effects associated with various levels of oxygen are as follows:

CONCENTRATION	SYMPTOMS OF EXPOSURE
12-16% Oxygen:	Breathing and pulse rate increased, muscular coordination slightly disturbed.
10-14% Oxygen:	Emotional upset, abnormal fatigue, disturbed respiration.
6-10% Oxygen:	Nausea and vomiting, collapse or loss of consciousness.
Below 6%:	Convulsive movements, possible respiratory collapse, and death.

OTHER POTENTIAL HEALTH EFFECTS: Contact with the liquefied gas or rapidly expanding gases may cause frostbite. Symptoms of frostbite include change in skin color to white or grayish-yellow. The pain after contact can quickly subside.

HEALTH EFFECTS OR RISKS FROM EXPOSURE: An Explanation in **Lay Terms**. Overexposure to Propane may cause the following health effects:



See Section 16 for Definition of Ratings

ACUTE: The most significant hazard associated with this gas is inhalation of oxygen-deficient atmospheres. Symptoms of oxygen deficiency include respiratory difficulty, headache, dizziness and nausea. At high concentrations, unconsciousness or death may occur. Contact with liquefied gas or rapidly expanding gases may cause frostbite.

CHRONIC: Propane is considered a weak heart sensitizing agent, based on animal tests.

TARGET ORGANS: Respiratory system.

PART II *What should I do if a hazardous situation occurs?*

4. FIRST-AID MEASURES

RESCUERS SHOULD NOT ATTEMPT TO RETRIEVE VICTIMS OF EXPOSURE TO PROPANE WITHOUT ADEQUATE PERSONAL PROTECTIVE EQUIPMENT. At a minimum, Self-Contained Breathing Apparatus and Fire-Retardant Personal Protective equipment should be worn. Adequate fire protection must be provided during rescue situations.

4. FIRST-AID MEASURES (Continued)

Remove victim(s) to fresh air as quickly as possible. Trained personnel should administer supplemental oxygen and/or cardio-pulmonary resuscitation, if necessary. Only trained personnel should administer supplemental oxygen. In case of frostbite, place the frostbitten part in warm water. DO NOT USE HOT WATER. If warm water is not available, or is impractical to use, wrap the affected parts gently in blankets. Alternatively, if the fingers or hands are frostbitten, place the affected area in the armpit. Encourage victim to gently exercise the affected part while being warmed. Seek immediate medical attention.

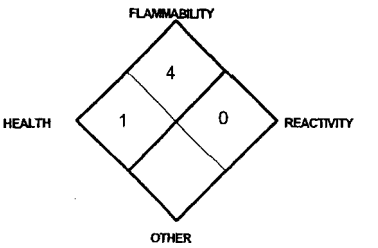
Victim(s) must be taken for medical attention. Rescuers should be taken for medical attention, if necessary. Take copy of label and MSDS to physician or other health professional with victim(s).

5. FIRE-FIGHTING MEASURES

FLASH POINT (Closed Cup): -104°C (-156°F)
AUTOIGNITION TEMPERATURE: 450°C (842°F)
FLAMMABLE LIMITS (in air by volume, %):

Lower (LEL): 2.2%
Upper (UEL): 9.5%

NFPA RATING



FIRE EXTINGUISHING MATERIALS: Extinguish Propane fires by shutting off the source of the gas. Use water spray or a foam agent to cool fire-exposed containers, structures, and equipment.

UNUSUAL FIRE AND EXPLOSION HAZARDS: When involved in a fire, this material ignites to produce toxic gases including carbon monoxide and carbon dioxide.

See Section 16 for Definition of Ratings

DANGER! Fires impinging (direct flame) on the outside surface of unprotected pressure storage vessels of Propane can be very dangerous.
Direct flame exposure on the cylinder wall can cause an explosion either by BLEVE (Boiling Liquid Expanding Vapor Explosion) , or by exothermic decomposition. This is a catastrophic failure of the vessel releasing the contents into a massive fireball and explosion. The resulting fire and explosion can result in severe equipment damage and personnel injury or death over a large area around the vessel. For massive fires in large areas, use unmanned hose holder or monitor nozzles; if this is not possible, withdraw from area and allow fire to burn.

Explosion Sensitivity to Mechanical Impact: Not sensitive.
Explosion Sensitivity to Static Discharge: Static discharge may cause Propane to ignite explosively if released.

SPECIAL FIRE-FIGHTING PROCEDURES: Structural fire-fighters must wear Self-Contained Breathing Apparatus and full protective equipment. Because of the potential for a BLEVE, evacuation of non-emergency personnel is essential. If water is not available for cooling or protection of vessel exposures, evacuate the area. Refer to the North American Emergency Response Guidebook for further information.

6. ACCIDENTAL RELEASE MEASURES

SPILL AND LEAK RESPONSE: Uncontrolled releases should be responded to by trained personnel using pre-planned procedures. Proper protective equipment should be used. In case of a release, clear the affected area and protect people. Adequate fire protection must be provided.

Minimum Personal Protective Equipment should be **Level B: fire-retardant protective clothing, gloves resistant to tears, and Self-Contained Breathing Apparatus.** Use only non-sparking tools and equipment. Locate and seal the source of the leaking gas. Protect personnel attempting the shut-off with water-spray. Allow the gas to dissipate.

Monitor the surrounding area for combustible gas levels and oxygen. Combustible gas concentration must be below 10% of the LEL (LEL = 2.2%) prior to entry of response personnel. The atmosphere must have at least 19.5% oxygen before personnel can be allowed in the area without Self-Contained Breathing Apparatus. Attempt to close the main source valve prior to entering the area. If this does not stop the release (or if it is not possible to reach the valve), allow the gas to release in-place or remove it to a safe area and allow the gas to be released there.

THIS IS AN EXTREMELY FLAMMABLE GAS. Protection of all personnel and the area must be maintained.

PART III *How can I prevent hazardous situations from occurring?*

7. HANDLING and STORAGE

WORK PRACTICES AND HYGIENE PRACTICES: As with all chemicals, avoid getting Propane IN YOU. Do not eat or drink while handling chemicals. Be aware of any signs of dizziness or fatigue; exposures to fatal concentrations of Propane could occur without any significant warning symptoms.

STORAGE AND HANDLING PRACTICES: Cylinders should be stored in dry, well-ventilated areas away from sources of heat. Compressed gases can present significant safety hazards. Store containers away from heavily trafficked areas and emergency exits. Post "No Smoking or Open Flames" signs in storage or use areas.

SPECIAL PRECAUTIONS FOR HANDLING GAS CYLINDERS: Protect cylinders against physical damage. Store in cool, dry, well-ventilated area, away from sources of heat, ignition, and direct sunlight. Do not allow area where cylinders are stored to exceed 52°C (125°F). Isolate from oxidizers such as oxygen, chlorine, or fluorine. Use a check valve or trap in the discharge line to prevent hazardous backflow. Post "No Smoking or Open Flame" signs in storage and use areas. Cylinders should be stored upright and be firmly secured to prevent falling or being knocked over. Cylinders can be stored in the open, but in such cases, should be protected against extremes of weather and from the dampness of the ground to prevent rusting. Never tamper with pressure relief devices in valves and cylinders. Electrical equipment should be non-sparking or explosion-proof. The following rules are applicable to work situations in which cylinders are being used:

Before Use: Move cylinders with a suitable hand truck. Do not drag, slide, or roll cylinders. Do not drop cylinders or permit them to strike each other. Secure cylinders firmly. Leave the valve protection cap in place until cylinder is ready for use.

During Use: Use designated CGA fittings and other support equipment. Do not use adapters. Do not heat cylinder by any means to increase the discharge rate of the product from the cylinder. Use check valve or trap in discharge line to prevent hazardous backflow into the cylinder. Do not use oils or grease on gas-handling fittings or equipment.

After Use: Close main cylinder valve. Replace valve protection cap. Mark empty cylinders "EMPTY".

NOTE: Use only DOT or ASME code containers. Earth-ground and bond all lines and equipment associated with this product. Close valve after each use and when empty. Cylinders must not be recharged except by or with the consent of owner. For additional information refer to the Compressed Gas Association Pamphlet P-1, *Safe Handling of Compressed Gases in Containers*. Additionally, refer to CGA Bulletin SB-2 "*Oxygen Deficient Atmospheres*" and NFPA Bulletin 58.

PROTECTIVE PRACTICES DURING MAINTENANCE OF CONTAMINATED EQUIPMENT: Follow practices indicated in Section 6 (Accidental Release Measures). Make certain that application equipment is locked and tagged-out safely. Purge gas handling equipment with inert gas (e.g., nitrogen) before attempting repairs.

8. EXPOSURE CONTROLS - PERSONAL PROTECTION

VENTILATION AND ENGINEERING CONTROLS: Use with adequate ventilation. Local exhaust ventilation is preferred, because it prevents Propane dispersion into the work place by eliminating it at its source. If appropriate, install automatic monitoring equipment to detect the presence of potentially explosive air-gas mixtures and the level of oxygen.

RESPIRATORY PROTECTION: Maintain oxygen levels above 19.5% in the workplace. Use supplied air respiratory protection if oxygen levels are below 19.5% or during emergency response to a release of Propane. If respiratory protection is required, follow the requirements of the Federal OSHA Respiratory Protection Standard (29 CFR 1910.134) or equivalent State standards. The following are NIOSH recommendations for Propane concentrations in air and are provided for further information:

CONCENTRATION	RESPIRATORY EQUIPMENT
Up to 2100 ppm:	Facepiece Self-Contained Breathing Apparatus (SCBA) or full-facepiece Supplied-Air Respirator (SAR).
Emergency or Planned Entry into Unknown Concentration or IDLH Conditions:	Positive pressure, full-facepiece SCBA or positive pressure, full-facepiece SAR with an auxiliary positive pressure SCBA.
Escape:	Escape-type SCBA.
NOTE:	The IDLH concentration for Propane is 2100 ppm, which is based on the LEL. It must be noted that protection for chemical overexposures is not effective protection from burns in the event of a fire.

EYE PROTECTION: Splash goggles or safety glasses, for protection from rapidly expanding gases and splashes of liquid Propane. Additionally, face shields should be worn for Liquid Propane use.

HAND PROTECTION: Wear mechanically resistant-gloves when handling cylinders of Propane. Use low-temperature protective gloves (e.g., Kevlar) when working with containers of Liquid Propane.

8. EXPOSURE CONTROLS - PERSONAL PROTECTION (Continued)

BODY PROTECTION: Use body protection appropriate for task. Transfer of large quantities under pressure may require protective equipment appropriate to protect employees from splashes of liquefied product, as well as fire retardant items.

9. PHYSICAL and CHEMICAL PROPERTIES

VAPOR DENSITY: 1.868 kg/m^3 (0.115 99 lb/ft^3)
SPECIFIC GRAVITY (air =1): 1.550
SOLUBILITY IN WATER: Very slight.
EVAPORATION RATE(nBuAc = 1): Not applicable.
COEFFICIENT WATER/OIL DISTRIBUTION: 2.36
ODOR THRESHOLD: 22,000-36,000 mg/m^3

pH: Not applicable.
FREEZING POINT: -187.7°C (-305.9°F)
BOILING POINT @ 1 atm: -42°C (-43.7°F)
EXPANSION RATIO: Not applicable.
SPECIFIC VOLUME (ft^3/lb): 8.7
VAPOR PRESSURE (psia): 123.7

APPEARANCE AND COLOR: Colorless gas with a faint odor at high concentrations. The liquid is also colorless and has a faint odor at high concentrations.

HOW TO DETECT THIS SUBSTANCE (warning properties): There are no distinct warning properties. The odor is not a reliable warning property. In terms of leak detection, fittings and joints can be painted with a soap solution to detect leaks, which will be indicated by a bubble formation.

10. STABILITY and REACTIVITY

STABILITY: Stable.

DECOMPOSITION PRODUCTS: When ignited in the presence of oxygen, this gas will burn to produce carbon monoxide, carbon dioxide.

MATERIALS WITH WHICH SUBSTANCE IS INCOMPATIBLE: Strong oxidizers (e.g., chlorine, bromine pentafluoride, oxygen, oxygen difluoride, and nitrogen trifluoride).

HAZARDOUS POLYMERIZATION: Will not occur.

CONDITIONS TO AVOID: Contact with incompatible materials and exposure to heat, sparks and other sources of ignition.

PART IV *Is there any other useful information about this material?*

11. TOXICOLOGICAL INFORMATION

TOXICITY DATA: The following information is for pure Propane.

Skin Contact (Rabbit): Several formulations containing an isobutane-propane mixture were tested for skin irritation effects. All formulations contained less than 13% propane. All of the formulations containing propane caused only mild irritation.

Effects on Short-Term Inhalation: Guinea-pigs breathing 5.5% propane by volume developed tremors after 5 minutes. Nausea, retching, and stupefaction were observed when animals were exposed for 30-120 minutes. All the animals survived a two-hour exposure and had no significant tissue damage. A gas concentration of 89% did not cause anesthesia, but depressed the blood pressure of cats. Inhalation of 10 percent propane by mice and 15% by dogs cause weak cardiac sensitization, Presumably, all of these effects are reversible when exposure ceases. In primates, 10% propane caused some change in heart function. At 20% there was aggravation of these symptoms and respiratory depression.

Effects of Long-Term Inhalation: No toxicity or abnormalities were observed when monkeys were exposed to approximately 750 ppm for 90 days. Similar results were obtained when monkeys were exposed to an aerosol spray containing 65% propane and isobutane.

SUSPECTED CANCER AGENT: Propane is not found on the following lists: FEDERAL OSHA Z LIST, NTP, IARC, CAL/OSHA, and therefore is neither considered to be nor suspected to be a cancer-causing agent by these agencies.

IRRITANCY OF PRODUCT: Propane is not irritating; however, contact with rapidly expanding gases can cause frostbite to exposed tissue.

SENSITIZATION TO THE PRODUCT: Propane is not known to cause sensitization in humans; however, some animal studies indicate that exposure to Propane can cause weak cardiac sensitization.

REPRODUCTIVE TOXICITY INFORMATION: Listed below is information concerning the effects Propane on the human reproductive system.

Mutagenicity: No mutagenicity effects have been described for Propane.
Embryotoxicity: No embryotoxic effects have been described for Propane.
Teratogenicity: No teratogenicity effects have been described for Propane.
Reproductive Toxicity: No reproductive toxicity effects have been described for Propane.

11. TOXICOLOGICAL INFORMATION (Continued)

REPRODUCTIVE TOXICITY INFORMATION (continued):

A mutagen is a chemical which causes permanent changes to genetic material (DNA) such that the changes will propagate through generational lines. An embryotoxin is a chemical which causes damage to a developing embryo (i.e., within the first eight weeks of pregnancy in humans), but the damage does not propagate across generational lines. A teratogen is a chemical which causes damage to a developing fetus, but the damage does not propagate across generational lines. A reproductive toxin is any substance which interferes in any way with the reproductive process.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Acute or chronic respiratory conditions may be aggravated by overexposure to Propane.

RECOMMENDATIONS TO PHYSICIANS: Administer oxygen, if necessary. Treat symptoms and eliminate exposure.

BIOLOGICAL EXPOSURE INDICES (BEIs): Currently, there are no Biological Exposure Indices for Propane.

12. ECOLOGICAL INFORMATION

ENVIRONMENTAL STABILITY: This gas will be dissipated rapidly in well-ventilated areas. Additional environmental data are available for Propane as follows:

PROPANE: Log K_{ow} = 2.36. Water Solubility = 62.4 ppm (25°C). Log BCF (calculated) = 1.56 and 1.78. The bioconcentration in aquatic organisms is not expected to be important. Propane is readily degraded by soil bacteria

EFFECT OF MATERIAL ON PLANTS or ANIMALS: Any adverse effect on animals would be related to oxygen-deficient environments. No adverse effect is anticipated to occur to plant life, except for frost produced in the presence of rapidly expanding gases.

EFFECT OF CHEMICAL ON AQUATIC LIFE: No evidence is currently available on Propane's effects on aquatic life.

13. DISPOSAL CONSIDERATIONS

PREPARING WASTES FOR DISPOSAL: Waste disposal must be in accordance with appropriate Federal, State, and local regulations. Return cylinders with any residual product to Quimby Corp. Do not dispose of locally.

14. TRANSPORTATION INFORMATION

THIS MATERIAL IS HAZARDOUS AS DEFINED BY 49 CFR 172.101 BY THE U.S. DEPARTMENT OF TRANSPORTATION.

For Propane Gas:

PROPER SHIPPING NAME:	Propane
HAZARD CLASS NUMBER and DESCRIPTION:	2.1 (Flammable Gas)
UN IDENTIFICATION NUMBER:	UN 1978
PACKING GROUP:	Not Applicable
DOT LABEL(S) REQUIRED:	Flammable Gas

NORTH AMERICAN EMERGENCY RESPONSE GUIDEBOOK NUMBER (2000): 115

Alternate Description:

PROPER SHIPPING NAME:	Petroleum gases, liquefied
HAZARD CLASS NUMBER and DESCRIPTION:	2.1 (Flammable Gas)
UN IDENTIFICATION NUMBER:	UN 1075
PACKING GROUP:	Not Applicable
DOT LABEL(S) REQUIRED:	Flammable Gas

NORTH AMERICAN EMERGENCY RESPONSE GUIDEBOOK NUMBER (2000): 115

MARINE POLLUTANT: *n*-Butane is not classified by the DOT as a Marine Pollutant (as defined by 49 CFR 172.101, Appendix B).

TRANSPORT CANADA TRANSPORTATION OF DANGEROUS GOODS REGULATIONS: THIS MATERIAL IS CONSIDERED AS DANGEROUS GOODS. Use the above information for the preparation of Canadian Shipments.

15. REGULATORY INFORMATION

U.S. SARA REPORTING REQUIREMENTS: Propane is not subject to the reporting requirements of Sections 302, 304, and 313 of Title III of the Superfund Amendments and Reauthorization Act.

U.S. SARA THRESHOLD PLANNING QUANTITY: Not applicable.

15. REGULATORY INFORMATION (Continued)

CANADIAN DSL/NDSL INVENTORY STATUS: Propane is on the DSL Inventory.

U.S. TSCA INVENTORY STATUS: Propane is on the TSCA Inventory.

OTHER U.S. FEDERAL REGULATIONS: Propane is subject to the reporting requirements of Section 112(r) of the Clean Air Act. The Threshold Quantity for this gas is 10,000 lb. Depending on specific operations involving the use of Propane, the regulations of the Process Safety Management of Highly Hazardous Chemicals may be applicable (29 CFR 1910.119). Under this regulation Propane is not listed in Appendix A; however, any process that involves a flammable gas on-site, in one location, in quantities of 10,000 lb (4,553 kg) or greater is covered under this regulation unless it is used as a fuel.

U.S. STATE REGULATORY INFORMATION: Propane is covered under specific State regulations, as denoted below:

Alaska - Designated Toxic and Hazardous Substances: Propane.
California - Permissible Exposure Limits for Chemical Contaminants: Propane.
Florida - Substance List: No.
Illinois - Toxic Substance List: Propane.
Kansas - Section 302/313 List: No.
Massachusetts - Substance List: Propane.
Michigan - Critical Materials Register: No.
Minnesota - List of Hazardous Substances: Propane.
Missouri - Employer Information/Toxic Substance List: Propane.
New Jersey - Right to Know Hazardous Substance List: Propane.
North Dakota - List of Hazardous Chemicals, Reportable Quantities: No.
Pennsylvania - Hazardous Substance List: Propane.
Rhode Island - Hazardous Substance List: Propane.
Texas - Hazardous Substance List: Propane.
West Virginia - Hazardous Substance List: Propane.
Wisconsin - Toxic and Hazardous Substances: Propane.

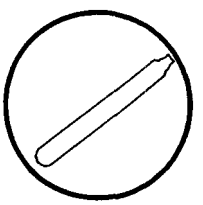
CALIFORNIA SAFE DRINKING WATER AND TOXIC ENFORCEMENT ACT (PROPOSITION 65): Propane is not on the California Proposition 65 lists.

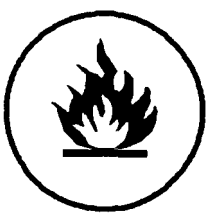
LABELING:

DANGER:
FLAMMABLE LIQUID AND GAS UNDER PRESSURE.
CAN FORM EXPLOSIVE MIXTURES WITH AIR.
MAY CAUSE FROSTBITE.
Keep away from heat, flames, and sparks.
Store and use with adequate ventilation.
Cylinder temperature should not exceed 52°C (125°F).
Do not get liquid in eyes, on skin or clothing.
Close valve after each use and when empty.
Use in accordance with the Material Safety Data Sheet.

FIRST-AID:
IF INHALED, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.
IN CASE OF FROSTBITE, obtain immediate medical attention.
DO NOT REMOVE THIS PRODUCT LABEL

CANADIAN WHMIS SYMBOLS:
Class A: Compressed Gases
Class B1: Flammable Gas





16. OTHER INFORMATION

The information contained herein is based on data considered accurate. However, no warranty is expressed or implied regarding the accuracy of these data or the results to be obtained from the use thereof. Quimby Corporation assumes no responsibility for injury to the vendee or third persons proximately caused by the material if reasonable safety procedures are not adhered to as stipulated in the data sheet. Additionally, Quimby Corporation assumes no responsibility for injury to vendee or third persons proximately caused by abnormal use of the material even if reasonable safety procedures are followed. Furthermore, vendee assumes the risk in his use of the material.

DEFINITIONS OF TERMS

A large number of abbreviations and acronyms appear on a MSDS. Some of these which are commonly used include the following:

CAS #: This is the Chemical Abstract Service Number which uniquely identifies each constituent. It is used for computer-related searching.

EXPOSURE LIMITS IN AIR:
ACGIH - American Conference of Governmental Industrial Hygienists, a professional association which establishes exposure limits. **TLV** - Threshold Limit Value - an airborne concentration of a substance which represents conditions under which it is generally believed that nearly all workers may be repeatedly exposed without adverse effect. The duration must be considered, including the 8-hour Time Weighted Average **(TWA)**, the 15-minute Short Term Exposure Limit, and the instantaneous Ceiling Level **(C)**. Skin absorption effects must also be considered.
OSHA - U.S. Occupational Safety and Health Administration. **PEL** - Permissible Exposure Limit - This exposure value means exactly the same as a TLV, except that it is enforceable by OSHA. The OSHA Permissible Exposure Limits are based in the 1989 PELs and the June, 1993 Air Contaminants Rule (Federal Register: 58: 35338-35351 and 58: 40191). Both the current PELs and the vacated PELs are indicated. The phrase, "Vacated 1989 PEL," is placed next to the PEL which was vacated by Court Order.
IDLH - Immediately Dangerous to Life and Health - This level represents a concentration from which one can escape within 30-minutes without suffering escape-preventing or permanent injury. **The DFG - MAK** is the Republic of Germany's Maximum Exposure Level, similar to the U.S. PEL. **NIOSH** is the National Institute of Occupational Safety and Health, which is the research arm of the U.S. Occupational Safety and Health Administration (**OSHA**). NIOSH issues exposure guidelines called Recommended Exposure Levels (**RELs**). When no exposure guidelines are established, an entry of **NE** is made for reference.

HAZARD RATINGS:
HAZARDOUS MATERIALS IDENTIFICATION SYSTEM: Health Hazard: **0** (minimal acute or chronic exposure hazard); **1** (slight acute or chronic exposure hazard); **2** (moderate acute or significant chronic exposure hazard); **3** (severe acute exposure hazard; onetime overexposure can result in permanent injury and may be fatal); **4** (extreme acute exposure hazard; onetime overexposure can be fatal). Flammability Hazard: **0** (minimal hazard); **1** (materials that require substantial pre-heating before burning); **2** (combustible liquid or solids; liquids with a flash point of 38-93°C [100-200°F]); **3** (Class IB and IC flammable liquids with flash points below 38°C [100°F]); **4** (Class IA flammable liquids with flash points below 23°C [73°F] and boiling points below 38°C [100°F]. Reactivity Hazard: **0** (normally stable); **1** (material that can become unstable at elevated temperatures or which can react slightly with water); **2** (materials that are unstable but do not detonate or which can react violently with water); **3** (materials that can detonate when initiated or which can react explosively with water); **4** (materials that can detonate at normal temperatures or pressures).
NATIONAL FIRE PROTECTION ASSOCIATION: Health Hazard: **0** (material that on exposure under fire conditions would offer no hazard beyond that of ordinary combustible materials); **1** (materials that on exposure under fire conditions could cause irritation or minor residual injury); **2** (materials that on intense or continued exposure under fire conditions could cause temporary incapacitation or possible residual injury); **3** (materials that can on short exposure could cause serious temporary or residual injury); **4** (materials that under very short exposure causes death or major residual injury).

NATIONAL FIRE PROTECTION ASSOCIATION (Continued):
Flammability Hazard and Reactivity Hazard: Refer to definitions for "Hazardous Materials Identification System".

FLAMMABILITY LIMITS IN AIR:
Much of the information related to fire and explosion is derived from the National Fire Protection Association (**NFPA**). Flash Point - Minimum temperature at which a liquid gives off sufficient vapors to form an ignitable mixture with air. Autoignition Temperature: The minimum temperature required to initiate combustion in air with no other source of ignition. LEL - the lowest percent of vapor in air, by volume, that will explode or ignite in the presence of an ignition source. UEL - the highest percent of vapor in air, by volume, that will explode or ignite in the presence of an ignition source.

TOXICOLOGICAL INFORMATION:
Possible health hazards as derived from human data, animal studies, or from the results of studies with similar compounds are presented. Definitions of some terms used in this section are: **LD_{50}** - Lethal Dose (solids & liquids) which kills 50% of the exposed animals; **LC_{50}** - Lethal Concentration (gases) which kills 50% of the exposed animals; **ppm** concentration expressed in parts of material per million parts of air or water; **mg/m^3** concentration expressed in weight of substance per volume of air; **mg/kg** quantity of material, by weight, administered to a test subject, based on their body weight in kg. Data from several sources are used to evaluate the cancer-causing potential of the material. The sources are: **IARC** - the International Agency for Research on Cancer; **NTP** - the National Toxicology Program, **RTECS** - the Registry of Toxic Effects of Chemical Substances, **OSHA** and **CAL/OSHA**. IARC and NTP rate chemicals on a scale of decreasing potential to cause human cancer with rankings from 1 to 4. Subrankings (2A, 2B, etc.) are also used. Other measures of toxicity include **TDLo**, the lowest dose to cause a symptom and **TCLo** the lowest concentration to cause a symptom; **TDo**, **LDLo**, and **LDo**, or **TC**, **TCo**, **LCLo**, and **LCo**, the lowest dose (or concentration) to cause lethal or toxic effects. **BEI** - Biological Exposure Indices, represent the levels of determinants which are most likely to be observed in specimens collected from a healthy worker who has been exposed to chemicals to the same extent as a worker with inhalation exposure to the TLV. Ecological Information: EC is the effect concentration in water.

REGULATORY INFORMATION:
This section explains the impact of various laws and regulations on the material. **EPA** is the U.S. Environmental Protection Agency. **WHMIS** is the Canadian Workplace Hazardous Materials Information System. **DOT** and **TC** are the U.S. Department of Transportation and the Transport Canada, respectively. Superfund Amendments and Reauthorization Act **(SARA)**; the Canadian Domestic/Non-Domestic Substances List **(DSL/NDSL)**; the U.S. Toxic Substance Control Act **(TSCA)**; Marine Pollutant status according to the **DOT**; the Comprehensive Environmental Response, Compensation, and Liability Act **(CERCLA or Superfund)**; and various state regulations.

Welding

MATERIAL SAFETY DATA SHEET

WM781

This MSDS complies with OSHA'S Hazard Communication standard 29 CFR 1910.1200 and OSHA Form 174

IDENTITY AND MANUFACTURER'S INFORMATION

NFPA Rating: Health-2; Flammability-0; Reactivity-1 ; Special-

HMIS Rating: Health-2; Flammability-0; Reactivity-1; Personal Protection-C

Manufacturer's Name: DYNAFLUX, INC.
241 Brown Farm Rd.
Cartersville, GA 30120

Manuafactured for: I.W.D.C. Indianapolis, IN 46219

DOT Hazard Classification: None

Identity (trade name as used on label): [redacted]

Date Prepared: 5/1/96 Prepared By: GS

MSDS Number: WM781 Revision: 1/11/00

Emergency Response Number: CHEMTEL 1(800)255-3924

SECTION 1 - MATERIAL INDENTIFICATION AND INFORMATION

COMPONENTS-CHEMICAL NAMES AND COMMON NAMES (Hazardous Components 1% or greater; Carcinogens 0.1% or greater)	CAS NUMBER	SARA III LIST	OSHA PEL (PPM)	ACGIH TLV (ppm)	Carcinogen Ref. source*
Phosphoric Acid	7664-38-2	yes	1mg/m3	1mg/m3	d
Ammonium biflouride	1341-49-7	yes	NE	NE	d

SECTION 2 - PHYSICAL/CHEMICAL CHARACTERISTICS

Boiling Point: 212 F

Specific Gravity (H2O=1): 1.139

Vapor Pressure:(PSIG @ 70 F (Aerosols):

Vapor Pressure:(Non-Aerosols)(mm Hg and Temperature): 17mmHg, 20 C

Vapor Density:(Air=1): Unkown

Evaporation Rate (BUAC=1): 1

Solubility in Water: NR

Water Reactive: None

Appearance and Odor: Clear, water-white liquid with solvent odor.

SECTION 3 - FIRE AND EXPOLOSION HAZARD DATA

FLAMMABILITY as per USA FLAME PROJECTION TEST (aerosols) NA

Auto Ignition Temperature NA

Flammability Limits in Air by % in Volume: %LEL: NA %UEL: NA

FLASH POINT AND METHOD USED (non-aerosols): None

EXTINGUISHER MEDIA: None required

SPECIAL FIRE FIGHT PROCEDURES: None required

Unusual Fire & Explosion Hazards: None

SECTION 4 - REACTIVITY HAZARD DATA

STABILITY: [X] STABLE [ ] UNSTABLE

HAZARDOUS POLYMERIZATION [ ] WILL [X] WILL NOT OCCUR

Incompatibility (Mat. to Avoid): NA

Conditions to Avoid: None

Hazardous Decompositon Products: Hydrogen Flounde

SECTION 5 - HEALTH HAZARD DATA

PRIMARY ROUTES OF ENTRY: [ ] INHALATION [ ] INGESTION [X] SKIN ABSORPTION [X] EYE [ ] NOT HAZARDOUS

ACUTE EFFECTS:

Inhalation: Can irritate nose and throat.

Eye contact: May cause burns.

Skin contact Causes burns not immeidately apparent.

Ingestion: Can cause severe mouth, throat and stomach burns. Get medical attention.

CHRONIC EFFECTS: Can cause delayed burn effects from exposure.

Medical conditions Generally Aggravated by Exposure: Asthma

EMERGENCY FIRST AID PROCEDURES

Eye Contact: Flush immediately with water. CALL PHYSICIAN

Skin Contact: Wash immediately with soap and water. call physician if irritation persists.

Inhalation: Remove to fresh air.

Ingestion: DO NOT INDUCE VOMITING. Give large amounts of water or milk. CALL PHYSICIAN.

SECTION 6 - CONTROL AND PROTECTIVE MEASURES

Resporatory Protection (specify type): NA

Protective Gloves: Rubber gloves

Eye Protection: Goggles recommended

Ventilation Requirements: Room ventilation is usually adequate.

Other Protective Clothing & Equipment: None required

Hygienic Work Practices: Wash with soap and water before eating or smoking.

SECTION 7 - PRECAUTIONS FOR SAFE HANDLING AND USE

Steps To Be Taken if Material Is Spilled Or Released: Contain spill and avoid contact. Absorb in approved absorption medium. Dispose of of properly. Neutralize remains with bicarbonate. Flush area with water.

Waste Disposal Methods: Dispose in accordance with federal, state and local regulations.

Precautions To Be Taken in Handling & Storage: Keep acid resistant containers away form caustic materials.

Precautions &/or Special Hazards: KEEP OUT OF REACH OF CHILDREN.

We believe the statements, technical information and recommendations contained herin are reliable, but they are given without warranty or guarantee of any kind.

*Chemical Listed as Carcinogen or Potential Carcinogen. [a] NPT [b] IARC Monograph [c] OSHA [d] Not Listed [e] Animal Data Only

ITEM: 4B175 - WHEEL GRINDING 4.5 IN

PICK SEQ: 1131118962 **MATERIAL SAFETY DATA SHEET (MSDS)** **MSDS: A3015**

MSDS should be attached or kept with the respective product with which it is associated.

SAFETY DATA SHEET - A3015

Associated Grainger Item: 4B175 - WHEEL GRINDING 4.5 IN

3WL02, 3WL03, 3WL04, 3WL05, 3WL06, 3WL07, 3WL09, 3WL10, 3WL11, 3WL12, 3WL13
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4B163, 4B164, 4B165, 4B166, 4B167, 4B168, 4B169, 4B170, 4B171, 4B172, 4B173
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5A866, 5A867, 5A868, 5A869, 5A870, 5A871, 5A872, 5A873, 5A874, 5A875, 5A876
5A877, 5A878, 5A879, 5A921, 5A922, 5A923, 5A924, 5A925, 5A926, 5A927, 5A928
5A929, 5A930, 5A931, 5A932, 5A933, 5A935, 5A936, 5A939, 5A940

NORTON

MATERIAL SAFETY DATA SHEET

DATE PRINTED: MAR 07, 2001

MSDS NO.: SICNZRESIN000 OUTBOUND

SIC/NORZON RESIN GRINDING WHEEL

SECTION 1. CHEMICAL PRODUCT AND COMPANY INFORMATION

PRODUCT NAME: SIC/NORZON RESIN GRINDING WHEEL

TRADE NAME: CRYSTALON/NORZON

MANUFACTURER(4):
NORTON COMPANY
1 NEW BOND ST.
WORCESTER, MA, 01615
(508) 795-5000

REVISION DATE: 7/19/1999

MSDS PRINT FORMAT: NUSA

SECTION 2. COMPOSITION/INFORMATION ON INGREDIENTS

[illegible]ANCE DESCRIPTION	PERCENT	CAS#
ALUMIN[illegible] OXIDE, NON-FIBROUS	20.000 - 30.000	1344-28-1
CURED [illegible]L FORMALDEHYDE RESIN	3.000 - 6.000	9003-35-4
FIBERGLASS	0.003 - 3.000	65997-17-3
SILICON CARBIDE	35.000 - 45.000	409-21-2
ZIRCONIUM OXIDE	15.000 - 25.000	1314-23-4

OTHER: NOT APPLICABLE

SECTION 3. HAZARDS IDENTIFICATION

INHALATION ACUTE EXPOSURE EFFECTS:
DUST MAY BE SLIGHTLY IRRITATING TO EYES AND RESPIRATORY TRACT AT HIGH CONCENTRATIONS.

INHALATION CHRONIC EXPOSURE EFFECTS:
CHRONIC: MAY AFFECT BREATHING CAPACITY.

FOR PRODUCTS CONTAINING PHENOL/FORMALDEHYDE RESIN, DUST GENERATED FROM INTENDED USE MAY CONTAIN TRACE AMOUNTS OF PHENOL AND FORMALDEHYDE WHICH UNDER EXCESSIVE EXPOSURE MAY CAUSE SKIN SENSITIZATION AND AIRWAY OBSTRUCTION.

FOR PRODUCTS CONTAINING INORGANIC FLUORIDES, EXCESSIVE EXPOSURE TO INORGANIC FLUORIDES HAVE BEEN SHOWN TO INCREASE BONE DENSITY.

EYE CONTACT ACUTE EXPOSURE EFFECTS: DUST MAY IRRITATE EYES.

SKIN CONTACT ACUTE EXPOSURE EFFECTS:
SOME MAY EXPERIENCE SKIN IRRITATION FROM DUST.

INGESTION ACUTE EXPOSURE EFFECTS:
NO KNOWN ADVERSE EFFECTS, BUT INGESTION NOT RECOMMENDED.

SECTION 4. FIRST AID MEASURES

INHALATION:
REMOVE TO FRESH AIR. IF BREATHING HAS STOPPED, GIVE ARTIFICIAL RESPIRATION. GET MEDICAL ATTENTION IMMEDIATELY.

SKIN CONTACT:
W[illegible] AFFECTED AREAS WITH SOAP AND WATER. OBTAIN MEDICAL ASSISTANCE.

[illegible]NTACT:
[illegible] WITH LARGE AMOUNTS OF WATER. OBTAIN FIRST AID AND MEDICAL ASSISTANCE, IF NEEDED.

INGESTION:
CALL POI[illegible]ON CONTROL CENTER, HOSPITAL EMERGENCY ROOM OR PHYSICIAN IMMEI[illegible]TY.

SECTION 5. FIRE FIGHTING MEASURES

FIRE FIGHTING PROCEDURES: NOT APPLICABLE

HAZARDOUS PRODUCTS/COMBUSTION: NONE.

HAZARD RATING SOURCE:

NFPA:
HEALTH 1
FLAMMABILITY 0
REACTIVITY 0
OTHER

SECTION 6. ACCIDENTAL RELEASE MEASURES

CLEAN-UP: FOLLOW NORMAL CLEAN UP PROCEDURES.

SECTION 7. HANDLING AND STORAGE

HANDLING:
ALWAYS HANDLE AND STORE WHEELS IN A CAREFUL MANNER.
ALWAYS VISUALLY INSPECT ALL WHEELS BEFORE MOUNTING.
ALWAYS CHECK MACHINE SPEED AGAINST THE ESTABLISHED MAXIMUM SAFE OPERATING SPEED MARKED ON THE WHEEL.
ALWAYS CHECK MOUNTING FLANGES FOR EQUAL AND CORRECT DIAMETER.
ALWAYS USE MOUNTING BLOTTERS.
ALWAYS BE SURE WORK REST IS PROPERLY ADJUSTED.
ALWAYS USE A SAFETY GUARD COVERING AT LEAST ONE-HALF OF THE GRINDING WHEEL.
ALWAYS ALLOW NEWLY MOUNTED WHEELS TO RUN AT OPERATING SPEED, WITH GUARD IN PLACE, FOR AT LEAST ONE MINUTE BEFORE GRINDING.
ALWAYS TURN OFF COOLANT BEFORE STOPPING WHEEL TO AVOID CREATING AN OUT-OF-BALANCE WHEEL.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

VENTILATION PROTECTION:
RECOMMEND USING LOCAL EXHAUST VENTILATION WHEN GENERAL VENTILATION IS NOT KEEPING THE AIRBORNE CONCENTRATION BELOW THE TLV.

RESPIRATORY PROTECTION:
RESPIRATORS ARE REQUIRED WHEN AIRBORNE CONTAMINANT LEVELS EXCEED THE TLV(S).

EYE PROTECTION:
ALWAYS WEAR SAFETY GLASSES OR SOME TYPE OF EYE PROTECTION WHEN GRINDING.

OTHER PROTECTION:
USE OF THIS PRODUCT MAY CREATE ELEVATED SOUND LEVELS. HEARING PROTECTION SHOULD BE WORN WHERE REQUIRED (SEE OSHA 29 CFR 1910.134 AND OTHER APPLICABLE REGULATIONS).

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE &ODOR: SOLID ARTICLE. ODORLESS.

SECTION 10. STABILITY AND REACTIVITY

INCOMPATIBILITIES: AVOID ACIDS OF ALL TYPES WITH A pH <4.0.

DECOMPOSITION:
IN USE, DUST AND DECOMPOSING ODORS MAY BE GENERATED. IN MOST CASES, THE MATERIAL REMOVED FROM THE WORKPLACE WILL BE SIGNIFICANTLY GREATER THAN THE GRINDING WHEEL COMPONENTS. COOLANTS MAY PRODUCE OTHER DECOMPOSITION PRODUCTS.

FOR PRODUCTS CONTAINING PHENOL AND FORMALDEHYDE RESIN, THERMAL DECOMPOSITION MAY PRODUCE TRACE AMOUNTS OF PHENOL AND FORMALDEHYDE.
FOR PRODUCTS CONTAINING INORGANIC FLUORIDES, THERMAL DECOMPOSITION MAY PRODUCE TRACE AMOUNTS OF FLUORIDES.

SECTION 11. TOXICOLOGICAL INFORMATION

CARCINOGENICITY:
FOR WHEELS CONTAINING FIBERGLASS, FIBER DIAMETERS ARE GREATER THAN 10(MICRO)M, THEREFORE CONSIDERED NON-RESPIRABLE.

FIBERGLASS: IARC-3

LD50/LC50: VALUES ARE NOT APPROPRIATE OR AVAILABLE.

SECTION 12. ECOLOGICAL INFORMATION

CHEMICAL FATE:
RESIN BONDED MATERIALS DEMONSTRATE SIMILAR DEGRADATION RATES AS PHENOLIC PLASTICS.
VITRIFIED PRODUCTS DO NOT APPRECIABLY DECAY.

SECTION 13. DISPOSAL CONSIDERATIONS

WASTE DISPOSAL:
USE STANDARD LANDFILL METHODS CONSISTENT WITH APPLICABLE FEDERAL, STATE, PROVINCIAL AND LOCAL LAWS.
PRODUCTS WITH LISTED FLUORIDES MAY HAVE SLIGHTLY SOLUBLE FLUORIDE SWARF.

RECYCLING PROGRAM:
THE COMPANY HAS DEVELOPED A GRINDING WHEEL RECYCLING PROGRAM. IF YOU ARE INTERESTED IN RETURNING YOUR STUBS, INFORMATION CAN BE OBTAINED BY DIALING CUSTOMER SERVICE.

SECTION 14. TRANSPORT INFORMATION

HAZARD CLASS: N/A

SECTION 15. REGULATORY INFORMATION

EXPOSURE LIMITS/REGULATORY INFORMATION:

SUBS	DESCRIPTION	UNITS	OSHA	ACGIH	MOL
	OXIDE, NON-FIBROUS	MG/M3	15.0000	10.0000	10.0000
C[illegible] RESIN	[illegible]OLFORMALDEHYDE	PPM	0.0000	0.0000	0.0000
FIBERGLASS		FBR/CC	1.0000	0.0000	0.0000
SILICON CARBIDE		MG/M3	10.0000	10.0000	10.0000
ZIRCONIUM OXIDE		MG/M3	5.0000	5.0000	5.0000

LEGEND:

EXPOSURE LIMIT DESCRIPTIONS:

CA PROP 65: NOT APPLICABLE

TSCA:
SECTION 8(B) - INVENTORY STATUS:
ALL COMPONENTS OF THIS PRODUCT ARE REGISTERED UNDER THE REGULATIONS OF THE TOXIC SUBSTANCE CONTROL ACT.

DOMESTIC SUBSTANCE LIST:

SECTION 16. OTHER INFORMATION

KEY TO ABBREVIATIONS:
EQ=EQUAL
LT=LESS THAN
GT=GREATER THAN
AP=APPROXIMATELY
TR=TRACE
ND=NO DATA AVAILABLE

DISCLAIMER:
THE INFORMATION AND RECOMMENDATIONS SET FORTH HEREIN ARE TAKEN FROM SOURCES BELIEVED TO BE ACCURATE AS OF THE DATE HEREOF; HOWEVER, THE COMPANY MAKES NO WARRANTY WITH RESPECT TO THE ACCURACY OF THE INFORMATION OR THE SUITABILITY OF THE RECOMMENDATIONS, AND ASSUMES NO LIABILITY TO ANY USER THEREOF.

ITEM: 4B175 - WHEEL GRINDING 4.5 IN

PICK REQ: 1131118962 **MATERIAL SAFETY DATA SHEET (MSDS)** **MSDS: A6423**

MSDS should be attached or kept with the respective product with which it is associated.

Associa. d Grainger Item: 4B175 - WHEEL GRINDING 4.5 IN

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4B163, 4B164, 4B165, 4B166, 4B167, 4B168, 4B169, 4B170, 4B171, 4B172, 4B173
4B174, 4B175, 4F871, 4F872, 4F873, 4F874, 4F875, 4F876, 5A863, 5A864, 5A865
5A866, 5A867, 5A868, 5A869, 5A870, 5A871, 5A872, 5A873, 5A874, 5A875, 5A876
5A877, 5A878, 5A879, 5A921, 5A922, 5A923, 5A924, 5A925, 5A926, 5A927, 5A928
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NORTON

MATERIAL SAFETY DATA SHEET

DATE PRINTED: JUN 01, 2004

MSDS NO.: SICNZRESIN000 OUTBOUND

SiC/NORZON RESIN GRINDING WHEEL

SECTION 1. CHEMICAL PRODUCT AND COMPANY INFORMATION

PRODUCT NAME: SiC/NORZON RESIN GRINDING WHEEL

TRADE NAME: CRYSTALON/NORZON

MANUFACTURER(4):
SAINT-GOBAIN ABRASIVES, INC.
ONE NEW BOND STREET
WORCESTER, MA, 01606
(508) 795-5000

REVISION DATE: 6/01/2004

MSDS PRINT FORMAT

N

SECTION 2. COMPOSITION/INFORMATION ON INGREDIENTS

SUBST DESCRIPTION	PERCENT	CAS#
ALUMIN KIDE, NON-FIBROUS	20.000-30.000	1344-28-1
CURED PHENOLFORMALDEHYDE RESIN	3.000-6.000	9003-35-4
FIBERGLASS	0.003-3.000	65997-17-3
SILICON CARBIDE	35.000-45.000	409-21-2
ZIRCONIUM OXIDE	15.000-25.000	1314-23-4

OTHER: NOT APPLICABLE

SECTION 3. HAZARDS IDENTIFICATION

INHALATION ACUTE EXPOSURE EFFECTS:
DUST MAY BE SLIGHTLY IRRITATING TO EYES AND RESPIRATORY TRACT AT HIGH CONCENTRATIONS.

INHALATION CHRONIC EXPOSURE EFFECTS:
CHRONIC: MAY AFFECT BREATHING CAPACITY.
FOR PRODUCTS CONTAINING PHENOL/FORMALDEHYDE RESIN, DUST GENERATED FROM INTENDED USE MAY CONTAIN TRACE AMOUNTS OF PHENOL AND FORMALDEHYDE WHICH UNDER EXCESSIVE EXPOSURE MAY CAUSE SKIN SENSITIZATION AND AIRWAY OBSTRUCTION.
FOR PRODUCTS CONTAINING INORGANIC FLUORIDES, EXCESSIVE EXPOSURE TO INORGANIC FLUORIDES HAVE BEEN SHOWN TO INCREASE BONE DENSITY.

EYE CONTACT ACUTE EXPOSURE EFFECTS: DUST MAY IRRITATE EYES.

SKIN CONTACT ACUTE EXPOSURE EFFECTS:
SOME MAY EXPERIENCE SKIN IRRITATION FROM DUST.

INGESTION ACUTE EXPOSURE EFFECTS:
NO KNOWN ADVERSE EFFECTS, BUT INGESTION NOT RECOMMENDED.

SECTION 4. FIRST AID MEASURES

INHALATION:
REMOVE TO FRESH AIR. IF BREATHING HAS STOPPED, GIVE ARTIFICIAL RESPIRATION. GET MEDICAL ATTENTION IMMEDIATELY.

SKIN CONTACT:
W AFFECTED AREAS WITH SOAP AND WATER. OBTAIN MEDICAL ASSISTANCE.

NTACT:
W WITH LARGE AMOUNTS OF WATER. OBTAIN FIRST AID AND MEDICAL ASSISTANCE, IF NEEDED.

INGESTION:
CALL SON CONTROL CENTER, HOSPITAL EMERGENCY ROOM OR PHYSICIAN IMMED LY.

SECTION 5. FIRE FIGHTING MEASURES

FIRE FIGHTING PROCEDURES: NOT APPLICABLE

HAZARDOUS PRODUCTS/COMBUSTION: NONE.

HAZARD RATING SOURCE:
NFPA:
HEALTH 1
FLAMMABILITY 0
REACTIVITY 0
OTHER

SECTION 6. ACCIDENTAL RELEASE MEASURES

CLEAN-UP: FOLLOW NORMAL CLEAN UP PROCEDURES.

SECTION 7. HANDLING AND STORAGE

HANDLING:
ALWAYS HANDLE AND STORE WHEELS IN A CAREFUL MANNER.
ALWAYS VISUALLY INSPECT ALL WHEELS BEFORE MOUNTING.
ALWAYS CHECK MACHINE SPEED AGAINST THE ESTABLISHED MAXIMUM SAFE OPERATING SPEED MARKED ON THE WHEEL.
ALWAYS CHECK MOUNTING FLANGES FOR EQUAL AND CORRECT DIAMETER.
ALWAYS USE MOUNTING BLOTTERS.
ALWAYS BE SURE WORK REST IS PROPERLY ADJUSTED.
ALWAYS USE A SAFETY GUARD COVERING AT LEAST ONE-HALF OF THE GRINDING WHEEL.
ALWAYS ALLOW NEWLY MOUNTED WHEELS TO RUN AT OPERATING SPEED, WITH GUARD IN PLACE, FOR AT LEAST ONE MINUTE BEFORE GRINDING.
ALWAYS TURN OFF COOLANT BEFORE STOPPING WHEEL TO AVOID CREATING AN OUT-OF-BALANCE WHEEL

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

VENTILATION PROTECTION:
RECOMMEND USING LOCAL EXHAUST VENTILATION WHEN GENERAL VENTILATION IS NOT KEEPING THE AIRBORNE CONCENTRATION BELOW THE TLV.

RESPIRATORY PROTECTION:
RESPIRATORS ARE REQUIRED WHEN AIRBORNE CONTAMINANT LEVELS EXCEED THE TLV(S).

EYE PROTECTION:
ALWAYS WEAR SAFETY GLASSES OR SOME TYPE OF EYE PROTECTION WHEN GRINDING.

OTHER PROTECTION:
USE OF THIS PRODUCT MAY CREATE ELEVATED SOUND LEVELS. HEARING PROTECTION SHOULD BE WORN WHERE REQUIRED (SEE OSHA 29 CFR 1910.134 AND OTHER APPLICABLE REGULATIONS).

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE & ODOR: SOLID ARTICLE. ODORLESS.

SECTION 10. STABILITY AND REACTIVITY

INCOMPATIBILITIES: AVOID ACIDS OF ALL TYPES WITH A pH < 4.0.

DECOMPOSITION:
IN USE, DUST AND DECOMPOSING ODORS MAY BE GENERATED. IN MOST CASES, THE MATERIAL REMOVED FROM THE WORKPLACE WILL BE SIGNIFICANTLY GREATER THAN THE GRINDING WHEEL COMPONENTS. COOLANTS MAY PRODUCE OTHER DECOMPOSITION PRODUCTS.
FOR PRODUCTS CONTAINING PHENOL AND FORMALDEHYDE RESIN, THERMAL DECOMPOSITION MAY PRODUCE TRACE AMOUNTS OF PHENOL AND FORMALDEHYDE.
FOR PRODUCTS CONTAINING INORGANIC FLUORIDES, THERMAL DECOMPOSITION MAY PRODUCE TRACE AMOUNTS OF FLUORIDES.

SECTION 11. TOXICOLOGICAL INFORMATION

CARCINOGENICITY:
FOR WHEELS CONTAINING FIBERGLASS, FIBER DIAMETERS ARE GREATER THAN 10(MICRO)M, THEREFORE CONSIDERED NON-RESPIRABLE.
FIBERGLASS - IARC-3

LD50/LC50: VALUES ARE NOT APPROPRIATE OR AVAILABLE.

SECTION 12. ECOLOGICAL INFORMATION

CHEMICAL FATE:
RESIN BONDED MATERIALS DEMONSTRATE SIMILAR DEGRADATION RATES AS PHENOLIC PLASTICS.
VITRIFIED PRODUCTS DO NOT APPRECIABLY DECAY.

SECTION 13. DISPOSAL CONSIDERATIONS

WASTE DISPOSAL:
USE STANDARD LANDFILL METHODS CONSISTENT WITH APPLICABLE FEDERAL, STATE, PROVINCIAL AND LOCAL LAWS.
PRODUCTS WITH LISTED FLUORIDES MAY HAVE SLIGHTLY SOLUBLE FLUORIDE SWARF.

RECYCLING PROGRAM - THE COMPANY HAS DEVELOPED A GRINDING WHEEL RECYCLING PROGRAM. IF YOU ARE INTERESTED IN RETURNING YOUR STUBS, INFORMATION CAN BE OBTAINED BY DIALING CUSTOMER SERVICE.

SECTION 14. TRANSPORT INFORMATION

HAZARD CLASS: N/A

SECTION 15. REGULATORY INFORMATION

EXPOSURE LIMITS/REGULATORY INFORMATION:

SUBSTANCE DESCRIPTION	UNITS	OSHA	ACGIH	MOL
ALUMINUM OXIDE, NON-FIBROUS	MG/M3	15.0000	10.0000	10.0000
CURED PHENOL FORMALDEHYDE RESIN	PPM	0.0000	0.0000	0.0000
[illegible] SS	FBR/CC	1.0000	0.0000	0.0000
S[illegible]ON CARBIDE	MG/M3	10.0000	10.0000	10.0000
ZIRCONIUM OXIDE	MG/M3	5.0000	5.0000	5.0000

LEGEND:

EXPOSURE LIMIT DESCRIPTIONS:

CA PROP 65: NOT APPLICABLE

TSCA:
SECTION 8(B) - INVENTORY STATUS:
ALL COMPONENTS OF THIS PRODUCT ARE REGISTERED UNDER THE REGULATIONS OF THE TOXIC SUBSTANCE CONTROL ACT.

DOMESTIC SUBSTANCE LIST:

SECTION 16. OTHER INFORMATION

DISCLAIMER:
THE INFORMATION AND RECOMMENDATIONS SET FORTH HEREIN ARE TAKEN FROM SOURCES BELIEVED TO BE ACCURATE AS OF THE DATE HEREOF; HOWEVER, THE COMPANY MAKES NO WARRANTY WITH RESPECT TO THE ACCURACY OF THE INFORMATION OR THE SUITABILITY OF THE RECOMMENDATIONS, AND ASSUMES NO LIABILITY TO ANY USER THEREOF.

KEY TO ABBREVIATIONS:
EQ=EQUAL
LT=LESS THAN
GT=GREATER THAN
AP=APPROXIMATELY
TR=TRACE
ND=NO DATA AVAILABLE

ITEM: 5A954 - DISC ABRASIVE 36 GRIT

PICK_REQ: 1131118962 **MATERIAL SAFETY DATA SHEET (MSDS)** **MSDS: A1491**

MSDS should be attached or kept with the respective product with which it is associated.

SAFETY DATA SHEET - A1491

Associated Grainger Item: 5A954 - DISC ABRASIVE 36 GRIT

1PR50, 1PR51, 1PR52, 1PR53, 1PR54, 1PR55, 1PR56, 1PR57, 1PR58, 1PR59, 1PR95
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NORTON

MATERIAL SAFETY DATA SHEET

DATE PRINTED: MAR 07, 2001

MSDS NO. ALCOAT001 OUTBOUND

ALUMINUM OXIDE COATED ABRASIVE

SECTION 1. CHEMICAL PRODUCT AND COMPANY INFORMATION

PRODUCT NAME:
ALUMINUM OXIDE COATED ABRASIVE

TRADE NAME:
ADALOX OR ABRASIVE CAP CODES:
H1xx, A1xx, A2xx, E2xx, F2xx, G2xx, H2xx, K2xx, Q1xx, Q2xx, R2xx, S2xx, T2xx, U2xx AND W2

MANUFACTURER(4):
NORTON COMPANY
P.O. BOX 808
TROY, NY. 12180
(518) 266-2200

REVISION DATE:
12/04/2000

MSDS PRINT FORMAT
NUSA

SECTION 2. COMPOSITION/INFORMATION ON INGREDIENTS

SUBSTANCE DESCRIPTION	PERCENT	CAS#
ALUMINUM OXIDE, NON-FIBROUS	55.000- 65.000	1344-28-1
CLOTH OR PAPER BACKING	20.000- 30.000	N/A
CURED PHENOL FORMALDEHYDE RESIN	2.500-13.500	9003-35-4
ANIMAL GLUE BOND	2.500-13.500	N/A
CURED UREA FORMALDEHYDE RESIN	2.500-13.500	9011-05-6

OTHER:
NOT APPLICABLE

SECTION 3. HAZARDS IDENTIFICATION

INHALATION ACUTE EXPOSURE EFFECTS:
DUST MAY BE SLIGHTLY IRRITATING TO EYES AND RESPIRATORY TRACT AT HIGH CONCENTRATIONS.

INHALATION CHRONIC EXPOSURE EFFECTS:

CHRONIC:
MAY AFFECT BREATHING CAPACITY.

FOR PRODUCTS CONTAINING PHENOL/FORMALDEHYDE RESIN, DUST GENERATED FROM INTENDED USE MAY CONTAIN TRACE AMOUNTS OF PHENOL AND FORMALDEHYDE WHICH UNDER EXCESSIVE EXPOSURE MAY CAUSE SKIN SENSITIZATION AND AIRWAY OBSTRUCTION.

FOR PRODUCTS CONTAINING INORGANIC FLUORIDES, EXCESSIVE EXPOSURE TO INORGAN FLUORIDES HAVE BEEN SHOWN TO INCREASE BONE DENSITY.

EYE CONTACT ACUTE EXPOSURE EFFECTS:
DUST MAY IRRITATE EYES.

SKIN CONTACT ACUTE EXPOSURE EFFECTS:
SOME MAY EXPERIENCE SKIN IRRITATION FROM DUST.

INGESTION ACUTE EXPOSURE EFFECTS:
NO KNOWN ADVERSE EFFECTS, BUT INGESTION NOT RECOMMENDED.

SECTION 4. FIRST AID MEASURES

INHALATION:
REMOVE TO FRESH AIR. IF BREATHING HAS STOPPED, GIVE ARTIFICIAL RESPIRATION. GET MEDICAL ATTENTION IMMEDIATELY.

SKIN CONTACT:
WASH AFFECTED AREAS WITH SOAP AND WATER. OBTAIN MEDICAL ASSISTANCE.

EYE CONTACT:
WASH WITH LARGE AMOUNTS OF WATER. OBTAIN FIRST AID AND MEDICAL ASSISTANCE, IF NEEDED.

INGESTION:
CALL POISON CONTROL CENTER, HOSPITAL EMERGENCY ROOM OR PHYSICIAN IMMEDIATELY.

SECTION 5. FIRE FIGHTING MEASURES

FIRE FIGHTING PROCEDURES:
NOT APPLICABLE

HAZARDOUS PRODUCTS/COMBUSTION:
NONE.

HAZARD RATING SOURCE

NFPA
HEALTH: 1
FLAMMABILITY: 0
REACTIVITY: 0
OTHER:

SECTION 6. ACCIDENTAL RELEASE MEASURES

(:
NORMAL CLEAN UP PROCEDURES.

SECTION 7. HANDLING AND STORAGE

HANDLING:
HANDLE WITH ADEQUATE VENTILATION FOR NUISANCE DUST.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

VENTILATION PROTECTION:
RECOMMEND USING LOCAL EXHAUST VENTILATION WHEN GENERAL VENTILATION IS NOT KEEPING THE AIRBORNE CONCENTRATION BELOW THE TLV.

RESPIRATORY PROTECTION:
RESPIRATORS ARE REQUIRED WHEN AIRBORNE CONTAMINANT LEVELS EXCEED THE TLV(S).

EYE PROTECTION:
ALWAYS WEAR SAFETY GLASSES OR SOME TYPE OF EYE PROTECTION WHILE SANDING.

OTHER PROTECTION:
USE OF THIS PRODUCT MAY CREATE ELEVATED SOUND LEVELS. HEARING PROTECTION SHOULD BE WORN WHERE REQUIRED (SEE OSHA 29 CFR 1910.134 AND OTHER APPLICABLE REGULATIONS).

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE & ODOR:
SOLID ARTICLE. ODORLESS.

SECTION 10. STABILITY AND REACTIVITY

INCOMPATIBILITIES:
AVOID ACIDS OF ALL TYPES WITH A PH < 4.0.

DECOMPOSITION:
IN USE, DUST AND DECOMPOSING ODORS MAY BE GENERATED. IN MOST CASES, THE MATERIAL REMOVED FROM THE WORKPLACE WILL BE SIGNIFICANTLY GREATER THAN THE SANDPAPER COMPONENTS. COOLANTS MAY PRODUCE OTHER DECOMPOSITION PRODUCTS.

FOR PRODUCTS CONTAINING PHENOL AND FORMALDEHYDE RESIN, THERMAL DECOMPOSITION MAY PRODUCE TRACE AMOUNTS OF PHENOL AND FORMALDEHYDE. FOR PRODUCTS CONTAINING INORGANIC FLUORIDES, THERMAL COMPOSITION MAY PRODUCE TRACE AMOUNTS OF FLUORIDES.

SECTION 11. TOXICOLOGICAL INFORMATION

C. NOGENICITY:
NOT APPLICABLE

LD50/LC 0:
VALUES ARE NOT APPROPRIATE OR AVAILABLE.

SECTION 12. ECOLOGICAL INFORMATION

CHEMICAL FATE:
NOT APPLICABLE

SECTION 13. DISPOSAL CONSIDERATIONS

WASTE DISPOSAL:
USE STANDARD LANDFILL METHODS CONSISTENT WITH APPLICABLE FEDERAL, STATE, PROVINCIAL AND LOCAL LAWS.

SECTION 14. TRANSPORT INFORMATION

HAZARD CLASS:
THIS PRODUCT IS NOT HAZARDOUS AS DEFINED BY THE DEPARTMENT OF TRANSPORTATION. (USA)

THIS PRODUCT IS "NOT REGULATED" UNDER THE TRANSPORTATION OF DANGEROUS GOODS ACT. (CAN)

SECTION 15. REGULATORY INFORMATION

SUBSTANCE DESCRIPTION	EXPOSURE LIMITS/REGULATORY INFORMATION UNITS	OSHA	ACGIH	MOL
ALUMINUM OXIDE, NON-FIBROUS	MG/M3	15.0000	10.0000	10.0000
CLOTH OR PAPER BACKING	PPM	0.0000	0.0000	0.0000
CURED PHENOL FORMALDEHYDE RESIN	PPM	0.0000	0.0000	0.0000
ANIMAL GLUE BOND	PPM	0.0000	0.0000	0.0000
CURED UREA FORMALDEHYDE RESIN	PPM	0.0000	0.0000	0.0000

):
E. SURE LIMIT DESCRIPTIONS

CA PROP 65:
NOT APPLICABLE

TSCA:
SECTION 3(B) - INVENTORY STATUS

ALL COMPONENTS OF THIS PRODUCT ARE REGISTERED UNDER THE REGULATIONS OF TH TOXIC SUBSTANCE CONTROL ACT.

DOMESTIC SUBSTANCE LIST:
ALL COMPONENTS OF THIS PRODUCT ARE FOUND ON THE DOMESTIC SUBSTANCE LIST.

SECTION 16. OTHER INFORMATION

KEY TO ABBREVIATIONS:
EQ=EQUAL LT=LESS THAN GT=GREATER THAN
AP=APPROXIMATELY TR=TRACE ND=NO DATA AVAILABLE

DISCLAIMER:
THE INFORMATION AND RECOMMENDATIONS SET FORTH HEREIN ARE TAKEN FROM SOURCES BELIEVED TO BE ACCURATE AS OF THE DATE HEREOF; HOWEVER, THE COMPANY MAKES WARRANTY WITH RESPECT TO THE ACCURACY OF THE INFORMATION OR THE SUITABILITY OF THE RECOMMENDATIONS, AND ASSUMES NO LIABILITY TO ANY USER THEREOF.

ITEM: 5A954 - DISC ABRASIVE 36 GRIT

PICK_REQ: 1131118962 **MATERIAL SAFETY DATA SHEET (MSDS)** **MSDS: A6418**

This MSDS should be attached or kept with the respective product with which it is associated.

SAFETY DATA SHEET - A6418

Associated Grainger Item: 5A954 - DISC ABRASIVE 36 GRIT

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5GD44, 5GD21

NORTON

MATERIAL SAFETY DATA SHEET

DATE PRINTED: JUN 16, 2004

MSDS NO.: ALCOAT001 OUTBOUND

ALUMINUM OXIDE COATED ABRASIVE

SECTION 1. CHEMICAL PRODUCT AND COMPANY INFORMATION

PRODUCT NAME: ALUMINUM OXIDE COATED ABRASIVE

TRADE NAME:
ADALOX OR ABRASIVE CAP CODES:
H1XX, A1XX, A2XX, E2XX, F2XX, G2XX, H2XX, K2XX, Q1XX, Q2XX, R2XX, S2XX, T2XX, U2XX, W2

MANUFACTURER(4):
SAINT-GOBAIN ABRASIVES, INC.
ONE NEW BOND STREET
WORCESTER, MA 01615-0008
(508) 795-5000

REVISION DATE: 6/11/2004

MSDS PRINT FORMAT: NUSA

SECTION 2. COMPOSITION/INFORMATION ON INGREDIENTS

SUBSTANCE DESCRIPTION	PERCENT	CAS#
ALUMINUM OXIDE, NON-FIBROUS	15.000-25.000	1344-28-1
CLOTH OR PAPER BACKING	45.000-55.000	N/A
BINDER SYSTEM **	10.000-30.000	N/A

** SUBSTANCE IS A COMPOUND AND/OR MIXTURE

OTHER: NOT APPLICABLE

SECTION 3. HAZARDS IDENTIFICATION

INHALATION ACUTE EXPOSURE EFFECTS:
DUST MAY BE SLIGHTLY IRRITATING TO EYES AND RESPIRATORY TRACT AT HIGH CONCENTRATIONS.

INHALATION CHRONIC EXPOSURE EFFECTS:
CHRONIC: MAY AFFECT BREATHING CAPACITY.
FOR PRODUCTS CONTAINING PHENOL/FORMALDEHYDE RESIN, DUST GENERATED FROM INTENDED USE MAY CONTAIN TRACE AMOUNTS OF PHENOL AND FORMALDEHYDE WHICH UNDER EXCESSIVE EXPOSURE MAY CAUSE SKIN SENSITIZATION AND AIRWAY OBSTRUCTION.
FOR PRODUCTS CONTAINING INORGANIC FLUORIDES, EXCESSIVE EXPOSURE TO INORGANIC FLUORIDES HAVE BEEN SHOWN TO INCREASE BONE DENSITY.

EYE CONTACT ACUTE EXPOSURE EFFECTS: DUST MAY IRRITATE EYES.

SKIN CONTACT ACUTE EXPOSURE EFFECTS:
SOME MAY EXPERIENCE SKIN IRRITATION FROM DUST.

INGESTION ACUTE EXPOSURE EFFECTS:
NO KNOWN ADVERSE EFFECTS, BUT INGESTION NOT RECOMMENDED.

SECTION 4. FIRST AID MEASURES

INHALATION:
REMOVE TO FRESH AIR. IF BREATHING HAS STOPPED, GIVE ARTIFICIAL RESPIRATION. GET MEDICAL ATTENTION IMMEDIATELY.

SKIN CONTACT:
WASH AFFECTED AREAS WITH SOAP AND WATER. OBTAIN MEDICAL ASSISTANCE.

EYE CONTACT:
WASH WITH LARGE AMOUNTS OF WATER. OBTAIN FIRST AID AND MEDICAL ASSISTANCE, IF NEEDED.

INGESTION:
CALL POISON CONTROL CENTER, HOSPITAL EMERGENCY ROOM OR PHYSICIAN IMMEDIATELY.

SECTION 5. FIRE FIGHTING MEASURES

FIRE FIGHTING PROCEDURES: NOT APPLICABLE

HAZARDOUS PRODUCTS/COMBUSTION: NONE.

HAZARD RATING SOURCE:
NFPA:
HEALTH 1
FLAMMABILITY 0
REACTIVITY 0
OTHER

SECTION 6. ACCIDENTAL RELEASE MEASURES

CLEAN-UP: FOLLOW NORMAL CLEAN UP PROCEDURES.

SECTION 7. HANDLING AND STORAGE

HANDLING: HANDLE WITH ADEQUATE VENTILATION FOR NUISANCE DUST.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

VENTILATION PROTECTION:
R[illegible]MEND USING LOCAL EXHAUST VENTILATION WHEN GENERAL VENTILATION IS NOT [illegible]G THE AIRBORNE CONCENTRATION BELOW THE TLV.

RE[illegible]RATORY PROTECTION:
RESPIRATORS ARE REQUIRED WHEN AIRBORNE CONTAMINANT LEVELS EXCEED THE TLV(S).

EYE PROTECTION:
ALWAYS WEAR SAFETY GLASSES OR SOME TYPE OF EYE PROTECTION WHILE SANDING.

OTHER PROTECTION:
USE OF THIS PRODUCT MAY CREATE ELEVATED SOUND LEVELS. HEARING PROTECTION SHOULD BE WORN WHERE REQUIRED (SEE OSHA 29 CFR 1910.134 AND OTHER APPLICABLE REGULATIONS).

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE & ODOR: SOLID ARTICLE. ODORLESS.

SECTION 10. STABILITY AND REACTIVITY

INCOMPATIBILITIES: AVOID ACIDS OF ALL TYPES WITH A pH < 4.0.

DECOMPOSITION:
IN USE, DUST AND DECOMPOSING ODORS MAY BE GENERATED. IN MOST CASES, THE MATERIAL REMOVED FROM THE WORKPLACE WILL BE SIGNIFICANTLY GREATER THAN THE SANDPAPER COMPONENTS. COOLANTS MAY PRODUCE OTHER DECOMPOSITION PRODUCTS. FOR PRODUCTS CONTAINING PHENOL AND FORMALDEHYDE RESIN, THERMAL DECOMPOSITION MAY PRODUCE TRACE AMOUNTS OF PHENOL AND FORMALDEHYDE. FOR PRODUCTS CONTAINING INORGANIC FLUORIDES, THERMAL COMPOSITION MAY PRODUCE TRACE AMOUNTS OF FLUORIDES.

SECTION 11. TOXICOLOGICAL INFORMATION

CARCINOGENICITY: NOT APPLICABLE

LD50/LC50: VALUES ARE NOT APPROPRIATE OR AVAILABLE.

SECTION 12. ECOLOGICAL INFORMATION

CHEMICAL FATE: NOT APPLICABLE

SECTION 13. DISPOSAL CONSIDERATIONS

WASTE DISPOSAL:
USE STANDARD LANDFILL METHODS CONSISTENT WITH APPLICABLE FEDERAL, STATE, P[illegible]NCIAL AND LOCAL LAWS.

SECTION 14. TRANSPORT INFORMATION

HAZARD CLASS:
THIS PRODUCT IS NOT HAZARDOUS AS DEFINED BY THE DEPARTMENT OF TRANSPORTATION. (USA)
THIS PRODUCT IS "NOT REGULATED" UNDER THE TRANSPORTATION OF DANGEROUS GOODS ACT. (CAN)

SECTION 15. REGULATORY INFORMATION

EXPOSURE LIMITS/REGULATORY INFORMATION:

SUBSTANCE DESCRIPTION	UNITS	OSHA	ACGIH	MOL
ALUMINUM OXIDE, NON-FIBROUS	MG/M3	15.0000	10.0000	10.0000
CLOTH OR PAPER BACKING	PPM	0.0000	0.0000	0.0000
BINDER SYSTEM	PPM	0.0000	0.0000	0.0000

LEGEND:

EXPOSURE LIMIT DESCRIPTIONS:

CA PROP 65: NOT APPLICABLE

TSCA:
SECTION 8(B) - INVENTORY STATUS:
ALL COMPONENTS OF THIS PRODUCT ARE REGISTERED UNDER THE REGULATIONS OF THE TOXIC SUBSTANCE CONTROL ACT.

DOMESTIC SUBSTANCE LIST:
ALL COMPONENTS OF THIS PRODUCT ARE FOUND ON THE DOMESTIC SUBSTANCE LIST.

SECTION 16. OTHER INFORMATION

DISCLAIMER:
THE INFORMATION AND RECOMMENDATIONS SET FORTH HEREIN ARE TAKEN FROM SOURCES BELIEVED TO BE ACCURATE AS OF THE DATE HEREOF; HOWEVER, THE COMPANY MAKES NO WARRANTY WITH RESPECT TO THE ACCURACY OF THE INFORMATION OR THE SUITABILITY OF THE RECOMMENDATIONS, AND ASSUMES NO LIABILITY TO ANY USER THEREOF.

KEY TO ABBREVIATIONS:
EQ=EQUAL
LT=LESS THAN
G[illegible]EATER THAN
[illegible]ROXIMATELY
[illegible]
N[illegible]TA AVAILABLE

Rogers Terminal & Shipping Co.
Internal Memo

03 March 2005

To: File

From: C. Buswell

Re: HazCom Book, Gearlocker

This HazCom book has been review and discussed with Marlon Horton. He is familiar with its contents.

C. Buswell, Safety Superintendent

M. Horton, Gearlockerman