VANGUARD
ENVIRONMENTAL, INC.
ENVIRONMENTAL, HEALTH & SAFETY COMPLIANCE SPECIALISTS

Corporate Office
4500 South Garnett, Suite 250 · Tulsa, OK 74146 · Ph. (918) 641-5588 · FAX (918) 641-0617 · www.vanguardenvl.com
Atlanta • Chicago • Cincinnati/Dayton • Dallas/Ft. Worth • Denver • Houston • Kansas City • Los Angeles
Minneapolis/St. Paul • Oklahoma City • Phoenix • St. Louis • Tulsa • Wichita

THE EHS COMPLIANCE MANAGEMENT PROGRAM

- REGULATORY COMPLIANCE AGENDA for EPA, OSHA & DOT Laws
- DEFENSIBLE DOCUMENTATION/ INSPECTION SHOWPIECE
- CHEMICAL HAZARD ANALYSIS

&

ENVIRONMENTAL COMPLIANCE REPORTING
(EPA SARA TITLE III, SEC. 301-312 / EPCRA)
REPORTING YEAR 2000

COPYRIGHT 2000, VANGUARD ENVIRONMENTAL, INC.
This document was processed using Year 2000 Compliant Technology

FOR

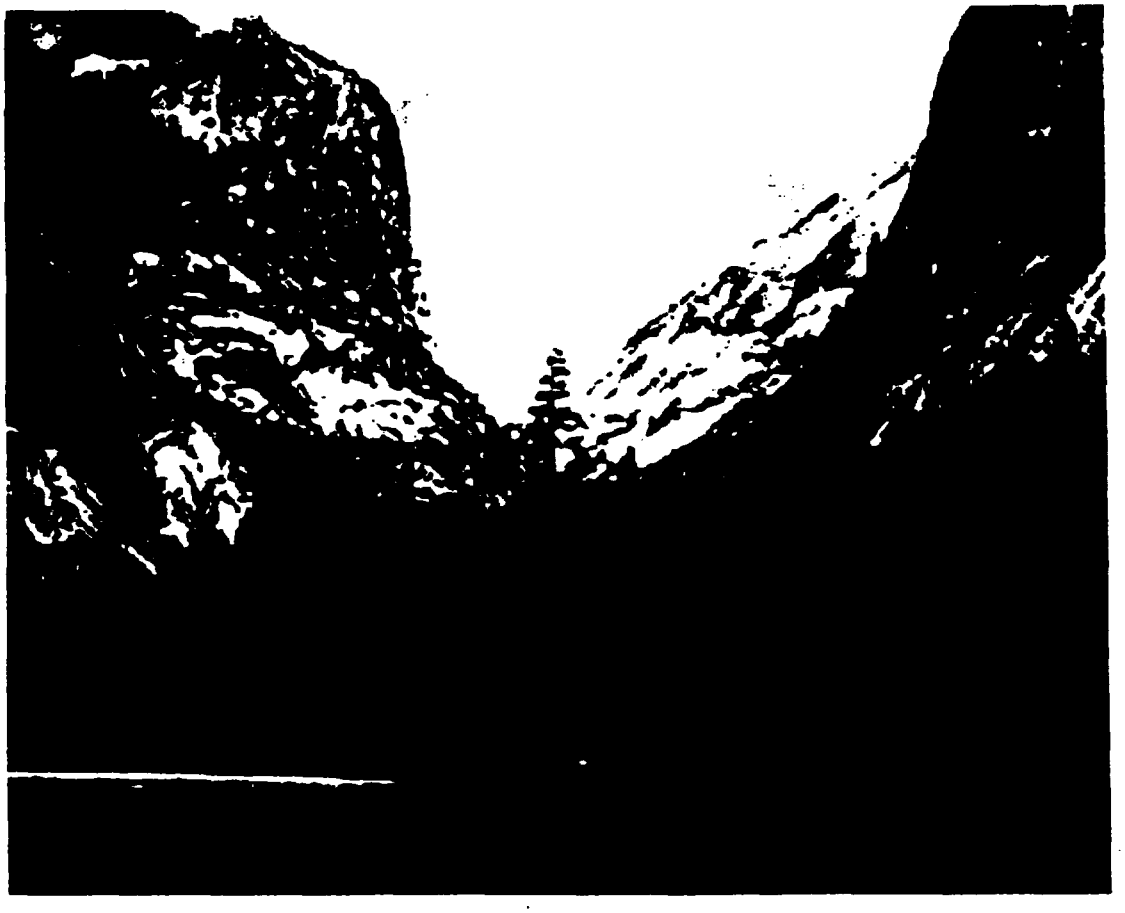
ARROW GEAR
DOWNERS GROVE, ILLINOIS

"Total Quality Environmental Management"
Turn-Key Compliance .....Nationwide

VANGUARD
ENVIRONMENTAL, INC.
ENVIRONMENTAL, HEALTH & SAFETY COMPLIANCE SPECIALISTS

Corporate Office
4500 South Garnett, Suite 250 · Tulsa, OK 74146 · Ph. (918) 641-5588 · FAX (918) 641-0617 · www.vanguardenvl.com
Atlanta · Chicago · Cincinnati Dayton · Dallas Ft. Worth · Houston · Kansas City · Los Angeles · Minneapolis St. Paul
Oklahoma City · Phoenix · St. Louis · Tulsa · Wichita

THE EHS COMPLIANCE MANAGEMENT PROGRAM



FOR

ARROW GEAR
DOWNERS GROVE, ILLINOIS

VANGUARD
ENVIRONMENTAL, INC.
ENVIRONMENTAL, HEALTH & SAFETY COMPLIANCE SPECIALISTS

Corporate Office
4500 South Garnett, Suite 250 · Tulsa, OK 74146 · Ph. (918) 641-5588 · FAX (918) 641-0617 · www.vanguardenvl.com
Atlanta · Chicago · Cincinnati/Dayton · Dallas/Ft. Worth · Houston · Kansas City · Los Angeles · Minneapolis/St. Paul
Oklahoma City · Phoenix · St. Louis · Tulsa · Wichita

January 22, 2001

Arrow Gear
Mr. Dave Reis
2301 Curtiss St.
Downers Grove, IL 60515

Dear Mr. Reis:

We are pleased to present your 2000 Environmental Compliance Report (ECR). This book serves as a reference document and provides a blueprint for your environmental, health and safety program. The information contained in your ECR is also the first step in filing EPA Environmental Compliance Reporting under the Superfund Amendments and Reauthorization Act (SARA) of 1986 and the Emergency Planning and Community Right-to-Know Act (EPCRA) of 1986. We can update this information annually to keep your records current.

We take pride in the process used to produce this ECR. The Chemical Hazard Analysis (CHA) is based on MSDS from your facility. Please review your CHA for accuracy. If your review reveals any inconsistencies that should be corrected, please let us know. Your Regulatory Specialist can also assist you with questions regarding information in this book or any other compliance concerns.

It has been a complete pleasure serving you. If we can ever be of service to you and your company, please do not hesitate to call upon Vanguard Environmental. We are always here to provide you with "Total Quality Environmental Management"!

Sincerely,

David Sutton

David Sutton
Director of Environmental Science
Vanguard Environmental, Inc.

VANGUARD
ENVIRONMENTAL, INC.
ENVIRONMENTAL & SAFETY COMPLIANCE SPECIALISTS

Table of Contents

Preface, Scope, & Service Warranty i

PART 1

Environmental Compliance.... The Journey 1-1
- Message to Your Chief Executive Officer 1-2
- Environmental Compliance Status Quiz 1-3
- The Benefits of Being a Good Corporate Citizen 1-5

Additional Services Available Through Vanguard 1-6

PART 2 - YOUR SITE-SPECIFIC CHEMICAL HAZARD ANALYSIS AND A HISTORY OF SARA TITLE III LEGISLATION

The Cornerstone for Your "Compliance Agenda" 2-1
- Chemical Hazard Analysis (List of Terms for Column Headings) 2-3
- DOT Hazardous Materials: Classes and Divisions 2-5

Environmental Compliance Reporting-- 2-6

SARA Title III Emergency Planning and Community Right-to-Know Act of 1986
- The Origin of Right to Know 2-7
- Federal Action 2-8
- Trade Secrets, Information Disclosure, and Risk Communication 2-9

PART 3 - RISK MANAGEMENT AGAINST ENFORCEMENT PENALTIES

Downside Risk and Upside Potential 3-1

SARA Title III...Enforcement 3-2
- Civil and Criminal Penalties 3-2

Setting Examples 3-4
Ignorance is No Defense 3-5
Environmental Crimes 3-6
Who Pays? 3-7
EPA Press Release (1996) 3-8
"FINDS" 3-9

PART 4 - OSHA COMPLIANCE, INDUSTRIAL HYGIENE, AND TRAINING SERVICES

Introduction to OSHA 4-1
Hazard Communication 4-2
Hazard Determination Mandate 4-2
Written hazard Communication Program 4-3
Container Labeling 4-3
Employee Information and Training 4-3
Employee Right-to-Know Information Station 4-3
OSHA Enforcement Penalty Policy 4-4
Top 25 General Industry Violations 4-5
Lockout/Tagout (the Control of Hazardous Energy): 4-6
Machine-Specific Service and Training
HAZWOPER 4-7
Contingency Plan Relating to 40 CFR 264 (HazWaste) 4-13
Industrial Hygiene 4-14
OSHA Process Safety Management (PSM) 29 CFR 1910.119 4-16
Normal Process Operations and Project Prerequisites 4-17
Process Hazard Analysis 4-17
Pre-startup Safety Review 4-18
Management of Change 4-18
Operating Procedures 4-18
Hot Work Permits 4-19
Technology of Process 4-19
Maintenance of Plant and Equipment 4-19
Process Equipment 4-19
Powered Industrial Trucks (Forklift Training) 4-19
Respirator Training (OSHA 29 CFR 1910.134) 4-20
Hearing Conservation for Occupational Noise Exposure 4-21
Confined Space Permitting and Rescue Team 4-24
Indoor Air Quality 4-25
Bloodborne Pathogens (BBP)Program and Training 4-26
Compliance Components, Deadlines, and Enforcement 4-27
Penalties for BBP
MSDS Document Origination Service 4-28
DOT Hazmat Employee Training 4-28
Phase I, II, III Environmental Assessment 4-30
Facility Compliance Assessment 4-32
RCRA Haz. Waste Training 4-34

Employee Safety and Health Modules 4-38

PART 5 - CARCINOGENS, MUTAGENS, TERATOGENS, AND CALIFORNIA' S PROPOSITION 65

Chemicals Adverse to Human Life 5-1
Proposition 65 5-2

PART 6 - SARA 302 (EHS)

Extremely Hazardous Substances 6-1
"Aggregate Total" Ruling 6-1

PART 7 - SECTION 304: COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION, AND LIABILITY ACT (AND AMENDMENTS)

Chemical Spills and Releases 7-1
Emergency Procedure: National Response Center 7-2
State Agencies and Phone Numbers for Reporting Spills/Releases 7-3
Releases Not Reportable Under Section 304 7-6
Other Required Notices for an Emergency Release 7-7
Exceptions to the Requirements 7-8
The Spill Prevention Control and Countermeasure 7-8
Plan (SPCC-40 CFR 112)

PART 8 - SARA 311-312 REPORT--HAZARD COMMUNICATION: WORKPLACE CHEMICAL LIST

Hundreds of Thousands of Chemicals to Report 8-1
Workplace Chemical List 8-2

PART 9 - SARA 313 CANDIDATES

Toxic Chemicals and Form R Reporting 9-1
Three Qualifying Criteria for Form R Reporting 9-2

PART 10 - STORM WATER RUNOFF/NPDES PERMITTING

The "Third Leg" of EPA's Clean Water Act 10-1
Affected Industries 10-3
Water Quality Violators or Significant Polluters 10-4
SARA Title III, Section 313 Facilities and Water Priority Chemicals 10-4
Monitoring and Reporting Requirements 10-5
Industrial Pollutants 10-7

General Permit Monitoring Requirements 10-8
Further Comment on Water Priority Chemicals 10-11
Multi-Sector General Permits 10-12

PART 11 - TOXIC SUBSTANCE CONTROL ACT (1976), THE INVENTORY UPDATE RULE (IUR - 1986), & "FORM U" REPORTING (40 CFR PART 710)

The "Mother" of Legislating Toxic Chemicals 11-1
New Chemical Review and Premanufacture 11-2
Notification (PMN) Mandate
The Inventory Update Rule (IUR) - Form U 11-3
Summation of Two Major Criteria Triggering 11-4
"Form U" Reporting
Small Manufacturers 11-4
Exemptions 11-4

PART 12 - RCRA HAZARDOUS WASTE MANAGEMENT

A Turning Point in Environmental Law 12-1
Who Generates Hazardous Waste? 12-2
What is a Hazardous Waste? 12-2
Listed Hazardous Wastes (40 CFR 261, Subpart D) 12-3
F-List 12-4
K List 12-4
P and U Lists 12-4
Characteristic Hazardous Wastes (40 CFR 261, Subpart C) 12-4
Ignitability (EPA Waste Identification Number D001) 12-5
Corrosivity (EPA Waste Identification Number D002) 12-5
Reactivity (EPA Waste Identification Number D002) 12-5
Toxicity 12-5
Other Wastes 12-6
Lead-Acid Batteries 12-6
Used Oil 12-6
Polychlorinated Biphenyls (PCB's) (40 CFR 761) 12-6
Empty Containers (40 CFR 261.7) 12-6
What Quantities of Hazardous Waste are Regulated? 12-7
Types of Generators by Quantity 12-7
Large Quantity Generator (LQG's) 12-7
Small Quantity Generator (SQG's) 12-7
Conditionally Exempt Small Quantity Generators 12-8
Generator Elements Unique to the State of Kansas 12-8
EPA Generator 12-8
Kansas Generator 12-9
Small Quantity Generator (Kansas) 12-9
Land Disposal Restrictions 12-9

Generator Requirements 12-10
Determination 12-10
Notification 12-10
What Hazardous Waste Management Options are Available to a Generator? 12-11
Waste Minimization and Environmental Economics 12-11
Material or Energy Recovery 12-12
Waste Treatment 12-13
Ultimate Disposal 12-13

PART 13 - THE CLEAN AIR ACT AMENDMENTS OF 1990 AND RELATED ISSUES

The Most Sophisticated and Far Reaching of Environmental Laws 13-1
EPA Enforcement Penalty Policy (Risk Management) 13-2
Air Permitting: Two Basic Categories 13-3
Ozone Depleting Chemicals (ODC's - Title VI of CAAA) 13-3
Demonstration of Compliance with Applicable Requirements and Compliance Assurance Monitoring (CAM) 13-4
Development of Maximum Achievable Control Technology (MACT) - CAAA 112(g) 13-4
Changes in Ambient Air Quality Standards (NAAQS) 13-5
OSHA Process Safety Management (PSM - OSHA, 29 CFR 1910.119): Requirements and Rationale 13-5
Risk Management Program (RMP - 112(r) of the Clean Air Act Amendments of 1990 - EPA, 40 CFR Part 68): Chemical Accidental Release Prevention: Requirements and Rationale 13-7
Definitions 13-8
RMP's Specific Elements 13-9
Applications and Program Levels 13-9
Hard and Decorative Electroplating and Anodizing NESHAP Operations: Final Air Toxics Rule for Chromium Emissions 13-11
Initial Notification 13-11
Performance Test Requirements 13-11

PART 14 - ISO 14001 CERTIFICATION ENVIRONMENTAL MANAGEMENT SYSTEM (EMS)

International Business/Environmental Protection 14-1
The Challenges of Achieving ISO 14000 Certification 14-2
The Various Standards of the ISO 14000 Series 14-3
Survey of the ISO 14000 Elements in the Series 4
ISO 14001 14-4

ISO 14004 14-4
ISO 14010 - 14012 14-5
ISO 14020 - 14024 14-5
ISO 14031 14-6
ISO 14040 14-6
The ISO 14000 Certification Process 14-6

PART 15 - GLOSSARY: TERMS, DEFINITIONS, ACRONYMS, MSDS TERMINOLOGY

VANGUARD
ENVIRONMENTAL, INC.
ENVIRONMENTAL & SAFETY COMPLIANCE SPECIALISTS

Part 1

Environmental Compliance.... The Journey

Congratulations!

Your journey toward environmental, health, and safety compliance has begun. As with any other journey, it is important to know where you're going and how you're going to get there. The book that you have in your hands is your map and vehicle. It will help you meet the challenges of environmental, health, and safety compliance for years to come. But don't view it as a finished work. Using the information contained herein, we can continue to help you keep your facility in compliance with pertinent regulations, regardless of future legislative amendments and newly enacted laws. You can rest easy, provided that you implement those programs rendering your compliance as satisfied.

You can also feel proud. For, by the actions you have taken, by the concern you have shown, you have proven yourself to be a conscientious partner--not only with your community, but, in the broader sense, with humanity as a whole. Over the past few decades, individuals and corporations have taken a more enlightened view of their own responsibilities for both the preservation of the environment and for the continuance of the ability of this planet to sustain life. By helping us help you, you are at the forefront of that enlightenment.

Vanguard, too, is proud to be a part of this great movement, and to serve you as we have. Helping companies manage their activities within the framework of compliance law, thereby allowing communities and industry to live and work in harmony...*that* is the gratifying mission of Vanguard Environmental, Inc. We deliver "Total Quality Environmental Management, Turn-key...Nationwide!"

A Message to Your Chief Executive Officer

Your Environmental Compliance Responsibility as a Corporate Citizen in America: An Overview from Vanguard

You probably already know that environmental, health, and safety compliance is one of the top four or five issues that CEO's in all walks of industry address each year. Obviously, a CEO must be an excellent strategist in the realm of finance. But it is now necessary for the contemporary leader to consider the importance of compliance with regulatory laws at all jurisdictional levels: local, county, state, and Federal. These laws are an integral part of today's corporate reality. And they aren't going to go away.

Remember, environmental, health, and safety regulations are not new any more. The Environmental Protection Agency is over two decades old, and most of the major laws affecting your company were enacted in the years between 1986 and 1990. Yet, in the course of our operations, we have found that many companies are severely deficient with regard to the attention paid towards regulatory compliance. As a result, they are vulnerable to severe enforcement penalties. Just how heavy are those penalties? See Section 3 for more information.

It should be the goal of every contemporary CEO to become well informed on matters of regulatory compliance law and its implications for his/her company's strategic planning and risk management. In order to facilitate this learning process, we are enclosing a copy of our "Environmental Compliance Status Quiz" in this document. We highly recommend that you or your environmental "facility designee" take this quiz. It will raise many issues that should become topics of discussion among the team that oversees your environmental compliance management: a group which, if it is not already in place in your organization, should be. By now, we have many concrete notions about the environmental compliance issues affecting your company. Through a study of this document's contents, we can map out a course of compliance for the next several years and, with your approval, customize an Environmental Compliance Management Program exclusively for your company.

VANGUARD
ENVIRONMENTAL, INC.
ENVIRONMENTAL & SAFETY COMPLIANCE SPECIALISTS

ENVIRONMENTAL COMPLIANCE STATUS QUIZ

(because nobody looks good in horizontal stripes....)

1. Do we have an environmental compliance management team, comprised of representation from senior management, manufacturing, purchasing, environmental, personnel, and safety, led by a compliance facilitator? _____Yes _____No
2. Have we implemented a pollution prevention plan? _____Yes _____No
3. Are all permits (air, water, storm water, incinerator, etc.) up to date and in compliance with local, state, and Federal regulation? _____Yes _____No
4. In the last year, has a member of our environmental compliance management team toured the facility of the company with which we contract to dispose of hazardous waste? _____Yes _____No
5. Do we have a recycling/waste minimization program? _____Yes _____No
6. In the event of an employee complaint or lawsuit, are we prepared for our permits, reports, documentation, and reports to be subpoenaed? _____Yes _____No
7. Are we prepared for a law suit from the community-at-large under the Citizen's Suit Provision? _____Yes _____No
8. How many days could our company withstand EPA's penalty policy of $25,000 per violation per day? _____Days

9. Do we know what in our chemical inventory (liquids, solids, & gases) is designated as: A.) an extremely hazardous substance, B.) carcinogenic (cancer causing) , C.) toxic, D.) ozone depleting, E.) due to be banned, and F.) CERCLA? _____Yes _____No

10. Do our people know what to do in the result of a chemical release/spill emergency (applying the "one hour-five day" principle) to avoid a $50,000 EPA fine? _____Yes _____No

11. Do we do OSHA's required employee Right-to-Know (HazCom) Training at least annually? _____Yes _____No

12. Do we have a written HazCom plan, and is it updated at least annually? _____Yes _____No

13. Do we receive Material Safety Data Sheets (MSDS's) for every product we purchase (required by law)? _____Yes _____No

14. Are our MSDS's readily accessible to all employees? _____Yes _____No

15. Do we package and ship products requiring "hazardous" labeling by the Department of Transportation? _____Yes _____No

16. Have we completed the required DOT Hazmat Training? _____Yes _____No

17. Do we have a system in place to meet the challenges of new legislation, such as OSHA's Process Safety Management and the EPA's Risk Management Program? _____Yes _____No

18. Do we monitor and report our toxics annually under the EPA's Toxic Release Inventory? _____Yes _____No

19. Are all the environmental and safety compliance policies provided in written form for immediate inspection? _____Yes _____No

20. Are all containers in the facility properly labeled? _____Yes _____No

21. Have we met the requirements under the new Clean Air Act Amendments for the Title V Operating Permit? _____Yes _____No

22. Do we have a written SPCC? _____Yes _____No

23. Do we have a written contingency plan? _____Yes _____No

24. Have we rounded out our OSHA compliance program with written/training programs in lockout/tagout, respirator training, blood-borne pathogens, forklift, and continued space permitting? _____Yes _____No

The Benefits of Being a Good Corporate Citizen

It is, of course, simple enough to say that you should comply with environmental, safety, and health regulations because you have to (it is, after all, the *law*!). But there are advantages above and beyond the protection against enforcement penalties that you have afforded yourself by being a good corporate citizen.

- Reduced Administrative costs and resource requirements;
- Greater conformity with international trade agreements and environmental standards (e.g., EMS, ISO 14000);
- Smoother and quicker legal, financial, and real estate transactions where environmental performance is an identified concern;
- Prevention of pollution through avoidance and planned approaches to industrial site environmental management;
- Promotion of proactive environmental management;
- Facilitation of integrated decisions affecting land, air, and water;
- Enhancement of corporate image and community relations;
- Improvement of operational efficiency and reduction of production costs;
- Focusing of R&D into areas where there is the greatest potential for economic and environmental benefits; and,
- Provision of opportunities to grow market share or create new market opportunities through the development of "green" products.

> **"The environment is not a fad; it is a public value."**
>
> John Smale,
> Former Chairman of GM,
> Former President, Proctor & Gamble

Additional Services Available Through Vanguard

Having come thus far in your environmental, health, and safety compliance journey, and after having taken the Environmental Compliance Status Quiz, you may see that your company has needs that extend beyond the scope of this project. Fear not: Vanguard is here to serve:

We provide assistance with, and by way of:

EPA

SARA Title III Sec. 301-302
SARA Title III Sec. 313-Form "R"
Stormwater Runoff Permitting
Clean Air Act (Air Permitting)
Spill Control & Countermeasure (SPCC)
RCRA Management Program
Toxic Substance Control Act (TSCA)
Process Waste Water Treatment Permit
Facility Compliance Assessment

DOT

HazMat Transportation Act
HazMat Transport Employee Training
Hazardous Material Registration

OSHA

Hazardous Communication Training (HazCom) (Employee Right-to-Know)
Hazardous Waste Operations (HAZWOPER)
Process Safety Management (PSM)
Lock-Out/Tag-Out Training
Forklift Training
MSDS Orientation/Management
Blood-Borne Pathogen Training
Confined Space Rescue Training
Respirator Training
Accident Records (OSHA 200)
First Aid/CPR Training
Hearing Conservation Testing/Documentation/Training

Commercial Real Estate Transactions - Phases I, II, III

Phase I: Environmental Assessment
Phase II: Testing and Evaluation
Recommendations and Remediation
Phase III: Implementation of Clean Up and Abatement

VANGUARD
ENVIRONMENTAL, INC.
ENVIRONMENTAL & SAFETY COMPLIANCE SPECIALISTS

Part 2

YOUR SITE-SPECIFIC CHEMICAL HAZARD ANALYSIS AND A HISTORY OF SARA TITLE III LEGISLATION

The Cornerstone for Your "Compliance Agenda"

Attached is the cornerstone of your environmental compliance management program: your Chemical Hazard Analysis.

Vanguard's Environmental Science Department, with the assistance of technical support personnel, performed this site-specific analysis on your facility's chemical inventory--solids, liquids, and gasses--with the primary objective of tracking each and every chemical constituent in each and every product against an exhaustive body of U.S. Government chemical lists connected to regulatory guidelines. In addition, this Chemical Hazard Analysis has allowed us to meet all of the challenges of the varied environmental compliance reporting mandates under EPA's SARA Title III, Sec.'s 301-312 --a description of which is also attached--and, as you'll soon learn, much more.

W. Clement Stone once said, "Behind every adversity, there lies a seed for an equal or greater benefit." Such is the case with the SARA Title III law. While Vanguard satisfies your SARA requirements, our Chemical Hazard Analysis screens your facility's chemical inventory against all the laws--EPA, OSHA, DOT--thereby establishing your company's Compliance Agenda. We're not

suggesting that the law should be perceived as an adversity though, for we at Vanguard have learned to appreciate the government's mission with regard to environmental and safety compliance. However, we do believe that compliance with environmental and safety laws poses an enormous challenge for business and industry. Your company's Chemical Hazard Analysis is the first step towards a greater benefit.

Vanguard will continue to update and upgrade your Chemical Hazard Analysis as compliance laws from EPA, OSHA/DOL, and DOT continue to evolve. Likewise, we encourage you to be an active participant in this updating/upgrading by sending us updates--on a daily basis, if need be--on new and revised products used, stored, processed, or manufactured at your facility. This is done by using the MSDS for the new/revised product to fill out the MSDS Update Form, a copy of which can be found at the back of this book. It's a simple procedure, and it shouldn't take more than a minute or two to complete it and to mail or fax the form to Vanguard.

Note in your Chemical Hazard Analysis the columns which break down your chemical inventory into categories pertinent to the various subsections of SARA Title III and other Federal and state regulations. These will help you meet other existing and pending compliance regulations. In several of the following sections of this document book, you will see many of these requirements for meeting your environmental compliance needs receive a more in-depth analysis.

Please feel free to discuss the contents of your Chemical Hazard Analysis with your Regulatory Specialist or the Director of Environmental Science at Vanguard's corporate office at any time.

Chemical Hazard Analysis
(List of Terms for Column Headings)

302 EHS	SARA, Extremely Hazardous Substances; Threshold planning quantity (TPQ)by chemical
304 CERCLA	(CERCLA) Comprehensive Environmental Response, Compensation & Liability Act. Reportable quantity (RQ) by chemical
311/312 HAZCOM	Chemical Inventory List, HAZCOM Workplace Chemical List, and Tier II Reporting
313 FORM R	Form R Toxic Release Inventory. Chemical Candidates
ACGIH	American Conference of Governmental Industrial Hygienists
AREA	Area (by letter) in which the product is stored
PHYSICAL STATE	The natural property of a product (solid, liquid, gas, solid particle, paste, gel)
CAAA	Clean Air Act Amendments [Title I: Volatile Organic Compounds (VOC's); Title III: 189 Air Toxics; Title IV: Acid Rain Provision; Title VI: Class I & II Ozone depleting Chemicals]
CHEM ID	Chemical Identification Number as assigned by Vanguard
CHEMICAL NAME	Chemical present in the product
CONTAINER	Container type in which product is stored
DOT	Department of Transportation; Hazard Classification
DOT RQ	Reportable Quantity for Spill Reporting
FORM "U"	Inventory Update Rule under the Toxic Substances Control Act
FPRACH/GLOES	Flammability, Reactivity, Acute, Chronic @ GLOES (Genes, Lungs, Organs, Eyes, Skin)
MANUFACTURER'S NAME	Product manufacturer or supplier (Note: Sometimes the client uses an MSDS from one manufacturer to report a product that is actually being purchased from another manufacturer.)
PRODUCT NAME	Official name of product as reflected on MSDS
MAXIMUM WEIGHT	Maximum amount of product (in pounds) on any given day as submitted to Vanguard by the client contact

CAS #	Chemical Abstract Service Number (the ID# assigned to each chemical for recognition by everyone)
MSDS NUMBER	Material Safety Data Sheet #
NFPA 704/HMIS	National Fire Protection Association Hazardous Material Identification System
OPA '90	The Oil Prevention Act of 1990
OSHA PEL/TLV	Air Contaminants and their Permissible Exposure Limits/Threshold Limit Values
PROCESS SAFETY MANAGEMENT (PSM)	OSHA mandated chemical Threshold Quantity (TQ) for PSM regulated chemicals in the workplace
PROPOSITION 65	California's Safe Drinking Water & Toxic Enforcement Act of 1986
RCRA HAZ WASTE	Resource Conservation & Recovery Act : Chemicals regulated for Hazardous Waste Disposal
STORMWATER RUNOFF	Storm water runoff Categories under which POLLUTANTS chemicals pollute the environment through storm events, also called the National Pollution Discharge Elimination)
NPDES/SWR	The National Pollution Discharge Elimination System as defined the Federal Clean Water Act/Stormwater Runoff
RISK MANAGEMENT PROGRAM (RMP)	EPA mandated chemical Threshold Planning Quantity (TPQ) for RMP regulated chemicals in the workplace
SPCC PLAN	Spill Prevention Control & Countermeasure Plan
TSCA	Toxic Substances Control Act

DOT Hazardous Materials: Classes and Divisions

Class 1 -- Explosives

Division 1.1	Explosive A
Division 1.2	Explosive A or B
Division 1.3	Explosive B
Division 1.4	Explosive C
Division 1.5	Blasting Agent

Class 2 -- Gasses (compressed, liquefied or dissolved under pressure)

Division 2.1	Flammable Gas
Division 2.2	Non-flammable Gas
Division 2.3	Poison A

Class 3 -- Flammable Liquids

Division 3.1	Flammable Liquid (Flash point below 0 degrees F)
Division 3.2	Flammable Liquid (Flash point 0 - 73 degrees F)
Division 3.3	Flammable Liquid or Combustible Liquid (Flash point 74-141 degrees F)

Class 4 -- Flammable Solids or Substances

Division 4.1	Flammable Solid
Division 4.2	Spontaneously Combustible Substances (solid or liquid)
Division 4.3	Solids Emitting Flammable Gasses When Wet

Class 5 -- Oxidizing Substances

Division 5.1	Oxidizer
Division 5.2	Organic Peroxide

Class 6 -- Poisonous Substances and Infectious Substances

Division 6.1	Poison B
Division 6.2	Etiologic Agent

Class 7 -- Radioactive Substances; Radioactive Material

Class 8 -- Corrosives; Corrosive Material

Class 9 -- Miscellaneous Dangerous Substances; Other Regulated Material

Environmental Compliance Reporting - Sara Title III Emergency Planning and Community Right-to-Know Act of 1986

Though it can do much, *much* more, your Chemical Hazard Analysis was created in order to bring you into compliance with the Environmental Protection Agency's Superfund Amendments & Reauthorization Act, SARA Title III.

It may be helpful for you to know a little about the history of that law, and about it's provisions.

SARA Title III

In October of 1986, President Ronald Reagan signed into law the EPA's Superfund Amendments & Reauthorization Act, SARA Title III. This law, also called the Emergency Planning and Community Right-to-Know Act (EPCRA), has required facilities with a chemically-oriented product inventory to report annually (from 1987 forward) its site-specific chemicals and vital emergency response data to various local, county, state, regional, and Federal EPA-authorized agencies. Reports and Emergency Notification are mandated under Sections 302, 304, 311, 312, 313, and Hazard Communication Documentation for transmittal to local, county, state, regional, and Federal agencies.

Note: This EPA "Community Right-To-Know" Law must not be confused with OSHA's "Employee Right-To-Know" or HAZCOM Law. OSHA is housed under the Department of Labor. The EPA and OSHA, and their respective laws, are totally independent of one another. It is important to know that OSHA does not inspect for EPA compliance, but has the authority to refer findings to the EPA for a follow-up investigation by that agency. This is, in fact, a cooperative agreement between the two agencies, initiated in 1992. Moreover, it is important to understand that compliance with one or more laws does not remotely imply compliance with any other laws. Compliance is only judged by the requirements of each law and evidence of a facility's compliance with each and every law on a stand-alone, independent basis.

SARA Title III directs states, communities, and industry to work together to plan for chemical accidents/emergencies, develop inventories of hazardous substances, track toxic chemical releases, and provide public access to information on hazardous substances. This law is the culmination of several years of scientific research on the right-to-know concept.

The Origin of Right to Know

The right-to-know concept can be traced back to the 1970's when Federal agencies began considering how to give workers access to information about the hazardous materials in their workplace. After the Occupational Safety and Health Act was passed in 1974, OSHA began work on a standard for chemical labeling in the workplace. Then, when the Toxic Substances Control Act (TSCA) passed in 1976, an Environmental Protection Agency task force began to study how labels and MSDS's might be used to communicate the chemical hazards to workers. In 1978, OSHA took responsibility for workplace hazard communication and in 1983 issued its first Hazard Communication Standard.

Simultaneously, pesticide scares involving DDT, Aldrin/Dieldrin, and other substances triggered concern over community access to information on chemical hazards and for protection from those hazards. Community concern again rose dramatically following releases of toxic chemicals in 1984 at Bhopal, India and at Institute, West Virginia in 1985.

Bhopal

Until the night of December 2-3, 1984, Bhopal, a city of more than a million people in central India, the capital of the Madhya Pradesh State, was renowned only for the Taj-ul-Masjid--the largest Mosque on the sub-continent--and the beautiful cloth and jewelry that was manufactured there. On that night, however, a Union Carbide Chemical Plant aside a slum near the city released the highly toxic gas methyl isocyanate. At least 2,000 people were killed in a matter of minutes and at least 1,300 more died shortly thereafter. In 1989, after years of litigation, Union Carbide paid the Indian government $470,000,000 in return for immunity from prosecution. The medical consequences of the Bhopal release continue to this day. It is not known when they will ever end.

Lobbying efforts led to fifteen state worker right-to-know laws by the end of 1983, and two states, New Jersey and Massachusetts, included requirements for information disclosure to the general public in their laws. By 1986, there were forty-one states with right-to-know provisions and twenty-five with community/emergency response teams.

Federal Action

In 1985, in response to the then absence of comprehensive Federal legislation on community right-to-know and emergency preparedness, the EPA developed the Chemical Emergency Preparedness Program (CEEP). The Agency distributed the first part of the voluntary program to the states in November, 1985. The program included guidelines on organizing community emergency preparedness, site-specific emergency planning, criteria for determining whether a substance is hazardous, and profiles of hazardous substances. The EPA also issued an initial list of "extremely hazardous substances."

At the same time, the 1985 congressional session began debating community right-to-know and emergency response legislation and, in July 1986, a Congressional Conference Committee reached a compromise on Federal community right-to-know and emergency planning requirements. On October 17, 1986, SARA Title III was signed into law.

SARA Title III uses two chief methods to protect the public from hazardous chemical releases and accidents. First, it grants the public, health professionals, and public agencies access to certain chemical information. Second, it imposes new legal responsibilities on public agencies and on industry.

SARA Title III has four major reporting sections, each providing different requirements for facilities, communities, states, and/or the EPA. Each section also covers a different group of chemicals. The reporting requirements for each section are summarized under their respective sections within this document. Here are the four major elements comprising SARA Title III:

Emergency Planning (Sections 301-303)

Under Sections 301-303,

1. Community-wide emergency response and preparedness through local and state coordination and planning had to be addressed;

2. State Emergency Response Committees (SERC's) and Local Emergency Planning Committees (LEPC's) had to be established; and

3. Those LEPC's had to develop Emergency Response Plans by October 1988 which allowed them to prepare for and respond to an unplanned release of a chemical or chemicals in a timely and orderly manner.

Sections 301-303 also requires facilities that produce, use, or store EHS's in

quantities above TPQ's to notify SERC's and LEPC's, to provide any additional information that the LEPC requires for the development of the local emergency response plan, and to notify the LEPC of "any change occurring at the facility which may be relevant to emergency planning." These sections also cover EHS's and address mixtures based on their individual chemical components.

- **Emergency Notification (Section 304)**

Section 304 addresses facility notification about accidental chemical releases or spills. Owners/operators of facilities must notify the SERC immediately after an accidental release of an EHS that is over the reportable quantity (RQ) assigned to that substance. In addition, written follow-up reports are required for those releases.

- **Community Right-to-Know (Sections 311-312)**

SARA Title III requires facilities that use, store, or produce certain chemicals to file reports with state and local agencies if the chemicals are present above certain thresholds. Sections 311 and 312 address the community's need to know the amounts and hazards of the mixtures and chemical present at facilities. Due to clauses regarding EPA's "Aggregate Total Ruling," the analysis for comparison to these thresholds must begin "above household quantity, or in concentrate form."

- **Toxic Release Inventory (TRI) - Form R Reporting (Section 313)**

Section 313 requires covered facilities to submit annual routine release reports and source reduction documentation to address the need for better understanding of the amount of chemicals released to the air, water, land, or transferred off-site. Specifically, Section 313 covers a list of chemicals and chemical categories that are acutely toxic (i.e., they cause serious injuries even if the exposure is short-term), may or do cause cancer, or have significant adverse effects on the environment.

Trade Secrets, Information Disclosure, and Risk Communication

SARA Title III offers limited protection for facilities who want to conceal confidential business information on their reporting forms. Only the specific chemical identity of a substance may be claimed as a trade secret on the reports, and the reporter must provide up-front substantiation of the trade secret claim to EPA. No trade secrets may be claimed when reporting emergency releases.

Health professionals are allowed to request additional information directly from the facility. They are not barred from access to trade secrets. SARA Title III also allows local committees to request additional information for emergency planning, and the public may obtain certain information not available in the reports that the facility submits.

CHEMICAL HAZARD ANALYSIS

Reporting Year: 2000

ARROW GEAR COMPANY

CHEM ID	MSDS NO.	MANUFACTURER NAME	PRODUCT NAME	MAXIMUM WEIGHT	CAS NUMBER	CHEMICAL NAME	%	CHEMICAL WEIGHT	CONTAINER	AREA
1	1	ROYAL LUBRICANTS COMPANY, INC.	AEROSHELL FLUID 5LA	37.16	64742-53-6	DISTILLATES, PETROLEUM, HYDROTREATED LIGHT NAPHTHENIC	60	22.30	CAN	O
2	1	ROYAL LUBRICANTS COMPANY, INC.	AEROSHELL FLUID 5LA	37.16	64742-54-7	HYDROTREATED HEAVY PARAFFINIC DISTILLATE	60	22.30	CAN	O
3	1	ROYAL LUBRICANTS COMPANY, INC.	AEROSHELL FLUID 5LA	37.16	68511-50-2	SULFURIZED ISOBUTYLENE	5	1.86	CAN	O
4	1	ROYAL LUBRICANTS COMPANY, INC.	AEROSHELL FLUID 5LA	37.16		ADDITIVES MIXTURE	2	0.74	CAN	O
5	2	CALGON CORPORATION	SW-3	50.00	1310-73-2	SODIUM HYDROXIDE	80	40.00	BOX	C
6	3	T.J. MARTIN COMPANY	ROTARY CUTTING TOOLS	10.00	12070-12-1	TUNGSTEN CARBIDE	97	9.70	RAW	D
7	3	T.J. MARTIN COMPANY	ROTARY CUTTING TOOLS	10.00	7440-48-4	COBALT	25	2.50	RAW	D
8	3	T.J. MARTIN COMPANY	ROTARY CUTTING TOOLS	10.00	12070-06-3	TANTALUM CARBIDE	12	1.20	RAW	D
9	4	E.I. DUPONT DE NEMOURS & COMPANY,	DELRIN(R) ACETAL RESIN	100.00		RESIN MIXTURE	100	100.00	RAW	A, D, I & E
10	5	POCO GRAPHITE, INC.	POCO GRAPHITE EDM-3	1.00	7782-42-5	GRAPHITE	100	1.00	GLASS BOTTLE	E
11	5	POCO GRAPHITE, INC.	POCO GRAPHITE EDM-3	1.00	14808-60-7	CRYSTALLINE SILICA	1	0.01	GLASS BOTTLE	F
12	7	T.J. MARTIN COMPANY	NICKEL PLATED ABRASIVE PRODUCTS	10.00	7440-02-0	NICKEL	100	10.00	RAW	D
13	9	SAF-T-EZE DIV., STL COMPOUND	SAF-T-EZE NICKEL PREMIUM ANTI-SEIZE	5.00	7429-90-5	ALUMINUM	100	5.00	CAN	F & G

COPYRIGHT 2000, VANGUARD ENVIRONMENTAL, INC.

Vanguard's composite CHEMICAL HAZARD ANALYSIS satisfies OSHA's "HAZARD DETERMINATION MANDATE," under 29 CFR 1910.1200, in order that subsequent OSHA compliance work performed be SITE-SPECIFIC.

		SAFETY, HEALTH AND INDUSTRIAL HYGIENE				SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT, TITLE III/EPCRA								CLEAN AIR ACT AMENDMENTS (MAJOR AND MINOR SOURCES)			
CHEM ID	PHYSICAL STATE	NFPA 704/ FPRACH/ GLOES	OSHA PEL 29 CFR 1910.1000 (AIR CONTAMINANTS) (547)	ACGIH* TLV	CARCINOGEN (392) MUTAGEN, TERATOGEN / CALIF. SDWA PROP 65 (542)	302 EHS (375)	304 CERCLA (775) / SPCC PLAN	311/312 HAZCOM (UNLTD)	313 "FORM R" (586) / EXEC. ORDER "12856"	STORM WATER RUNOFF/ WATER PRIORITY (273) / OPA '90	TSCA (78000) "FORM U" (510)	RCRA HAZ WASTE (586)	RISK MGMT PROGRAM 112(r) (160)	CLEAN AIR ACT I, III, IV, VI (187 HAPS) / MACT 112(g)	PROCESS SAFETY MGMT (130)	DOT / DOT RQ (1100)
1	L	1-1-0 A@LES				TPQ	RQ	10000						III		
2	L	1-1-0 A@LES				TPQ	RQ	10000						III		
3	L	1-1-0 A@LES				TPQ	RQ	10000								
4	L	1-1-0 A@LES				TPQ	RQ	10000								
5	SP	R/A@LES	2 mg/m^3	2 mg/m^3		TPQ	RQ 1000	10000								8 1000
6	S	A/CH@LES				TPQ	RQ	10000								
7	S	A/CH@LES	0.1 mg/m^3	0.05 mg/m^3	C PROP 65	TPQ	RQ	10000	313					III		
8	S	A/CH@LES				TPQ	RQ	10000								
9	SP	A@LES				TPQ	RQ	10000								
10	S	A@LE	**			TPQ	RQ	10000								
11	S	A@LE	30 mg/m^3	0.1 mg/m^3	C	TPQ	RQ	10000								
12	S	3-0-1 A/CH@LES	1 mg/m^3	1 mg/m^3	SC PROP 65	TPQ	RQ 100	10000	313	SWR				III		100
13	GEL	A@ES	15 mg/m^3 *	5 mg/m^3		TPQ	RQ	10000	313	SWR						4.1, 4.2, 4.3

L-LIQUID, G-GAS, PST-PASTE, SP-SOLID PARTICLE

F-FIRE, P-PRESSURE, R-REACTIVE, A-ACUTE, CH-CHRONIC

G-GENERAL, L-LUNGS, O-ORGANS, E-EYES, S-SKIN

C-CARCINOGEN, M-MUTAGEN, T-TERATOGEN, S+-SUSPECTED

T - TOXIC, F - FLAMMABLE, R - REACTIVE

TITLE I: ____ VOC'S
TITLE III: 187 AIR TOXICS HAPS
TITLE IV: ACID RAIN DEPOSITORS
TITLE VI: ODC'S (CL. I-22, CL. II-34)

*ACGIH - AMERICAN CONFERENCE OF GOVERNMENTAL INDUSTRIAL HYGIENISTS

1b

CHEM ID	MSDS NO.	MANUFACTURER NAME	PRODUCT NAME	MAXIMUM WEIGHT	CAS NUMBER	CHEMICAL NAME	%	CHEMICAL WEIGHT	CONTAINER	AREA
14	9	SAF-T-EZE DIV., STL COMPOUND	SAF-T-EZE NICKEL PREMIUM ANTI-SEIZE	5.00	7440-02-0	NICKEL	100	5.00	CAN	I & G
15	10	MANCHASTER TOOL COMPANY	MANCHASTER TOOL CARBIDE	10.00	12070-12-1	TUNGSTEN CARBIDE	97.7	9.77	RAW	D
16	10	MANCHASTER TOOL COMPANY	MANCHASTER TOOL CARBIDE	10.00	12070-06-3	TANTALUM CARBIDE	56.4	5.64	RAW	D
17	10	MANCHASTER TOOL COMPANY	MANCHASTER TOOL CARBIDE	10.00	7440-48-4	COBALT	26	2.60	RAW	D
18	10	MANCHASTER TOOL COMPANY	MANCHASTER TOOL CARBIDE	10.00		TANTALUM NIOBIUM CARBIDE MIXTURE	20	2.00	RAW	D
19	10	MANCHASTER TOOL COMPANY	MANCHASTER TOOL CARBIDE	10.00	12070-08-5	TITANIUM CARBIDE	20	2.00	RAW	D
20	10	MANCHASTER TOOL COMPANY	MANCHASTER TOOL CARBIDE	10.00	12011-99-3	NIOBIUM CARBIDE	15	1.50	RAW	D
21	10	MANCHASTER TOOL COMPANY	MANCHASTER TOOL CARBIDE	10.00	12069-85-1	HAFNIUM CARBIDE	6	0.60	RAW	D
22	10	MANCHASTER TOOL COMPANY	MANCHASTER TOOL CARBIDE	10.00	7440-47-3	CHROMIUM	5	0.50	RAW	D
23	10	MANCHASTER TOOL COMPANY	MANCHASTER TOOL CARBIDE	10.00	12012-35-0	CHROMIUM CARBIDE	5	0.50	RAW	D
24	10	MANCHASTER TOOL COMPANY	MANCHASTER TOOL CARBIDE	10.00	7439-98-7	MOLYBDENUM	5	0.50	RAW	D
25	10	MANCHASTER TOOL COMPANY	MANCHASTER TOOL CARBIDE	10.00	12011-97-1	MOLYBDENUM CARBIDE (MOC)	5	0.50	RAW	D
26	11	NORTON COMPANY	ARROWBLAST, TBS	100.00	1344-28-1	ALUMINUM OXIDE	90	90.00	RAW	D
27	11	NORTON COMPANY	ARROWBLAST, TBS	100.00	409-21-2	SILICON CARBIDE	5	5.00	RAW	D
28	11	NORTON COMPANY	ARROWBLAST, TBS	100.00		VITREOUS CERAMIC MIXTURE	5	5.00	RAW	D
29	11	NORTON COMPANY	ARROWBLAST, TBS	100.00	14808-60-7	CRYSTALLINE SILICA	1	1.00	RAW	D
30	11.1	NORTON COMPANY	CRYSTOLON, SILICON CARBIDE	1,000.00	409-21-2	SILICON CARBIDE	98	980.00	RAW	D

COPYRIGHT 2000, VANGUARD ENVIRONMENTAL, INC.
TULSA, OK.

CHEM ID	PHYSICAL STATE	NFPA 704/ FPRACH/ GLOES	SAFETY, HEALTH AND INDUSTRIAL HYGIENE: OSHA PEL 29 CFR 1910.1000 (AIR CONTAMINANTS) (547)	ACGIH* TLV	CARCINOGEN (392) MUTAGEN, TERATOGEN / CALIF. SDWA PROP 65 (542)	SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT, TITLE III/EPCRA: 302 EHS (375)	304 CERCLA (775) / SPCC PLAN	311/312 HAZCOM (UNLTD)	313 "FORM R" (586) / EXEC. ORDER "12856"	STORM WATER RUNOFF/ WATER PRIORITY (273) / OPA '90	TSCA (78000) "FORM U" (510)	RCRA HAZ WASTE (586)	CLEAN AIR ACT AMENDMENTS (MAJOR AND MINOR SOURCES): RISK MGMT PROGRAM 112(r) (160)	CLEAN AIR ACT I, III, IV, VI (187 HAPS) / MACT 112(g)	PROCESS SAFETY MGMT (130)	DOT / DOT RQ (1100)
14	GEL	A/@LES	1 mg/m^3	1 mg/m^3	SC PROP 65	TPQ	RQ 100	10000	313	SWR				III		100
15	S	A/CH@LES				TPQ	RQ	10000								
16	S	A/CH@LES				TPQ	RQ	10000								
17	S	A/CH@LES	0.1 mg/m^3	0.05 mg/m^3	C PROP 65	TPQ	RQ	10000	313					III		
18	S	A/CH@LES				TPQ	RQ	10000								
19	S	A/CH@LES				TPQ	RQ	10000								
20	S	A/CH@LES				TPQ	RQ	10000								
21	S	A/CH@LES				TPQ	RQ	10000								
22	S	A/CH@LES	0.5 mg/m^3	0.5 mg/m^3	C PROP 65	TPQ	RQ 5000	10000	313	SWR				III		5000
23	S	A/CH@LES			C PROP 65	TPQ	RQ	10000	313					III		
24	S	A/CH@LES	SOLUBLE: 5 mg/m^3	5 mg/m^3		TPQ	RQ	10000								
25	S	A/CH@LES				TPQ	RQ	10000								
26	SP	0-0-0 A@LES	15 mg/m^3 *	10 mg/m^3		TPQ	RQ	10000	313							
27	SP	0-0-0 A@LES	15 mg/m^3 *	10 mg/m^3		TPQ	RQ	10000								
28	SP	0-0-0 A@LES				TPQ	RQ	10000								
29	SP	0-0-0 A@LES	30 mg/m^3	0.1 mg/m^3	C	TPQ	RQ	10000								
30	SP	0-0-0 A@LES	15 mg/m^3 *	10 mg/m^3		TPQ	RQ	10000								

S-SOLID F-FIRE G-GENES C-CARCINOGEN
L-LIQUID P-PRESSURE L-LUNGS M-MUTAGEN
G-GAS R-REACTIVE O-ORGANS T-TERATOGEN
PST-PASTE A-ACUTE E-EYES B+-SUSPECTED
SP-SOLID PARTICLE CH-CHRONIC S-SKIN

*ACGIH - AMERICAN CONFERENCE OF GOVERNMENTAL INDUSTRIAL HYGIENISTS

T - TOXIC
F - FLAMMABLE
R - REACTIVE

TITLE I: ____ VOC'S
TITLE III: 187 AIR TOXICS HAPS
TITLE IV: ACID RAIN DEPOSITORS
TITLE VI: ODC'S (CL. I-22, CL II-34)

CHEM ID	MSDS NO.	MANUFACTURER NAME	PRODUCT NAME	MAXIMUM WEIGHT	CAS NUMBER	CHEMICAL NAME	%	CHEMICAL WEIGHT	CONTAINER	AREA
31	11.1	NORTON COMPANY	CRYSTOLON, SILICON CARBIDE	1,000.00	14808-60-7	CRYSTALLINE SILICA	1	10.00	RAW	D
32	11.2	NORTON COMPANY	MICROGRADED ALUNDUM	100.00	1344-28-1	ALUMINUM OXIDE	96.3	96.30	RAW	D
33	11.2	NORTON COMPANY	MICROGRADED ALUNDUM	100.00	13463-67-7	TITANIUM DIOXIDE	2.8	2.80	RAW	D
34	11.2	NORTON COMPANY	MICROGRADED ALUNDUM	100.00		IMPURITIES MIXTURE	1.5	1.50	RAW	D
35	12	DETREX CORPORATION	WHITE GEAR MARKING COMPOUND	10.00	7440-70-2	CALCIUM	50	5.00	TUBE	I
36	12	DETREX CORPORATION	WHITE GEAR MARKING COMPOUND	10.00	13463-67-7	TITANIUM DIOXIDE	45	4.50	TUBE	I
37	12	DETREX CORPORATION	WHITE GEAR MARKING COMPOUND	10.00	68154-97-2	NONIONIC SURFACTANT	5	0.50	TUBE	I
38	13	TEXACO LUBRICANTS COMPANY	00482 TRANSULTEX A	4,087.36	64742-53-6	DISTILLATES, PETROLEUM, HYDROTREATED LIGHT NAPHTHENIC	94.66	3,869.09	STEEL DRUM	J & K
39	13	TEXACO LUBRICANTS COMPANY	00482 TRANSULTEX A	4,087.36	8016-28-2	OILS, LARD	10.99	449.20	STEEL DRUM	J & K
40	13	TEXACO LUBRICANTS COMPANY	00482 TRANSULTEX A	4,087.36		OLEFIN MIXTURE	10.99	449.20	STEEL DRUM	J & K
41	13	TEXACO LUBRICANTS COMPANY	00482 TRANSULTEX A	4,087.36	68410-99-1	CHLORINATED ALKENE POLYMER	2.99	122.21	STEEL DRUM	J & K
42	14	FELLOWS CORPORATION	HIGH SPEED STEELS AND TUNGSTEN CARBIDES	100.00	7440-48-4	COBALT	97	97.00	RAW	L & M
43	14	FELLOWS CORPORATION	HIGH SPEED STEELS AND TUNGSTEN CARBIDES	100.00	1309-37-1	IRON OXIDE	91.9	91.90	RAW	L & M
44	14	FELLOWS CORPORATION	HIGH SPEED STEELS AND TUNGSTEN CARBIDES	100.00	7440-02-0	NICKEL	91.9	91.90	RAW	L & M
45	14	FELLOWS CORPORATION	HIGH SPEED STEELS AND TUNGSTEN CARBIDES	100.00	13463-67-7	TITANIUM DIOXIDE	91.9	91.90	RAW	L & M
46	14	FELLOWS CORPORATION	HIGH SPEED STEELS AND TUNGSTEN CARBIDES	100.00	7440-25-7	TANTALUM	50	50.00	RAW	L & M
47	14	FELLOWS CORPORATION	HIGH SPEED STEELS AND TUNGSTEN CARBIDES	100.00	7440-33-7	TUNGSTEN	30	30.00	RAW	L & M

COPYRIGHT, 2000, VANGUARD ENVIRONMENTAL, INC.
TULSA, OK.

CHEM ID	PHYSICAL STATE	NFPA 704/ FPRACH/ GLOES	SAFETY, HEALTH AND INDUSTRIAL HYGIENE: OSHA PEL 29 CFR 1910.1000 (AIR CONTAMINANTS) (547)	ACGIH* TLV	CARCINOGEN (392) MUTAGEN, TERATOGEN / CALIF. SDWA PROP 65 (542)	SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT, TITLE III/EPCRA: 302 EHS (375)	304 CERCLA (775) / SPCC PLAN	311/312 HAZCOM (UNLTD)	313 "FORM R" (586) / EXEC. ORDER "12856"	STORM WATER RUNOFF/ WATER PRIORITY (273) OPA '90	TSCA (78000) "FORM U" (510)	RCRA HAZ WASTE (586)	CLEAN AIR ACT AMENDMENTS (MAJOR AND MINOR SOURCES): RISK MGMT PROGRAM 112(r) (160)	CLEAN AIR ACT I, III, IV, VI (187 HAPS) / MACT 112(g)	PROCESS SAFETY MGMT (130)	DOT / DOT RQ (1100)
31	SP	0-0-0 A@LES	30 mg/m^3	0.1 mg/m^3	C	TPQ	RQ	10000								
32	SP	0-0-0 A@LES	15 mg/m^3 *	10 mg/m^3		TPQ	RQ	10000	313							
33	SP	0-0-0 A@LES	15 mg/m^3 *	10 mg/m^3	C	TPQ	RQ	10000								
34	SP	0-0-0 A@LES				TPQ	RQ	10000								
35	PST	A@E				TPQ	RQ	10000								
36	PST	A@E	15 mg/m^3 *	10 mg/m^3	C	TPQ	RQ	10000								
37	PST	A@E				TPQ	RQ	10000								
38	L	0-1-0 A@LES				TPQ	RQ	10000						III		
39	L	0-1-0 A@LES				TPQ	RQ	10000								
40	L	0-1-0 A@LES				TPQ	RQ	10000								
41	L	0-1-0 A@LES				TPQ	RQ	10000								
42	S	A/CH@LES	0.1 mg/m^3	0.05 mg/m^3	C PROP 65	TPQ	RQ	10000	313					III		
43	S	A/CH@LES	10 mg/m^3	5 mg/m^3		TPQ	RQ	10000								
44	S	A/CH@LES	1 mg/m^3	1 mg/m^3	SC PROP 65	TPQ	RQ 100	10000	313	SWR				III		100
45	S	A/CH@LES	15 mg/m^3 *	10 mg/m^3	C	TPQ	RQ	10000								
46	S	A/CH@LES	5 mg/m^3	5 mg/m^3		TPQ	RQ	10000								
47	S	A/CH@LES	5 mg/m^3	5 mg/m^3		TPQ	RQ	10000								

S=SOLID, F=FIRE, G=GENES
L=LIQUID, P=PRESSURE, L=LUNGS
G=GAS, R=REACTIVE, O=ORGANS
PST=PASTE, A=ACUTE, E=EYES
SP=SOLID PARTICLE, CH=CHRONIC, S=SKIN

C=CARCINOGEN
M=MUTAGEN
T=TERATOGEN
S+_=SUSPECTED

T - TOXIC
F - FLAMMABLE
R - REACTIVE

TITLE I: ____ VOC'S
TITLE III: 187 AIR TOXICS HAPS
TITLE IV: ACID RAIN DEPOSITORS
TITLE VI: ODC'S (CL. I-22, CL. II-34)

*ACGIH - AMERICAN CONFERENCE OF GOVERNMENTAL INDUSTRIAL HYGIENISTS

CHEM ID	MSDS NO.	MANUFACTURER NAME	PRODUCT NAME	MAXIMUM WEIGHT	CAS NUMBER	CHEMICAL NAME	%	CHEMICAL WEIGHT	CONTAINER	AREA
48	14	FELLOWS CORPORATION	HIGH SPEED STEELS AND TUNGSTEN CARBIDES	100.00	7439-98-7	MOLYBDENUM	10.5	10.50	RAW	I & M
49	14	FELLOWS CORPORATION	HIGH SPEED STEELS AND TUNGSTEN CARBIDES	100.00	1314-62-1	VANADIUM PENTOXIDE	6.5	6.50	RAW	I & M
50	14	FELLOWS CORPORATION	HIGH SPEED STEELS AND TUNGSTEN CARBIDES	100.00	12012-35-0	CHROMIUM CARBIDE	5.1	5.10	RAW	I & M
51	14	FELLOWS CORPORATION	HIGH SPEED STEELS AND TUNGSTEN CARBIDES	100.00	7440-47-3	CHROMIUM	4.25	4.25	RAW	I & M
52	14	FELLOWS CORPORATION	HIGH SPEED STEELS AND TUNGSTEN CARBIDES	100.00	1333-86-4	CARBON BLACK	2.3	2.30	RAW	I & M
53	14	FELLOWS CORPORATION	HIGH SPEED STEELS AND TUNGSTEN CARBIDES	100.00	7439-96-5	MANGANESE	0.8	0.80	RAW	I & M
54	14	FELLOWS CORPORATION	HIGH SPEED STEELS AND TUNGSTEN CARBIDES	100.00	7440-21-3	SILICON	0.4	0.40	RAW	I & M
55	15	KOEBEL METALLURGICAL	KOEBEL SUPER CATALYST	500.00	1344-72-1	ALUMINA	95	475.00	RAW	G
56	15	KOEBEL METALLURGICAL	KOEBEL SUPER CATALYST	500.00	1313-99-1	NICKEL OXIDE	10	50.00	RAW	G
57	16	CHAS F L'HOMMEDIEU & SONS COMPANY	LUMP PUMIC STONE	100.00		NATURAL MINERAL AGGREGATE MIXTURE	100	100.00	BOX	B
58	17	DOW CORNING CORPORATION	SILASTIC® 732 RTV SEALANT - CLEAR	10.00	6876-41-1	ACETOXYSILANE	5	0.50	TUBE	E
59	18	CARBIT PAINT COMPANY	28Y10LF ORANGE S.D. GLOSS EN	10.00	64742-89-8	LIGHT ALIPHATIC SOLVENT NAPHTHA	40	4.00	AEROSOL CAN	C, F & N
60	18	CARBIT PAINT COMPANY	28Y10LF ORANGE S.D. GLOSS EN	10.00	8052-41-3	STODDARD SOLVENT	10	1.00	AEROSOL CAN	C, F & N
61	18	CARBIT PAINT COMPANY	28Y10LF ORANGE S.D. GLOSS EN	10.00	3468-63-1	2-NAPHTHALENOL, 1-[(2,4-DINITROPHENYL)AZO]-	5	0.50	AEROSOL CAN	C, F & N
62	18	CARBIT PAINT COMPANY	28Y10LF ORANGE S.D. GLOSS EN	10.00	5102-83-0	BUTANAMIDE, 2,2'-[(3,3'-DICHLORO[1,1'-BIPHENYL]-4,4'-DIYL)BIS(AZO)]BIS[N-(2,4-	5	0.50	AEROSOL CAN	C, F & N
63	18	CARBIT PAINT COMPANY	28Y10LF ORANGE S.D. GLOSS EN	10.00	1330-20-7	XYLENE	2	0.20	AEROSOL CAN	C, F & N
64	18	CARBIT PAINT COMPANY	28Y10LF ORANGE S.D. GLOSS EN	10.00	96-29-7	2-BUTANONE OXIME	0.13	0.01	AEROSOL CAN	C, F & N

COPYRIGHT 2000 VANGUARD ENVIRONMENTAL, INC.
TULSA, OK.

	SAFETY, HEALTH AND INDUSTRIAL HYGIENE					SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT, TITLE III/EPCRA							CLEAN AIR ACT AMENDMENTS (MAJOR AND MINOR SOURCES)				
CHEM ID	PHYSICAL STATE	NFPA 704/ FPRACH/ GLOES	OSHA PEL 29 CFR 1910.1000 (AIR CONTAMINANTS) (547)	ACGIH* TLV	CARCINOGEN (392) MUTAGEN, TERATOGEN / CALIF. SDWA PROP 65 (543)	302 EHS (375)	304 CERCLA (775) / SPCC PLAN	311/312 HAZCOM (UNLTD)	313 "FORM R" (586) / EXEC. ORDER "12856"	STORM WATER RUNOFF/ WATER PRIORITY (273) / OPA '90	TSCA (78000) "FORM U" (510)	RCRA HAZ WASTE (586)	RISK MGMT PROGRAM 112(r) (160)	CLEAN AIR ACT I, III, IV, VI (187 HAPS) / MACT 112(g)	PROCESS SAFETY MGMT (130)	DOT / DOT RQ (1100)
48	S	A/CH@LES	SOLUBLE: 5 mg/m^3	5 mg/m^3		TPQ	RQ	10000								
49	S	A/CH@LES	DUST: (C)0.5 mg/m^3	0.05 mg/m^3		TPQ 100	RQ 1000	10000				P120				9.6.1 1000
50	S	A/CH@LES			C PROP 65	TPQ	RQ	10000	313					III		
51	S	A/CH@LES	0.5 mg/m^3	0.5 mg/m^3	C PROP 65	TPQ	RQ 5000	10000	313	SWR				III		5000
52	S	A/CH@LES	3.5 mg/m^3	3.5 mg/m^3	C PROP 65	TPQ	RQ	10000								
53	S	A/CH@LES	(C)5 mg/m^3	1 mg/m^3		TPQ	RQ	10000	313					III		
54	S	A/CH@LES	15 mg/m^3 *	10 mg/m^3		TPQ	RQ	10000								4.1
55	S	A@LES				TPQ	RQ	10000								
56	S	A@LES	1 mg/m^3	1 mg/m^3	SC	TPQ	RQ	10000	313					III		
57	S					TPQ	RQ	10000								
58	PST	1-1-1 A@LES				TPQ	RQ	10000								
59	L	2-3-0 F/P/A/CH@LOES				TPQ	RQ	10000						III		
60	L	2-3-0 F/P/A/CH@LOES	500 ppm 2900 mg/m^3	100 ppm		TPQ	RQ	10000								
61	L	2-3-0 F/P/A/CH@LOES			PROP 65	TPQ	RQ	10000								
62	L	2-3-0 F/P/A/CH@LOES				TPQ	RQ	10000								
63	L	2-3-0 F/P/A/CH@LOES	100 ppm 435 mg/m^3	100 ppm		TPQ	RQ 100	10000	313	SWR		U239		III		3.3 1000
64	L	2-3-0 F/P/A/CH@LOES				TPQ	RQ	10000			FORM U					

S=SOLID F=FIRE G=GENES
L=LIQUID P=PRESSURE L=LUNGS
G=GAS R=REACTIVE O=ORGANS
PST=PASTE A=ACUTE E=EYES
SP=SOLID CH=CHRONIC S=SKIN
PARTICLE

C=CARCINOGEN
M=MUTAGEN
T=TERATOGEN
S+_=SUSPECTED

T - TOXIC
F - FLAMMABLE
R - REACTIVE

TITLE I: ___ VOC'S
TITLE III: 187 AIR TOXICS HAPS
TITLE IV: ACID RAIN DEPOSITORS
TITLE VI: ODC'S (CL. I-22, CL II-34)

*ACGIH - AMERICAN CONFERENCE OF GOVERNMENTAL INDUSTRIAL HYGIENISTS

CHEM ID	MSDS NO.	MANUFACTURER NAME	PRODUCT NAME	MAXIMUM WEIGHT	CAS NUMBER	CHEMICAL NAME	%	CHEMICAL WEIGHT	CONTAINER	AREA
65	19	CARBIT PAINT COMPANY	28E9 ANSI 49 MED LT GREY SD GL	50.00	64742-89-8	LIGHT ALIPHATIC SOLVENT NAPHTHA	40	20.00	AEROSOL CAN	C, I &
66	19	CARBIT PAINT COMPANY	28E9 ANSI 49 MED LT GREY SD GL	50.00	8052-41-3	STODDARD SOLVENT	5	2.50	AEROSOL CAN	C, I &
67	19	CARBIT PAINT COMPANY	28E9 ANSI 49 MED LT GREY SD GL	50.00	1330-20-7	XYLENE	3	1.50	AEROSOL CAN	C, I &
68	19	CARBIT PAINT COMPANY	28E9 ANSI 49 MED LT GREY SD GL	50.00	96-29-7	2-BUTANONE OXIME	0.17	0.09	AEROSOL CAN	C, I &
69	20	AMOCO OIL COMPANY	RYKON PREMIUM GREASE NO.2	50.00	64742-54-7	HYDROTREATED HEAVY PARAFFINIC DISTILLATE	100	50.00	STEEL DRUM	E
70	20	AMOCO OIL COMPANY	RYKON PREMIUM GREASE NO.2	50.00	64741-88-4	SOLVENT REFINED HEAVY PARAFFINIC DISTILLATES	100	50.00	STEEL DRUM	E
71	21	PETROLANE	PETROLANE PROPANE	750.00	74-98-6	PROPANE	97	727.50	STEEL CYLINDER	E, G &
72	21	PETROLANE	PETROLANE PROPANE	750.00	74-84-0	ETHANE	6	45.00	STEEL CYLINDER	E, G &
73	21	PETROLANE	PETROLANE PROPANE	750.00	115-07-1	PROPYLENE	5	37.50	STEEL CYLINDER	E, G &
74	21	PETROLANE	PETROLANE PROPANE	750.00	106-97-8	BUTANE	2.5	18.75	STEEL CYLINDER	E, G &
75	22	KENNMETAL, INC.	TUNGSTEN CARBIDE WITH COBALT BINDER	100.00	12070-12-1	TUNGSTEN CARBIDE	97.7	97.70	RAW	D
76	22	KENNMETAL, INC.	TUNGSTEN CARBIDE WITH COBALT BINDER	100.00	7440-48-4	COBALT	25	25.00	RAW	D
77	22	KENNMETAL, INC.	TUNGSTEN CARBIDE WITH COBALT BINDER	100.00	12070-06-3	TANTALUM CARBIDE	15	15.00	RAW	D
78	22	KENNMETAL, INC.	TUNGSTEN CARBIDE WITH COBALT BINDER	100.00	12070-08-5	TITANIUM CARBIDE	15	15.00	RAW	D
79	22	KENNMETAL, INC.	TUNGSTEN CARBIDE WITH COBALT BINDER	100.00	12069-94-2	NIOBIUM CARBIDE	5	5.00	RAW	D
80	24	KENNMETAL, INC.	K313, K714, KC732, KS1, KZ313, KZ714, SP313, SP939	150.00	12070-12-1	TUNGSTEN CARBIDE	95.9	143.85	RAW	D
81	24	KENNMETAL, INC.	K313, K714, KC732, KS1, KZ313, KZ714, SP313, SP939	150.00	7440-48-4	COBALT	10	15.00	RAW	D

COPYRIGHT 2000, VANGUARD ENVIRONMENTAL, INC.

CHEM ID	PHYSICAL STATE	NFPA 704 / FPRACH/ GLOES	OSHA PEL 29 CFR 1910.1000 (AIR CONTAMINANTS) (547)	ACGIH* TLV	CARCINOGEN (392) MUTAGEN, TERATOGEN / CALIF. SDWA PROP 65 (542)	302 EHS (375)	304 CERCLA (775) / SPCC PLAN		311/312 HAZCOM (UNLTD)	313 "FORM R" (586) / EXEC. ORDER "12856"	STORM WATER RUNOFF/ WATER PRIORITY (273) / OPA '90	TSCA (78000) "FORM U" (510)	RCRA HAZ WASTE (586)	CLEAN AIR ACT AMENDMENTS (MAJOR AND MINOR SOURCES): RISK MGMT PROGRAM 112(r) (160)	CLEAN AIR ACT I, III, IV, VI (187 HAPS) / MACT 112(g)	PROCESS SAFETY MGMT (130)	DOT / DOT RQ (1100)
65	L	2-3-0 F/P/A/CH@LOES				TPQ	RQ		10000						III		
66	L	2-3-0 F/P/A/CH@LOES	500 ppm 2900 mg/m^3	100 ppm		TPQ	RQ		10000								
67	L	2-3-0 F/P/A/CH@LOES	100 ppm 435 mg/m^3	100 ppm		TPQ	RQ	100	10000	313	SWR		U239		III		3.3 1000
68	L	2-3-0 F/P/A/CH@LOES				TPQ	RQ		10000			FORM U					
69	GEL	0-1-0				TPQ	RQ		10000						III		
70	GEL	0-1-0				TPQ	RQ		10000								
71	G	1-4-0 F/P/A@LES	1000 ppm 1800 mg/m^3			TPQ	RQ		10000					10000 F			2.1
72	G	1-4-0 F/P/A@LES				TPQ	RQ		10000					10000 F			
73	G	1-4-0 F/P/A@LES				TPQ	RQ		10000	313				10000 T / F			
74	G	1-4-0 F/P/A@LES	800 ppm	800 ppm		TPQ	RQ		10000					10000 F			2.1
75	S	2-3-0 F/A/CH@LES				TPQ	RQ		10000								
76	S	2-3-0 F/A/CH@LES	0.1 mg/m^3	0.05 mg/m^3	C PROP 65	TPQ	RQ		10000	313					III		
77	S	2-3-0 F/A/CH@LES				TPQ	RQ		10000								
78	S	2-3-0 F/A/CH@LES				TPQ	RQ		10000								
79	S	2-3-0 F/A/CH@LES				TPQ	RQ		10000								
80	SP	1-3-0 F/A/CH@LES				TPQ	RQ		10000								
81	SP	1-3-0 F/A/CH@LES	0.1 mg/m^3	0.05 mg/m^3	C PROP 65	TPQ	RQ		10000	313					III		

S=SOLID
L=LIQUID
G=GAS
PST=PASTE
SP=SOLID PARTICLE

F=FIRE
P=PRESSURE
R=REACTIVE
A=ACUTE
CH=CHRONIC

G=GENES
L=LUNGS
O=ORGANS
E=EYES
S=SKIN

C=CARCINOGEN
M=MUTAGEN
T=TERATOGEN
S+_=SUSPECTED

T - TOXIC
F - FLAMMABLE
R - REACTIVE

TITLE I: ____ VOC'S
TITLE III: 187 AIR TOXICS HAPS
TITLE IV: ACID RAIN DEPOSITORS
TITLE VI: ODC'S (CL. I-22, CL II-34)

*ACGIH - AMERICAN CONFERENCE OF GOVERNMENTAL INDUSTRIAL HYGIENISTS

CHEM ID	MSDS NO.	MANUFACTURER NAME	PRODUCT NAME	MAXIMUM WEIGHT	CAS NUMBER	CHEMICAL NAME	%	CHEMICAL WEIGHT	CONTAINER	AREA
82	24	KENNMETAL, INC.	K313, K714, KC732, KS1, KZ313, KZ714, SP313, SP939	150.00	12012-35-0	CHROMIUM CARBIDE	7	10.50	RAW	D
83	24	KENNMETAL, INC.	K313, K714, KC732, KS1, KZ313, KZ714, SP313, SP939	150.00	12069-94-2	NIOBIUM CARBIDE	5	7.50	RAW	D
84	24	KENNMETAL, INC.	K313, K714, KC732, KS1, KZ313, KZ714, SP313, SP939	150.00	12070-06-3	TANTALUM CARBIDE	5	7.50	RAW	D
85	24	KENNMETAL, INC.	K313, K714, KC732, KS1, KZ313, KZ714, SP313, SP939	150.00	12070-08-5	TITANIUM CARBIDE	5	7.50	RAW	D
86	25	KENNMETAL, INC.	KYON 2000, KYON 2100, KYON 3000, KYON 3400,	50.00		METALLIC OXYNITRIDE MIXTURE	100	50.00	RAW	D
87	26	KENNMETAL, INC.	K090	50.00	1344-28-1	ALUMINUM OXIDE	95	47.50	RAW	D
88	26	KENNMETAL, INC.	K090	50.00	12070-08-5	TITANIUM CARBIDE	40	20.00	RAW	D
89	28	BLASER SWISSLUBE, INC.	BLASOCUT 2000 UNIVERSAL	8,150.58	64742-52-5	DISTILLATES, PETROLEUM, HYDROTREATED HEAVY NAPHTHENIC	65	5,297.87	STEEL DRUM	PLANT WIDE
90	28	BLASER SWISSLUBE, INC.	BLASOCUT 2000 UNIVERSAL	8,150.58	61790-44-1	ANIONIC EMULSIFIERS	45	3,667.76	STEEL DRUM	PLANT WIDE
91	28	BLASER SWISSLUBE, INC.	BLASOCUT 2000 UNIVERSAL	8,150.58	61791-12-6	CASTOR OIL, ETHOXYLATED	45	3,667.76	STEEL DRUM	PLANT WIDE
92	28	BLASER SWISSLUBE, INC.	BLASOCUT 2000 UNIVERSAL	8,150.58	68608-26-4	PETROLEUM SULFONATE	45	3,667.76	STEEL DRUM	PLANT WIDE
93	28	BLASER SWISSLUBE, INC.	BLASOCUT 2000 UNIVERSAL	8,150.58	61788-76-9	CHLOROALKANES	15	1,222.59	STEEL DRUM	PLANT WIDE
94	28	BLASER SWISSLUBE, INC.	BLASOCUT 2000 UNIVERSAL	8,150.58	61788-66-7	FATTY ACIDS, VEGETABLE-OIL	5	407.53	STEEL DRUM	PLANT WIDE
95	28	BLASER SWISSLUBE, INC.	BLASOCUT 2000 UNIVERSAL	8,150.58	8016-28-2	OILS, LARD	5	407.53	STEEL DRUM	PLANT WIDE
96	28	BLASER SWISSLUBE, INC.	BLASOCUT 2000 UNIVERSAL	8,150.58		STABALIZER MIXTURE	2	163.01	STEEL DRUM	PLANT WIDE
97	28	BLASER SWISSLUBE, INC.	BLASOCUT 2000 UNIVERSAL	8,150.58		CORROSION AND FUNGI INHIBITORS MIXTURE	1	81.51	STEEL DRUM	PLANT WIDE
98	28	BLASER SWISSLUBE, INC.	BLASOCUT 2000 UNIVERSAL	8,150.58		ODORANT AND DYE MIXTURE	0.1	8.15	STEEL DRUM	PLANT WIDE

COPYRIGHT, 2000, VANGUARD ENVIRONMENTAL, INC.
TULSA, OK.

CHEM ID	PHYSICAL STATE	NFPA 704/ FPRACH/ GLOES	SAFETY, HEALTH AND INDUSTRIAL HYGIENE: OSHA PEL 29 CFR 1910.1000 (AIR CONTAMINANTS) (547)	ACGIH* TLV	CARCINOGEN (392) MUTAGEN, TERATOGEN / CALIF. SDWA PROP 65 (542)	SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT, TITLE III/EPCRA: 302 EHS (375)	304 CERCLA (775) / SPCC PLAN	311/312 HAZCOM (UNLTD)	313 "FORM R" (586) / EXEC. ORDER "12856"	STORM WATER RUNOFF/ WATER PRIORITY (273) / OPA '90	TSCA (78000) "FORM U" (510)	RCRA HAZ WASTE (586)	CLEAN AIR ACT AMENDMENTS (MAJOR AND MINOR SOURCES): RISK MGMT PROGRAM 112(r) (160)	CLEAN AIR ACT I, III, IV, VI (187 HAPS) / MACT 112(g)	PROCESS SAFETY MGMT (130)	DOT / DOT RQ (1100)
82	SP	1-3-0 F/A/CH@LES			C PROP 65	TPQ	RQ	10000	313					III		
83	SP	1-3-0 F/A/CH@LES				TPQ	RQ	10000								
84	SP	1-3-0 F/A/CH@LES				TPQ	RQ	10000								
85	SP	1-3-0 F/A/CH@LES				TPQ	RQ	10000								
86	SP	A@E				TPQ	RQ	10000								
87	SP	A/CH@LES	15 mg/m^3 *	10 mg/m^3		TPQ	RQ	10000	313							
88	SP	A/CH@LES				TPQ	RQ	10000								
89	L	1-1-0				TPQ	RQ SPCC	10000						III		
90	L	1-1-0				TPQ	RQ SPCC	10000								
91	L	1-1-0				TPQ	RQ SPCC	10000								
92	L	1-1-0				TPQ	RQ SPCC	10000								
93	L	1-1-0				TPQ	RQ SPCC	10000	313							
94	L	1-1-0				TPQ	RQ SPCC	10000								
95	L	1-1-0				TPQ	RQ SPCC	10000								
96	L	1-1-0				TPQ	RQ SPCC	10000								
97	L	1-1-0				TPQ	RQ SPCC	10000								
98	L	1-1-0				TPQ	RQ SPCC	10000								

[illegible] SOLID [illegible] PRESSURE [illegible] G-GAS [illegible] R-REACTIVE O-ORGANS
PST-PASTE A-ACUTE E-EYES
SP-SOLID CH-CHRONIC S-SKIN
PARTICLE

[illegible] C-CARCINOGEN
M-MUTAGEN
T-TERATOGEN
B+ -SUSPECTED

T - TOXIC
F - FLAMMABLE
R - REACTIVE

TITLE I: ____ VOC'S
TITLE III: 187 AIR TOXICS HAPS
TITLE IV: ACID RAIN DEPOSITORS
TITLE VI: ODC'S (CL. I-22, CL II-34)

*ACGIH - AMERICAN CONFERENCE OF GOVERNMENTAL INDUSTRIAL HYGIENISTS

CHEM ID	MSDS NO.	MANUFACTURER NAME	PRODUCT NAME	MAXIMUM WEIGHT	CAS NUMBER	CHEMICAL NAME	%	CHEMICAL WEIGHT	CONTAINER	AREA
99	29	BLASER SWISSLUBE, INC.	BLASOCUT GRINDEX	439.55	64742-52-6	HYDROTREATED HEAVY NAPHTHENIC OIL	70	307.69	STEEL DRUM	F & P
100	29	BLASER SWISSLUBE, INC.	BLASOCUT GRINDEX	439.55	61790-44-1	ANIONIC EMULSIFIERS	40	175.82	STEEL DRUM	F & P
101	29	BLASER SWISSLUBE, INC.	BLASOCUT GRINDEX	439.55	61791-12-6	CASTOR OIL, ETHOXYLATED	40	175.82	STEEL DRUM	F & P
102	29	BLASER SWISSLUBE, INC.	BLASOCUT GRINDEX	439.55	68608-26-4	PETROLEUM SULFONATE	40	175.82	STEEL DRUM	F & P
103	29	BLASER SWISSLUBE, INC.	BLASOCUT GRINDEX	439.55	61788-66-7	FATTY ACIDS, VEGETABLE-OIL	7	30.77	STEEL DRUM	F & P
104	29	BLASER SWISSLUBE, INC.	BLASOCUT GRINDEX	439.55		STABALIZER MIXTURE	2	8.79	STEEL DRUM	F & P
105	29	BLASER SWISSLUBE, INC.	BLASOCUT GRINDEX	439.55		CORROSION AND FUNGI INHIBITORS MIXTURE	1	4.40	STEEL DRUM	F & P
106	29	BLASER SWISSLUBE, INC.	BLASOCUT GRINDEX	439.55		ODORANT AND DYE MIXTURE	0.1	0.44	STEEL DRUM	F & P
107	32	SANDVIK COROMANT COMPANY	ALL SANDVIK COROMANT CEMENTED TUNGSTEN	10.00	12070-12-1	TUNGSTEN CARBIDE	94	9.40	RAW	D
108	32	SANDVIK COROMANT COMPANY	ALL SANDVIK COROMANT CEMENTED TUNGSTEN	10.00	13463-67-7	TITANIUM DIOXIDE	23	2.30	RAW	D
109	32	SANDVIK COROMANT COMPANY	ALL SANDVIK COROMANT CEMENTED TUNGSTEN	10.00	7440-48-4	COBALT	16	1.60	RAW	D
110	32	SANDVIK COROMANT COMPANY	ALL SANDVIK COROMANT CEMENTED TUNGSTEN	10.00	12070-06-3	TANTALUM CARBIDE	15	1.50	RAW	D
111	32	SANDVIK COROMANT COMPANY	ALL SANDVIK COROMANT CEMENTED TUNGSTEN	10.00	7440-47-3	CHROMIUM	3	0.30	RAW	D
112	32	SANDVIK COROMANT COMPANY	ALL SANDVIK COROMANT CEMENTED TUNGSTEN	10.00	12012-35-0	CHROMIUM CARBIDE	3	0.30	RAW	D
113	32	SANDVIK COROMANT COMPANY	ALL SANDVIK COROMANT CEMENTED TUNGSTEN	10.00	1344-28-1	ALUMINUM OXIDE	2	0.20	RAW	D
114	32	SANDVIK COROMANT COMPANY	ALL SANDVIK COROMANT CEMENTED TUNGSTEN	10.00	1303-86-2	BORON OXIDE	2	0.20	RAW	D
115	32	SANDVIK COROMANT COMPANY	ALL SANDVIK COROMANT CEMENTED TUNGSTEN	10.00	7439-98-7	MOLYBDENUM	2	0.20	RAW	D

COPYRIGHT © 2000, VANGUARD ENVIRONMENTAL, INC.
TULSA, OK.

CHEM ID	PHYSICAL STATE	NFPA 704/ FPRACH/ GLOES	OSHA PEL 29 CFR 1910.1000 (AIR CONTAMINANTS) (547)	ACGIH* TLV	CARCINOGEN (392) MUTAGEN, TERATOGEN / CALIF. SDWA PROP 65 (542)	302 EHS (375)	304 CERCLA (775) / SPCC PLAN	311/312 HAZCOM (UNLTD)	313 "FORM R" (586) / EXEC. ORDER "12856"	STORM WATER RUNOFF/ WATER PRIORITY (273) / OPA '90	TSCA (78000) "FORM U" (510)	RCRA HAZ WASTE (586)	RISK MGMT PROGRAM 112(r) (160)	CLEAN AIR ACT I, III, IV, VI (187 HAPS) / MACT 112(r)	PROCESS SAFETY MGMT (130)	DOT / DOT RQ (1100)
99	L	0-1-0				TPQ	RQ	10000								
100	L	0-1-0				TPQ	RQ	10000								
101	L	0-1-0				TPQ	RQ	10000								
102	L	0-1-0				TPQ	RQ	10000								
103	L	0-1-0				TPQ	RQ	10000								
104	L	0-1-0				TPQ	RQ	10000								
105	L	0-1-0				TPQ	RQ	10000								
106	L	0-1-0				TPQ	RQ	10000								
107	S	A/CH@LES				TPQ	RQ	10000								
108	S	A/CH@LES	15 mg/m^3 *	10 mg/m^3	C	TPQ	RQ	10000								
109	S	A/CH@LES	0.1 mg/m^3	0.05 mg/m^3	C PROP 65	TPQ	RQ	10000	313					III		
110	S	A/CH@LES				TPQ	RQ	10000								
111	S	A/CH@LES	0.5 mg/m^3	0.5 mg/m^3	C PROP 65	TPQ	RQ 5000	10000	313	SWR				III		5000
112	S	A/CH@LES			C PROP 65	TPQ	RQ	10000	313					III		
113	S	A/CH@LES	15 mg/m^3 *	10 mg/m^3		TPQ	RQ	10000	313							
114	S	A/CH@LES	15 mg/m^3 *	10 mg/m^3		TPQ	RQ	10000								
115	S	A/CH@LES	SOLUBLE: 5 mg/m^3	5 mg/m^3		TPQ	RQ	10000								

L=LIQUID F=FIRE G=GENES
P=PRESSURE L=LUNGS
G=GAS R=REACTIVE O=ORGANS
PST=PASTE A=ACUTE E=EYES
SP=SOLID CH=CHRONIC S=SKIN
PARTICLE

C=CARCINOGEN
M=MUTAGEN
T=TERATOGEN
S+_=SUSPECTED

T - TOXIC
F - FLAMMABLE
R - REACTIVE

TITLE I: ___ VOC'S
TITLE III: 187 AIR TOXICS HAPS
TITLE IV: ACID RAIN DEPOSITORS
TITLE VI: ODC'S (CL. I-22, CL II-34)

*ACGIH - AMERICAN CONFERENCE OF GOVERNMENTAL INDUSTRIAL HYGIENISTS

CHEM ID	MSDS NO.	MANUFACTURER NAME	PRODUCT NAME	MAXIMUM WEIGHT	CAS NUMBER	CHEMICAL NAME	%	CHEMICAL WEIGHT	CONTAINER	AREA
116	32	SANDVIK COROMANT COMPANY	ALL SANDVIK COROMANT CEMENTED TUNGSTEN	10.00	7440-67-7	ZIRCONIUM	2	0.20	RAW	D
117	33	PAGE-WILSON CORPORATION	PRESSED RUBBER WHEEL	10.00		FIBERGLASS MESH MIXTURE	90	9.00	RAW	B
118	33	PAGE-WILSON CORPORATION	PRESSED RUBBER WHEEL	10.00	1344-28-1	ALUMINUM OXIDE	1	0.10	RAW	B
119	33	PAGE-WILSON CORPORATION	PRESSED RUBBER WHEEL	10.00	60304-36-1	ALUMINUM POTASSIUM FLUORIDE	1	0.10	RAW	B
120	33	PAGE-WILSON CORPORATION	PRESSED RUBBER WHEEL	10.00	1305-78-8	CALCIUM OXIDE	1	0.10	RAW	B
121	33	PAGE-WILSON CORPORATION	PRESSED RUBBER WHEEL	10.00	15096-52-3	CRYOLITE	1	0.10	RAW	B
122	33	PAGE-WILSON CORPORATION	PRESSED RUBBER WHEEL	10.00	12068-85-8	IRON DISULFIDE	1	0.10	RAW	B
123	33	PAGE-WILSON CORPORATION	PRESSED RUBBER WHEEL	10.00	1309-37-1	IRON OXIDE	1	0.10	RAW	B
124	33	PAGE-WILSON CORPORATION	PRESSED RUBBER WHEEL	10.00		NATURAL RUBBER MIXTURE	1	0.10	RAW	B
125	33	PAGE-WILSON CORPORATION	PRESSED RUBBER WHEEL	10.00	409-21-2	SILICON CARBIDE	1	0.10	RAW	B
126	33	PAGE-WILSON CORPORATION	PRESSED RUBBER WHEEL	10.00	7704-34-9	SULFUR	1	0.10	RAW	B
127	34	THERMAL CERAMICS, INC.	REFRACTORY CERAMIC FIBER PRODUCT	100.00	142844-00-6	ALUMINOSILICATE FIBER	100	100.00	RAW	G
128	35	MACDERMID, INC.	METEX FA COPPER STRIPPER	4,000.00	1336-21-6	AMMONIUM HYDROXIDE	25	1,000.00	POLY DRUM	C
129	39	SANDVIK COROMANT COMPANY	MOLYKOTE® 1000 PASTE	10.00	64742-65-0	DISTILLATES, PETROLEUM, SOLVENT-DEWAXED HEAVY PARAFFINIC	48	4.80	TUBE	D
130	39	SANDVIK COROMANT COMPANY	MOLYKOTE® 1000 PASTE	10.00	64742-56-9	DISTILLATES, PETROLEUM, SOLVENT-DEWAXED LIGHT PARAFFINIC	48	4.80	TUBE	D
131	39	SANDVIK COROMANT COMPANY	MOLYKOTE® 1000 PASTE	10.00	7789-75-5	CALCIUM FLUORIDE	19	1.90	TUBE	D
132	39	SANDVIK COROMANT COMPANY	MOLYKOTE® 1000 PASTE	10.00	7782-42-5	GRAPHITE	10	1.00	TUBE	D

COPYRIGHT 2000, VANGUARD ENVIRONMENTAL, INC.
TULSA, OK

CHEM ID	PHYSICAL STATE	SAFETY, HEALTH AND INDUSTRIAL/HYGIENE: NFPA 704/ FPRACH/ GLOES	OSHA PEL 29 CFR 1910.1000 (AIR CONTAMINANTS) (547)	ACGIH* TLV	CARCINOGEN (392) MUTAGEN, TERATOGEN / CALIF. SDWA PROP 65 (542)	SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT, TITLE III/EPCRA: 302 EHS (375)	304 CERCLA (775) / SPCC PLAN	311/312 HAZCOM (UNLTD)	313 "FORM R" (586) / EXEC. ORDER "12856"	STORM WATER RUNOFF/ WATER PRIORITY (273) / OPA '90	TSCA (78000) "FORM U" (510)	RCRA HAZ WASTE (586)	CLEAN AIR ACT AMENDMENTS (MAJOR AND MINOR SOURCES): RISK MGMT PROGRAM 112(r) (160)	CLEAN AIR ACT I, III, IV, VI (187 HAPS) / MACT 112(g)	PROCESS SAFETY MGMT (130)	DOT / DOT RQ (1100)
116	S	A/CH@LES	5 mg/m^3	5 mg/m^3		TPQ	RQ	10000								4.1, 4.2
117	S					TPQ	RQ	10000								
118	S		15 mg/m^3 *	10 mg/m^3		TPQ	RQ	10000	313							
119	S					TPQ	RQ	10000								
120	S		5 mg/m^3	2 mg/m^3		TPQ	RQ	10000								9
121	S					TPQ	RQ	10000								
122	S					TPQ	RQ	10000								
123	S		10 mg/m^3	5 mg/m^3		TPQ	RQ	10000								
124	S					TPQ	RQ	10000								
125	S		15 mg/m^3 *	10 mg/m^3		TPQ	RQ	10000								
126	S					TPQ	RQ	10000								
127	S	1-0-0 A/CH@LES				TPQ	RQ	10000								
128	L	2-0-0 A@LES				TPQ	RQ 1000	10000								8 1000
129	PST	A/CH@LOES				TPQ	RQ	10000						III		
130	PST	A/CH@LOES				TPQ	RQ	10000								
131	PST	A/CH@LOES				TPQ	RQ	10000								
132	PST	A/CH@LOES	**			TPQ	RQ	10000								

[illegible] C=GENES
L=LIQUID P=PRESSURE L=LUNGS
G=GAS R=REACTIVE O=ORGANS
PST=PASTE A=ACUTE E=EYES
SP=SOLID CH=CHRONIC S=SKIN
PARTICLE

C=CARCINOGEN
M=MUTAGEN
T=TERATOGEN
S+ =SUSPECTED

T - TOXIC
F - FLAMMABLE
R - REACTIVE

TITLE I: ___ VOC'S
TITLE III: 187 AIR TOXICS HAPS
TITLE IV: ACID RAIN DEPOSITORS
TITLE VI: ODC'S (CL. I-22, CL II-34)

*ACGIH - AMERICAN CONFERENCE OF GOVERNMENTAL INDUSTRIAL HYGIENISTS

CHEM ID	MSDS NO.	MANUFACTURER NAME	PRODUCT NAME	MAXIMUM WEIGHT	CAS NUMBER	CHEMICAL NAME	%	CHEMICAL WEIGHT	CONTAINER	AREA
133	39	SANDVIK COROMANT COMPANY	MOLYKOTE® 1000 PASTE	10.00	7440-50-8	COPPER	7	0.70	TUBE	D
134	39	SANDVIK COROMANT COMPANY	MOLYKOTE® 1000 PASTE	10.00	9003-27-4	POLYISOBUTYLENE	5	0.50	TUBE	D
135	39	SANDVIK COROMANT COMPANY	MOLYKOTE® 1000 PASTE	10.00	17265-14-4	DISODIUM SEBACATE	4	0.40	TUBE	D
136	39	SANDVIK COROMANT COMPANY	MOLYKOTE® 1000 PASTE	10.00	7440-66-6	ZINC	4	0.40	TUBE	D
137	39	SANDVIK COROMANT COMPANY	MOLYKOTE® 1000 PASTE	10.00	7631-86-9	SILICON DIOXIDE	3	0.30	TUBE	D
138	40	SANDVIK COROMANT COMPANY	CBN	10.00	12070-12-1	TUNGSTEN CARBIDE	97	9.70	RAW	D
139	40	SANDVIK COROMANT COMPANY	CBN	10.00	13463-67-7	TITANIUM DIOXIDE	23	2.30	RAW	D
140	40	SANDVIK COROMANT COMPANY	CBN	10.00	7440-48-4	COBALT	15	1.50	RAW	D
141	40	SANDVIK COROMANT COMPANY	CBN	10.00	1344-28-1	ALUMINUM OXIDE	2	0.20	RAW	D
142	40	SANDVIK COROMANT COMPANY	CBN	10.00	1303-86-2	BORON OXIDE	2	0.20	RAW	D
143	40	SANDVIK COROMANT COMPANY	CBN	10.00	7440-47-3	CHROMIUM	2	0.20	RAW	D
144	40	SANDVIK COROMANT COMPANY	CBN	10.00	7439-98-7	MOLYBDENUM	2	0.20	RAW	D
145	40	SANDVIK COROMANT COMPANY	CBN	10.00	7440-67-7	ZIRCONIUM	2	0.20	RAW	D
146	40	SANDVIK COROMANT COMPANY	CBN	10.00	7440-02-0	NICKEL	0.35	0.04	RAW	D
147	41	SANDVIK COROMANT COMPANY	PCD	10.00	12070-12-1	TUNGSTEN CARBIDE	88	8.80	RAW	D
148	41	SANDVIK COROMANT COMPANY	PCD	10.00	7440-48-4	COBALT	23	2.30	RAW	D
149	41	SANDVIK COROMANT COMPANY	PCD	10.00	13463-67-7	TITANIUM DIOXIDE	23	2.30	RAW	D

COPYRIGHT 2000, VANGUARD ENVIRONMENTAL, INC.
TULSA, OK.

CHEM ID	PHYSICAL STATE	NFPA 704/ FPRACH/ GLOES	SAFETY, HEALTH AND INDUSTRIAL HYGIENE: OSHA PEL 29 CFR 1910.1000 (AIR CONTAMINANTS) (547)	ACGIH* TLV	CARCINOGEN (392) MUTAGEN, TERATOGEN / CALIF. SDWA PROP 65 (542)	SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT, TITLE III/EPCRA: 302 EHS (375)	304 CERCLA (775) / SPCC PLAN	311/312 HAZCOM (UNLTD)	313 "FORM R" (586) / EXEC. ORDER "12856"	STORM WATER RUNOFF/ WATER PRIORITY (273) OPA '90	TSCA (78000) "FORM U" (510)	RCRA HAZ WASTE (586)	CLEAN AIR ACT AMENDMENTS (MAJOR AND MINOR SOURCES): RISK MGMT PROGRAM 112(r) (160)	CLEAN AIR ACT I, III, IV, VI (187 HAPS) / MACT 112(g)	PROCESS SAFETY MGMT (130)	DOT / DOT RQ (1100)
133	PST	A/CH@LOES	FUME: 0.1 mg/m^3	1 mg/m^3		TPQ	RQ 5000	10000	313	SWR						5000
134	PST	A/CH@LOES				TPQ	RQ	10000								
135	PST	A/CH@LOES				TPQ	RQ	10000								
136	PST	A/CH@LOES				TPQ	RQ 1000	10000	313	SWR						
137	PST	A/CH@LOES	6 mg/m^3	10 mg/m^3	SC	TPQ	RQ	10000								
138	S	A/CH@LES				TPQ	RQ	10000								
139	S	A/CH@LES	15 mg/m^3 *	10 mg/m^3	C	TPQ	RQ	10000								
140	S	A/CH@LES	0.1 mg/m^3	0.05 mg/m^3	C PROP 65	TPQ	RQ	10000	313					III		
141	S	A/CH@LES	15 mg/m^3 *	10 mg/m^3		TPQ	RQ	10000	313							
142	S	A/CH@LES	15 mg/m^3 *	10 mg/m^3		TPQ	RQ	10000								
143	S	A/CH@LES	0.5 mg/m^3	0.5 mg/m^3	C PROP 65	TPQ	RQ 5000	10000	313	SWR				III		5000
144	S	A/CH@LES	SOLUBLE: 5 mg/m^3	5 mg/m^3		TPQ	RQ	10000								
145	S	A/CH@LES	5 mg/m^3	5 mg/m^3		TPQ	RQ	10000								4 1. 4 2
146	S	A/CH@LES	1 mg/m^3	1 mg/m^3	SC PROP 65	TPQ	RQ 100	10000	313	SWR				III		100
147	S	A/CH@LES				TPQ	RQ	10000								
148	S	A/CH@LES	0.1 mg/m^3	0.05 mg/m^3	C PROP 65	TPQ	RQ	10000	313					III		
149	S	A/CH@LES	15 mg/m^3 *	10 mg/m^3	C	TPQ	RQ	10000								

S=SOLID, L=LIQUID, G=GAS, PST=PASTE, SP=SOLID PARTICLE

F=FIRE, P=PRESSURE, R=REACTIVE, A=ACUTE, CH=CHRONIC

O=GENES, L=LUNGS, O=ORGANS, E=EYES, S=SKIN

C=CARCINOGEN, M=MUTAGEN, T=TERATOGEN, S+=SUSPECTED

T - TOXIC
F - FLAMMABLE
R - REACTIVE

TITLE I: ___ VOC'S
TITLE III: 187 AIR TOXICS HAPS
TITLE IV: ACID RAIN DEPOSITORS
TITLE VI: ODC'S (CL. I-22, CL II-34)

*ACGIH - AMERICAN CONFERENCE OF GOVERNMENTAL INDUSTRIAL HYGIENISTS

CHEM ID	MSDS NO.	MANUFACTURER NAME	PRODUCT NAME	MAXIMUM WEIGHT	CAS NUMBER	CHEMICAL NAME	%	CHEMICAL WEIGHT	CONTAINER	AREA
150	41	SANDVIK COROMANT COMPANY	PCD	10.00	1344-28-1	ALUMINUM OXIDE	2	0.20	RAW	D
151	41	SANDVIK COROMANT COMPANY	PCD	10.00	1303-86-2	BORON OXIDE	2	0.20	RAW	D
152	41	SANDVIK COROMANT COMPANY	PCD	10.00	7440-47-3	CHROMIUM	2	0.20	RAW	D
153	41	SANDVIK COROMANT COMPANY	PCD	10.00	7439-98-7	MOLYBDENUM	2	0.20	RAW	D
154	41	SANDVIK COROMANT COMPANY	PCD	10.00	7440-67-7	ZIRCONIUM	2	0.20	RAW	D
155	43	ERICH NUSSLE OHG	CONDURSAL 0090	20.00	1303-86-2	BORON OXIDE	50	10.00	CAN	C
156	43	ERICH NUSSLE OHG	CONDURSAL 0090	20.00	1330-20-7	XYLENE	25	5.00	CAN	C
157	44	ERICH NUSSLE OHG	CONDURSAL N523	20.00	1308-38-9	CHROMIUM OXIDE	100	20.00	CAN	C
158	44	ERICH NUSSLE OHG	CONDURSAL N523	20.00	1330-20-7	XYLENE	100	20.00	CAN	C
159	45	PERKINS PRODUCTS, INC.	PERCHEM 1345-CS	465.05	64-02-8	EDTA TETRASODIUM SALT	5	23.25	STEEL DRUM	N
160	45	PERKINS PRODUCTS, INC.	PERCHEM 1345-CS	465.05	39464-70-5	ETHOXYLATED PHENYL PHOSPHATE	1	4.65	STEEL DRUM	N
161	46	ERICH NUSSLE OHG	CONDURSAL 710	100.00		METALLIC OXIDE MIXTURE	100	100.00	CAN	C
162	46	ERICH NUSSLE OHG	CONDURSAL 710	100.00		SILICATE MIXTURE	100	100.00	CAN	C
163	46	ERICH NUSSLE OHG	CONDURSAL 710	100.00	1344-09-8	SODIUM SILICATE	100	100.00	CAN	C
164	47	NEW PIG CORPORATION	ORIGINAL PIG® ABSORBENT SOCKS	200.00	25038-59-9	POLY(OXYETHYLENEOXYTEREPHTHALOYL)	4.5	9.00	BOX	D
165	47	NEW PIG CORPORATION	ORIGINAL PIG® ABSORBENT SOCKS	200.00	9003-07-0	POLYPROPYLENE	0.5	1.00	BOX	D
166	48	NORTON COMPANY	DIAMOND OR CUBIC BORON NITRIDE GRINDING WHEELS	5,000.00	7440-50-8	COPPER	85	4,250.00	RAW	D, I & P

COPYRIGHT 2000, VANGUARD ENVIRONMENTAL, INC.
TULSA, OK

CHEM ID	PHYSICAL STATE	SAFETY, HEALTH AND INDUSTRIAL HYGIENE: NFPA 704/ FPRACH/ GLOES	OSHA PEL 29 CFR 1910.1000 (AIR CONTAMINANTS) (547)	ACGIH* TLV	CARCINOGEN (392) MUTAGEN, TERATOGEN / CALIF. SDWA PROP 65 (542)	SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT, TITLE III/EPCRA: 302 EHS (375)	304 CERCLA (775) / SPCC PLAN	311/312 HAZCOM (UNLTD)	313 "FORM R" (586) / EXEC. ORDER "12856"	STORM WATER RUNOFF/ WATER PRIORITY (273) / OPA '90	TSCA (78000) "FORM U" (510)	RCRA HAZ WASTE (586)	CLEAN AIR ACT AMENDMENTS (MAJOR AND MINOR SOURCES): RISK MGMT PROGRAM 112(r) (160)	CLEAN AIR ACT I, III, IV, VI (187 HAPS) / MACT 112(g)	PROCESS SAFETY MGMT (130)	DOT / DOT RQ (1100)
150	S	A/CH@LES	15 mg/m^3 *	10 mg/m^3		TPQ	RQ	10000	313							
151	S	A/CH@LES	15 mg/m^3 *	10 mg/m^3		TPQ	RQ	10000								
152	S	A/CH@LES	0.5 mg/m^3	0.5 mg/m^3	C PROP 65	TPQ	RQ 5000	10000	313	SWR				III		5000
153	S	A/CH@LES	SOLUBLE: 5 mg/m^3	5 mg/m^3		TPQ	RQ	10000								
154	S	A/CH@LES	5 mg/m^3	5 mg/m^3		TPQ	RQ	10000								4.1, 4.2
155	L	F/A@LES	15 mg/m^3 *	10 mg/m^3		TPQ	RQ	10000								
156	L	F/A@LES	100 ppm 435 mg/m^3	100 ppm		TPQ	RQ 100	10000	313	SWR		U239		III		3.3 1000
157	PST	F/A@LES			C PROP 65	TPQ	RQ	10000	313					III		
158	PST	F/A@LES	100 ppm 435 mg/m^3	100 ppm		TPQ	RQ 100	10000	313	SWR		U239		III		3.3 1000
159	L	1-0-0 A@LES				TPQ	RQ	10000								
160	L	1-0-0 A@LES				TPQ	RQ	10000						III		
161	PST	A@LES				TPQ	RQ	10000								
162	PST	A@LES				TPQ	RQ	10000								
163	PST	A@LES			SC	TPQ	RQ	10000								
164	SP	A@LE				TPQ	RQ	10000								
165	SP	A@LE				TPQ	RQ	10000								
166	S	A@LES	FUME: 0.1 mg/m^3	1 mg/m^3		TPQ	RQ 5000 SPCC	10000	313	SWR						5000

S=SOLID F=FIRE G=GENES
L=LIQUID P=PRESSURE L=LUNGS
G=GAS R=REACTIVE O=ORGANS
PST=PASTE A=ACUTE E=EYES
SP=SOLID CH=CHRONIC S=SKIN
PARTICLE

C=CARCINOGEN
M=MUTAGEN
T=TERATOGEN
S+_=SUSPECTED

*ACGIH - AMERICAN CONFERENCE OF GOVERNMENTAL INDUSTRIAL HYGIENISTS

T - TOXIC
F - FLAMMABLE
R - REACTIVE

TITLE I: ___ VOC'S
TITLE III: 187 AIR TOXICS HAPS
TITLE IV: ACID RAIN DEPOSITORS
TITLE VI: ODC'S (CL. I-22, CL II-34)

CHEM ID	MSDS NO.	MANUFACTURER NAME	PRODUCT NAME	MAXIMUM WEIGHT	CAS NUMBER	CHEMICAL NAME	%	CHEMICAL WEIGHT	CONTAINER	AREA
167	48	NORTON COMPANY	DIAMOND OR CUBIC BORON NITRIDE GRINDING WHEELS	5,000.00	7440-22-4	SILVER	85	4,250.00	RAW	D, I & P
168	48	NORTON COMPANY	DIAMOND OR CUBIC BORON NITRIDE GRINDING WHEELS	5,000.00	7440-02-0	NICKEL	82	4,100.00	RAW	D, I & P
169	48	NORTON COMPANY	DIAMOND OR CUBIC BORON NITRIDE GRINDING WHEELS	5,000.00	1344-28-1	ALUMINUM OXIDE	81	4,050.00	RAW	D, I & P
170	48	NORTON COMPANY	DIAMOND OR CUBIC BORON NITRIDE GRINDING WHEELS	5,000.00	12070-12-1	TUNGSTEN CARBIDE	75	3,750.00	RAW	D, I & P
171	48	NORTON COMPANY	DIAMOND OR CUBIC BORON NITRIDE GRINDING WHEELS	5,000.00	409-21-2	SILICON CARBIDE	73	3,650.00	RAW	D, I & P
172	48	NORTON COMPANY	DIAMOND OR CUBIC BORON NITRIDE GRINDING WHEELS	5,000.00	7440-48-4	COBALT	60	3,000.00	RAW	D, I & P
173	48	NORTON COMPANY	DIAMOND OR CUBIC BORON NITRIDE GRINDING WHEELS	5,000.00	7440-31-5	TIN	25	1,250.00	RAW	D, I & P
174	48	NORTON COMPANY	DIAMOND OR CUBIC BORON NITRIDE GRINDING WHEELS	5,000.00	7782-42-5	GRAPHITE	20	1,000.00	RAW	D, I & P
175	48	NORTON COMPANY	DIAMOND OR CUBIC BORON NITRIDE GRINDING WHEELS	5,000.00	10043-11-5	BORON NITRIDE	5	250.00	RAW	D, I & P
176	48	NORTON COMPANY	DIAMOND OR CUBIC BORON NITRIDE GRINDING WHEELS	5,000.00	7782-40-3	DIAMOND	5	250.00	RAW	D, I & P
177	48	NORTON COMPANY	DIAMOND OR CUBIC BORON NITRIDE GRINDING WHEELS	5,000.00	60676-86-0	FUSED SILICA	5	250.00	RAW	D, I & P
178	48	NORTON COMPANY	DIAMOND OR CUBIC BORON NITRIDE GRINDING WHEELS	5,000.00	9003-35-4	PHENOL, POLYMER WITH FORMALDEHYDE	5	250.00	RAW	D, I & P
179	48	NORTON COMPANY	DIAMOND OR CUBIC BORON NITRIDE GRINDING WHEELS	5,000.00	7440-21-3	SILICON	5	250.00	RAW	D, I & P
180	48	NORTON COMPANY	DIAMOND OR CUBIC BORON NITRIDE GRINDING WHEELS	5,000.00	7439-89-6	IRON	3	150.00	RAW	D, I & P
181	48	NORTON COMPANY	DIAMOND OR CUBIC BORON NITRIDE GRINDING WHEELS	5,000.00	7439-96-5	MANGANESE	3	150.00	RAW	D, I & P
182	48	NORTON COMPANY	DIAMOND OR CUBIC BORON NITRIDE GRINDING WHEELS	5,000.00	14808-60-7	CRYSTALLINE SILICA	1	50.00	RAW	D, I & P
183	48	NORTON COMPANY	DIAMOND OR CUBIC BORON NITRIDE GRINDING WHEELS	5,000.00	7439-98-7	MOLYBDENUM	1	50.00	RAW	D, I & P

COPYRIGHT 2000 VANGUARD ENVIRONMENTAL, INC.
TULSA, OK.

CHEM ID	PHYSICAL STATE	NFPA 704/ FPRACH/ GLOES	OSHA PEL 29 CFR 1910.1000 (AIR CONTAMINANTS) (547)	ACGIH* TLV	CARCINOGEN (392) MUTAGEN, TERATOGEN / CALIF. SDWA PROP 65 (542)	302 EHS (375)	304 CERCLA (775) / SPCC PLAN	311/312 HAZCOM (UNLTD)	313 "FORM R" (586) / EXEC. ORDER "12856"	STORM WATER RUNOFF/ WATER PRIORITY (273) / OPA '90	TSCA (78000) "FORM U" (510)	RCRA HAZ WASTE (586)	RISK MGMT PROGRAM 112(r) (160)	CLEAN AIR ACT I, III, IV, VI (187 HAPS) / MACT 112(g)	PROCESS SAFETY MGMT (130)	DOT / DOT RQ (1100)
			SAFETY, HEALTH AND INDUSTRIAL HYGIENE			SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT, TITLE III/EPCRA							CLEAN AIR ACT AMENDMENTS (MAJOR AND MINOR SOURCES)			
167	S	A@LES	0.01 mg/m^3	0.1 mg/m^3		TPQ	RQ 1000 SPCC	10000	313	SWR						1000
168	S	A@LES	1 mg/m^3	1 mg/m^3	SC PROP 65	TPQ	RQ 100 SPCC	10000	313	SWR				III		100
169	S	A@LES	15 mg/m^3 *	10 mg/m^3		TPQ	RQ SPCC	10000	313							
170	S	A@LES				TPQ	RQ SPCC	10000								
171	S	A@LES	15 mg/m^3 *	10 mg/m^3		TPQ	RQ SPCC	10000								
172	S	A@LES	0.1 mg/m^3	0.05 mg/m^3	C PROP 65	TPQ	RQ SPCC	10000	313					III		
173	S	A@LES	2 mg/m^3	0.1 mg/m^3		TPQ	RQ SPCC	10000								
174	S	A@LES	**			TPQ	RQ SPCC	10000								
175	S	A@LES				TPQ	RQ SPCC	10000								
176	S	A@LES				TPQ	RQ SPCC	10000								
177	S	A@LES	0.1 mg/m^3	0.1 mg/m^3		TPQ	RQ SPCC	10000								
178	S	A@LES				TPQ	RQ SPCC	10000								
179	S	A@LES	15 mg/m^3 *	10 mg/m^3		TPQ	RQ SPCC	10000								4.1
180	S	A@LES				TPQ	RQ SPCC	10000								
181	S	A@LES	(C)5 mg/m^3	1 mg/m^3		TPQ	RQ SPCC	10000	313					III		
182	S	A@LES	30 mg/m^3	0.1 mg/m^3	C	TPQ	RQ SPCC	10000								
183	S	A@LES	SOLUBLE: 5 mg/m^3	5 mg/m^3		TPQ	RQ SPCC	10000								

S=SOLID F=FIRE G=GENES
L=LIQUID P=PRESSURE LI=LUNGS
G=GAS R=REACTIVE O=ORGANS
PST=PASTE A=ACUTE E=EYES
SP=SOLID CH=CHRONIC S=SKIN
PARTICLE

C=CARCINOGEN
M=MUTAGEN
T=TERATOGEN
S+_=SUSPECTED

T - TOXIC
F - FLAMMABLE
R - REACTIVE

TITLE I: ___ VOC'S
TITLE III: 187 AIR TOXICS HAPS
TITLE IV: ACID RAIN DEPOSITORS
TITLE VI: ODC'S (CL. I-22, CL II-34)

*ACGIH - AMERICAN CONFERENCE OF GOVERNMENTAL INDUSTRIAL HYGIENISTS

CHEM ID	MSDS NO.	MANUFACTURER NAME	PRODUCT NAME	MAXIMUM WEIGHT	CAS NUMBER	CHEMICAL NAME	%	CHEMICAL WEIGHT	CONTAINER	AREA
184	48	NORTON COMPANY	DIAMOND OR CUBIC BORON NITRIDE GRINDING WHEELS	5,000.00	7723-14-0	PHOSPHORUS	1	50.00	RAW	D, F & R
185	49	ITW FLUID PRODUCTS GROUP	YELLOW DXX-526, DLT, DXX-340	72.65	123-86-4	BUTYL ACETATE	50	36.33	BOTTLE	R
186	49	ITW FLUID PRODUCTS GROUP	YELLOW DXX-526, DLT, DXX-340	72.65	71-36-3	BUTYL ALCOHOL	30	21.80	BOTTLE	R
187	49	ITW FLUID PRODUCTS GROUP	YELLOW DXX-526, DLT, DXX-340	72.65	64-17-5	ETHYL ALCOHOL	30	21.80	BOTTLE	R
188	49	ITW FLUID PRODUCTS GROUP	YELLOW DXX-526, DLT, DXX-340	72.65	9004-70-0	NITROCELLULOSE	10	7.27	BOTTLE	R
189	49	ITW FLUID PRODUCTS GROUP	YELLOW DXX-526, DLT, DXX-340	72.65	7440-47-3	CHROMIUM	5	3.63	BOTTLE	R
190	49	ITW FLUID PRODUCTS GROUP	YELLOW DXX-526, DLT, DXX-340	72.65	141-78-6	ETHYL ACETATE	5	3.63	BOTTLE	R
191	49	ITW FLUID PRODUCTS GROUP	YELLOW DXX-526, DLT, DXX-340	72.65	67-63-0	ISOPROPYL ALCOHOL	5	3.63	BOTTLE	R
192	49	ITW FLUID PRODUCTS GROUP	YELLOW DXX-526, DLT, DXX-340	72.65	7439-92-1	LEAD	5	3.63	BOTTLE	R
193	49	ITW FLUID PRODUCTS GROUP	YELLOW DXX-526, DLT, DXX-340	72.65	109-60-4	PROPYL ACETATE	5	3.63	BOTTLE	R
194	49	ITW FLUID PRODUCTS GROUP	YELLOW DXX-526, DLT, DXX-340	72.65	13463-67-7	TITANIUM DIOXIDE	5	3.63	BOTTLE	R
195	49	ITW FLUID PRODUCTS GROUP	YELLOW DXX-526, DLT, DXX-340	72.65	108-88-3	TOLUENE	5	3.63	BOTTLE	R
196	50	ITW FLUID PRODUCTS GROUP	HI-SPOT BLUE #107	5.00		MARKING MIXTURE	100	5.00	TUBE	F & R
197	51	ITW FLUID PRODUCTS GROUP	STEEL BLUE; DX-100	70.15	123-86-4	BUTYL ACETATE	50	35.07	GLASS BOTTLE	F & R
198	51	ITW FLUID PRODUCTS GROUP	STEEL BLUE; DX-100	70.15	64-17-5	ETHYL ALCOHOL	50	35.07	GLASS BOTTLE	F & R
199	51	ITW FLUID PRODUCTS GROUP	STEEL BLUE; DX-100	70.15	71-36-3	BUTYL ALCOHOL	5	3.51	GLASS BOTTLE	F & R
200	51	ITW FLUID PRODUCTS GROUP	STEEL BLUE; DX-100	70.15	67-63-0	ISOPROPYL ALCOHOL	5	3.51	GLASS BOTTLE	F & R

COPYRIGHT, 2000, VANGUARD ENVIRONMENTAL, INC.

CHEM ID	PHYSICAL STATE	SAFETY, HEALTH AND INDUSTRIAL HYGIENE: NFPA 704/ FPRACH/ GLOES	OSHA PEL 29 CFR 1910.1000 (AIR CONTAMINANTS) (547)	ACGIH* TLV	CARCINOGEN (392) MUTAGEN, TERATOGEN. / CALIF. SDWA PROP 65 (542)	SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT, TITLE III/EPCRA: 302 EHS (375)	304 CERCLA (775) / SPCC PLAN	311/312 HAZCOM (UNLTD)	313 "FORM R" (586) / EXEC. ORDER "12856"	STORM WATER RUNOFF/ WATER PRIORITY (273) / OPA '90	TSCA (78000) "FORM U" (510)	RCRA HAZ WASTE (586)	CLEAN AIR ACT AMENDMENTS (MAJOR AND MINOR SOURCES): RISK MGMT PROGRAM 112(r) (160)	CLEAN AIR ACT I, III, IV, VI (187 HAPS) / MACT 112(g)	PROCESS SAFETY MGMT (130)	DOT / DOT RQ (1100)
184	S	A@LES	0.1 mg/m^3	0.1 mg/m^3		TPQ 100	RQ 1 SPCC	10000	313	SWR				III		4.1, 6.1 1
185	L	F/A@LES	150 ppm 710 mg/m^3	150 ppm		TPQ	RQ 5000	10000			FORM U					3.2 5000
186	L	F/A@LES	100 ppm 300 mg/m^3			TPQ	RQ 5000	10000	313		FORM U	U031				
187	L	F/A@LES	1000 ppm 1900 mg/m^3	1000 ppm	C, ST	TPQ	RQ	10000								3.2
188	L	F/A@LES				TPQ	RQ	10000							2500	
189	L	F/A@LES	0.5 mg/m^3	0.5 mg/m^3	C PROP 65	TPQ	RQ 5000	10000	313	SWR				III		5000
190	L	F/A@LES	400 ppm 1400 mg/m^3	400 ppm		TPQ	RQ 5000	10000			FORM U	U112				3.2 5000
191	L	F/A@LES	400 ppm 980 mg/m^3	400 ppm		TPQ	RQ	10000	313		FORM U					3.2
192	L	F/A@LES	§1910.1025	0.15 mg/m^3	SC PROP 65	TPQ	RQ 10	10000	313	SWR				III		1
193	L	F/A@LES	200 ppm 840 mg/m^3	200 ppm		TPQ	RQ	10000								3.2
194	L	F/A@LES	15 mg/m^3 *	10 mg/m^3	C	TPQ	RQ	10000								
195	L	F/A@LES	200 ppm	50 ppm	T PROP 65	TPQ	RQ 1000	10000	313	SWR		U220		III		3.2 1000
196	PST	A@LES				TPQ	RQ	10000								
197	L	F/A@LES	150 ppm 710 mg/m^3	150 ppm		TPQ	RQ 5000	10000			FORM U					3.2 5000
198	L	F/A@LES	1000 ppm 1900 mg/m^3	1000 ppm	C, ST	TPQ	RQ	10000								3.2
199	L	F/A@LES	100 ppm 300 mg/m^3			TPQ	RQ 5000	10000	313		FORM U	U031				
200	L	F/A@LES	400 ppm 980 mg/m^3	400 ppm		TPQ	RQ	10000	313		FORM U					3.2

[illegible]
C=CARCINOGEN
M=MUTAGEN
T=TERATOGEN
S+_=SUSPECTED

PST=PASTE A=ACUTE E=EYES
SP=SOLID CH=CHRONIC S=SKIN
PARTICLE

*ACGIH - AMERICAN CONFERENCE OF GOVERNMENTAL INDUSTRIAL HYGIENISTS

T - TOXIC
F - FLAMMABLE
R - REACTIVE

TITLE I: ___ VOC'S
TITLE III: 187 AIR TOXICS HAPS
TITLE IV: ACID RAIN DEPOSITORS
TITLE VI: ODC'S (CL. I-22, CL II-34)

CHEM ID	MSDS NO.	MANUFACTURER NAME	PRODUCT NAME	MAXIMUM WEIGHT	CAS NUMBER	CHEMICAL NAME	%	CHEMICAL WEIGHT	CONTAINER	AREA
201	51	ITW FLUID PRODUCTS GROUP	STEEL BLUE; DX-100	70.15	9004-70-0	NITROCELLULOSE	5	3.51	GLASS BOTTLE	E & R
202	51	ITW FLUID PRODUCTS GROUP	STEEL BLUE; DX-100	70.15	109-60-4	PROPYL ACETATE	5	3.51	GLASS BOTTLE	E & R
203	52	ITW FLUID PRODUCTS GROUP	STEEL RED; DX-986, DX-296; RED DL	70.15	123-86-4	BUTYL ACETATE	50	35.07	GLASS BOTTLE	E & R
204	52	ITW FLUID PRODUCTS GROUP	STEEL RED; DX-986, DX-296; RED DL	70.15	64-17-5	ETHYL ALCOHOL	50	35.07	GLASS BOTTLE	E & R
205	52	ITW FLUID PRODUCTS GROUP	STEEL RED; DX-986, DX-296; RED DL	70.15	123-42-2	2-PENTANONE, 4-HYDROXY-4-METHYL-	5	3.51	GLASS BOTTLE	E & R
206	52	ITW FLUID PRODUCTS GROUP	STEEL RED; DX-986, DX-296; RED DL	70.15	71-36-3	BUTYL ALCOHOL	5	3.51	GLASS BOTTLE	E & R
207	52	ITW FLUID PRODUCTS GROUP	STEEL RED; DX-986, DX-296; RED DL	70.15	7440-48-4	COBALT	5	3.51	GLASS BOTTLE	E & R
208	52	ITW FLUID PRODUCTS GROUP	STEEL RED; DX-986, DX-296; RED DL	70.15	67-63-0	ISOPROPYL ALCOHOL	5	3.51	GLASS BOTTLE	E & R
209	52	ITW FLUID PRODUCTS GROUP	STEEL RED; DX-986, DX-296; RED DL	70.15	9004-70-0	NITROCELLULOSE	5	3.51	GLASS BOTTLE	E & R
210	52	ITW FLUID PRODUCTS GROUP	STEEL RED; DX-986, DX-296; RED DL	70.15	109-60-4	PROPYL ACETATE	5	3.51	GLASS BOTTLE	E & R
211	53	SEALED AIR CORPORATION	INSTAPAK® PORT CLEANER	5.00	96-48-0	DIHYDRO-2(3H)-FURANONE	97	4.85	GLASS BOTTLE	O
212	53	SEALED AIR CORPORATION	INSTAPAK® PORT CLEANER	5.00	124-38-9	CARBON DIOXIDE	3	0.15	GLASS BOTTLE	O
213	54	SEALED AIR CORPORATION	HOLSTER/INSTAPACKER™ SOLVENT	5.00	25498-49-1	TRIPROPYLENE GLYCOL METHYL ETHER	99	4.95	CAN	O
214	56	DOW CORNING CORPORATION	MOLYKOTE® G-N PASTE	20.00		ORGANIC GREASE MIXTURE	100	20.00	TUBE	D & E
215	57	DOW CORNING CORPORATION	MOLYKOTE® 1000 ANTI-SEIZE LUBRICANT	5.00		LUBRICANT MIXTURE	100	5.00	CAN	E
216	58	FRANKLIN OIL CORPORATION	RUST FOIL L-492 SPEC.	140.30	64742-52-5	DISTILLATES, PETROLEUM, HYDROTREATED HEAVY NAPHTHENIC	100	140.30	STEEL DRUM	O
217	58	FRANKLIN OIL CORPORATION	RUST FOIL L-492 SPEC.	140.30	8052-41-3	STODDARD SOLVENT	100	140.30	STEEL DRUM	O

COPYRIGHT 2000, VANGUARD ENVIRONMENTAL, INC.
TULSA, OK

CHEM ID	PHYSICAL STATE	SAFETY, HEALTH AND INDUSTRIAL HYGIENE: NFPA 704/ FPRACH/ GLOES	OSHA PEL 29 CFR 1910.1000 (AIR CONTAMINANTS) (547)	ACGIH* TLV	CARCINOGEN (392) MUTAGEN, TERATOGEN / CALIF. SDWA PROP 65 (542)	SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT, TITLE III/EPCRA: 302 EHS (375)	304 CERCLA (775) / SPCC PLAN	311/312 HAZCOM (UNLTD)	313 "FORM R" (586) / EXEC. ORDER "12856"	STORM WATER RUNOFF/ WATER PRIORITY (273) / OPA '90	TSCA (78000) "FORM U" (510)	RCRA HAZ WASTE (586)	CLEAN AIR ACT AMENDMENTS (MAJOR AND MINOR SOURCES): RISK MGMT PROGRAM 112(r) (160)	CLEAN AIR ACT I, III, IV, VI (187 HAPS) / MACT 112(g)	PROCESS SAFETY MGMT (130)	DOT / DOT RQ (1100)
201	L	F/A@LES				TPQ	RQ	10000							2500	
202	L	F/A@LES	200 ppm 840 mg/m^3	200 ppm		TPQ	RQ	10000								3.2
203	L	F/A@LES	150 ppm 710 mg/m^3	150 ppm		TPQ	RQ 5000	10000			FORM U					3.2 5000
204	L	F/A@LES	1000 ppm 1900 mg/m^3	1000 ppm	C, ST	TPQ	RQ	10000								3.2
205	L	F/A@LES	50 ppm 240 mg/m^3	50 ppm		TPQ	RQ	10000								3.3
206	L	F/A@LES	100 ppm 300 mg/m^3			TPQ	RQ 5000	10000	313		FORM U	U031				
207	L	F/A@LES	0.1 mg/m^3	0.05 mg/m^3	C PROP 65	TPQ	RQ	10000	313					III		
208	L	F/A@LES	400 ppm 980 mg/m^3	400 ppm		TPQ	RQ	10000	313		FORM U					3.2
209	L	F/A@LES				TPQ	RQ	10000							2500	
210	L	F/A@LES	200 ppm 840 mg/m^3	200 ppm		TPQ	RQ	10000								3.2
211	L	1-2-0 A@LES				TPQ	RQ	10000								
212	L	1-2-0 A@LES	5000 ppm 9000 mg/m^3	5000 ppm		TPQ	RQ	10000								2.2
213	L	0-1-0 A@LES				TPQ	RQ	10000						III		
214	PST	1-1-0 A@LES				TPQ	RQ	10000								
215	PST	1-1-0 A@ES				TPQ	RQ	10000								
216	L	A@LES				TPQ	RQ	10000						III		
217	L	A@LES	500 ppm 2900 mg/m^3	100 ppm		TPQ	RQ	10000								

S-SOLID F-FIRE G-GENES
D-LIQUID P-PRESSURE L-LUNGS
G-GAS R-REACTIVE O-ORGANS
PST-PASTE A-ACUTE E-EYES
SP-SOLID CH-CHRONIC S-SKIN
PARTICLE

C-CARCINOGEN
M-MUTAGEN
T-TERATOGEN
S+_=SUSPECTED

*ACGIH - AMERICAN CONFERENCE OF GOVERNMENTAL INDUSTRIAL HYGIENISTS

T - TOXIC
F - FLAMMABLE
R - REACTIVE

TITLE I: ___ VOC'S
TITLE III: 187 AIR TOXICS HAPS
TITLE IV: ACID RAIN DEPOSITORS
TITLE VI: ODC'S (CL. I-22, CL II-34)

CHEM ID	MSDS NO.	MANUFACTURER NAME	PRODUCT NAME	MAXIMUM WEIGHT	CAS NUMBER	CHEMICAL NAME	%	CHEMICAL WEIGHT	CONTAINER	AREA
218	59	FRANKLIN OIL CORPORATION	RUST FOIL 2675	111.86	64742-53-6	DISTILLATES, PETROLEUM, HYDROTREATED LIGHT NAPHTHENIC	100	111.86	POLY DRUM	O
219	60	REFRACTORY PRODUCTS COMPANY	RPC2100, RPC2300	100.00	12183-80-1	ALUMINOSILICATE	95	95.00	RAW	G
220	60	REFRACTORY PRODUCTS COMPANY	RPC2100, RPC2300	100.00	7631-86-9	SILICON DIOXIDE	65	65.00	RAW	G
221	60	REFRACTORY PRODUCTS COMPANY	RPC2100, RPC2300	100.00	14464-46-1	CRISTOBALITE	60	60.00	RAW	G
222	61	HOUGHTON INTERNATIONAL, INC.	HOUGHTO-QUENCH G	25,721.08	64742-55-8	DISTILLATES HYDROTREATED LIGHT PARAFFIN	60	15,432.65	STEEL DRUM	G & J
223	61	HOUGHTON INTERNATIONAL, INC.	HOUGHTO-QUENCH G	25,721.08	64741-88-4	SOLVENT REFINED HEAVY PARAFFINIC DISTILLATES	30	7,716.32	STEEL DRUM	G & J
224	61	HOUGHTON INTERNATIONAL, INC.	HOUGHTO-QUENCH G	25,721.08	8020-83-5	HYDROCARBON OILS	10	2,572.11	STEEL DRUM	G & J
225	62	SUNSHINE MAKERS, INC.	SIMPLE GREEN (OIL DISPERSANT)	12.00	111-76-2	2-BUTOXYETHANOL	2	0.24	GLASS BOTTLE	E
226	63	NORTON COMPANY	VITRIFIED BONDED-ABRASIVE PRODUCTS	100.00	1344-28-1	ALUMINUM OXIDE	96	96.00	RAW	D, P & U
227	63	NORTON COMPANY	VITRIFIED BONDED-ABRASIVE PRODUCTS	100.00	409-21-2	SILICON CARBIDE	96	96.00	RAW	D, P & U
228	63	NORTON COMPANY	VITRIFIED BONDED-ABRASIVE PRODUCTS	100.00	7704-34-9	SULFUR	41	41.00	RAW	D, P & U
229	63	NORTON COMPANY	VITRIFIED BONDED-ABRASIVE PRODUCTS	100.00		GLASS BOND MIXTURE	30	30.00	RAW	D, P & U
230	65	THE TOLBER DIVISION	MICCROSTOP	7.93	78-93-3	METHYL ETHYL KETONE	75	5.95	CAN	C
231	65	THE TOLBER DIVISION	MICCROSTOP	7.93	75-56-9	PROPYLENE OXIDE	7	0.56	CAN	C
232	66	AGA GAS, INC.	NITROGEN, REFRIGERATED LIQUID	24,301.41	7727-37-9	NITROGEN	100	24,301.41	AST	J
233	67	VAN WATERS & ROGERS, INC.	CAUSTIC SODA ANHYDROUS (ALL GRADES)	50.00	1310-73-2	SODIUM HYDROXIDE	98.2	49.10	BAG	C
234	67	VAN WATERS & ROGERS, INC.	CAUSTIC SODA ANHYDROUS (ALL GRADES)	50.00	7647-14-5	SODIUM CHLORIDE	1.2	0.60	BAG	C

COPYRIGHT 2000, VANGUARD ENVIRONMENTAL, INC.

CHEM ID	PHYSICAL STATE	SAFETY, HEALTH AND INDUSTRIAL HYGIENE: NFPA 704/ FPRACH/ GLOES	OSHA PEL 29 CFR 1910.1000 (AIR CONTAMINANTS) (547)	ACGIH* TLV	CARCINOGEN (392) MUTAGEN, TERATOGEN / CALIF. SDWA PROP 65 (542)	SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT, TITLE III/EPCRA: 302 EHS (375)	304 CERCLA (775) / SPCC PLAN	311/312 HAZCOM (UNLTD)	313 "FORM R" (586) / EXEC. ORDER "12856"	STORM WATER RUNOFF/ WATER PRIORITY (273) / OPA '90	TSCA (78000) "FORM U" (510)	RCRA HAZ WASTE (586)	CLEAN AIR ACT AMENDMENTS (MAJOR AND MINOR SOURCES): RISK MGMT PROGRAM 112(r) (160)	CLEAN AIR ACT I, III, IV, VI (187 HAPS) / MACT 112(g)	PROCESS SAFETY MGMT (130)	DOT / DOT RQ (1100)
218	L	A@LES				TPQ	RQ	10000						III		
219	S	1-0-0 A@LES				TPQ	RQ	10000								
220	S	1-0-0 A@LES	6 mg/m^3	10 mg/m^3	SC	TPQ	RQ	10000								
221	S	1-0-0 A@LES				TPQ	RQ	10000								
222	L	1-1-0 A@LES				TPQ	RQ SPCC	10000 311/312								
223	L	1-1-0 A@LES				TPQ	RQ SPCC	10000 311/312								
224	L	1-1-0 A@LES				TPQ	RQ SPCC	10000 311/312								
225	L		50 ppm 240 mg/m^3			TPQ	RQ	10000	313					III		
226	S	1-0-0 A@LES	15 mg/m^3 *	10 mg/m^3		TPQ	RQ	10000	313							
227	S	1-0-0 A@LES	15 mg/m^3 *	10 mg/m^3		TPQ	RQ	10000								
228	S	1-0-0 A@LES				TPQ	RQ	10000								
229	S	1-0-0 A@LES				TPQ	RQ	10000								
230	L	3-3-0 F/A@LES	200 ppm 590 mg/m^3	200 ppm		TPQ	RQ 5000	10000	313		FORM U	U159		III		3.2 5000
231	L	3-3-0 F/A@LES	100 ppm 240 mg/m^3	20 ppm	SC PROP 65	TPQ 10000	RQ 100	10000	313	SWR	FORM U		10000 T / F	III		3.1 100
232	L	P/A@L				TPQ	RQ SPCC	10000 311/312								
233	S	3-0-2 R/A@LES	2 mg/m^3	2 mg/m^3		TPQ	RQ 1000	10000								8 1000
234	S	3-0-2 R/A@LES				TPQ	RQ	10000								

S=SOLID F=FIRE G=GENES
L=LIQUID P=PRESSURE L=LUNGS
G=GAS R=REACTIVE O=ORGANS
PST=PASTE A=ACUTE E=EYES
SP=SOLID CH=CHRONIC S=SKIN
PARTICLE

C=CARCINOGEN
M=MUTAGEN
T=TERATOGEN
S+_=SUSPECTED

*ACGIH - AMERICAN CONFERENCE OF GOVERNMENTAL INDUSTRIAL HYGIENISTS

T - TOXIC
F - FLAMMABLE
R - REACTIVE

TITLE I: ___ VOC'S
TITLE III: 187 AIR TOXICS HAPS
TITLE IV: ACID RAIN DEPOSITORS
TITLE VI: ODC'S (CL. I-22, CL II-34)

CHEM ID	MSDS NO.	MANUFACTURER NAME	PRODUCT NAME	MAXIMUM WEIGHT	CAS NUMBER	CHEMICAL NAME	%	CHEMICAL WEIGHT	CONTAINER	AREA
235	67	VAN WATERS & ROGERS, INC.	CAUSTIC SODA ANHYDROUS (ALL GRADES)	50.00	497-19-8	SODIUM CARBONATE	1	0.50	BAG	C
236	68	VAN WATERS & ROGERS, INC.	SODIUM CARBONATE	50.00	497-19-8	SODIUM CARBONATE	99.8	49.90	GLASS BOTTLE	C
237	69	BRUSH WELLMAN ENGINEERING	COPPER BERYLLIUM WROUGHT ALLOYS	168.00	7440-50-8	COPPER	92.8	155.90	RAW	F
238	69	BRUSH WELLMAN ENGINEERING	COPPER BERYLLIUM WROUGHT ALLOYS	168.00	7440-02-0	NICKEL	22	36.96	RAW	F
239	69	BRUSH WELLMAN ENGINEERING	COPPER BERYLLIUM WROUGHT ALLOYS	168.00	7440-48-4	COBALT	2.7	4.54	RAW	F
240	69	BRUSH WELLMAN ENGINEERING	COPPER BERYLLIUM WROUGHT ALLOYS	168.00	7440-41-7	BERYLLIUM	2	3.36	RAW	F
241	69	BRUSH WELLMAN ENGINEERING	COPPER BERYLLIUM WROUGHT ALLOYS	168.00	7440-67-7	ZIRCONIUM	0.3	0.50	RAW	F
242	70	MALLINCKRODT BAKER, INC.	TOLUENE	43.09	108-88-3	TOLUENE	100	43.09	STEEL DRUM & GLASS BOTTLE	C
243	71	MAN-GILL CHEMICAL	POWER STRIP 720	2,820.97	122-99-6	ETHYLENE GLYCOL PHENYL ETHER	90	2,538.87	POLY DRUM & AST	C
244	72	MONROE FLUID TECHNOLOGY	COOL TOOL	417.97		COOL TOOL MIXTURE	100	417.97	STEEL DRUM	A & B
245	73	EVANS MANUFACTURING, INC.	PEEL COAT - TYPE I	200.00		ETHYLCELLULOSE MIXTURE	100	200.00	BOX	O
246	74	DETREX CORPORATION	DETREX YELLOW GEAR MARKING COMPOUND	75.16	64741-44-2	DISTILLATES, PETROLEUM, STRAIGHT-RUN MIDDLE	30	22.55	CAN	V
247	75	SEALED AIR CORPORATION	INSTAPAK® -40W COMPONENT "B"	701.48	56-81-5	GLYCEROL	7	49.10	STEEL DRUM	O
248	75	SEALED AIR CORPORATION	INSTAPAK® -40W COMPONENT "B"	701.48		AMINE CATALYST MIXTURE	3	21.04	STEEL DRUM	O
249	76	SEALED AIR CORPORATION	INSTAPAK® COMPONENT "A"	828.42	9016-87-9	(Z,Z)-9,12-OCTADECADIENOIC ACID, DIMER, POLYMER WITH 3,3'-[OXYBIS(2,1-	100	828.42	STEEL DRUM	O
250	76	SEALED AIR CORPORATION	INSTAPAK® COMPONENT "A"	828.42	101-68-8	METHYLENEBIS(PHENYLISOCYANATE)	45	372.79	STEEL DRUM	O
251	77	ULTRAMATIC EQUIPMENT COMPANY	LR-600-S	16.70	67-63-0	ISOPROPYL ALCOHOL	1	0.17	POLY JUG	B

COPYRIGHT 2000, VANGUARD ENVIRONMENTAL, INC.

CHEM. ID	PHYSICAL STATE	SAFETY, HEALTH AND INDUSTRIAL HYGIENE: NFPA 704/ FPRACH/ GLOES	OSHA PEL* 29 CFR 1910.1000 (AIR CONTAMINANTS) (547)	ACGIH* TLV	CARCINOGEN (592) MUTAGEN, TERATOGEN / CALIF. SDWA PROP 65 (542)	SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT, TITLE III/EPCRA: 302 EHS (375)	304 CERCLA (775)	SPCC PLAN	311/312 HAZCOM (UNLTD)	313 "FORM R" (586) / EXEC. ORDER "12856"	STORM WATER RUNOFF/ WATER PRIORITY (273) / OPA '90	TSCA (78000) "FORM U" (510)	RCRA HAZ WASTE (586)	CLEAN AIR ACT AMENDMENTS (MAJOR AND MINOR SOURCES): RISK MGMT PROGRAM 112(r) (160)	CLEAN AIR ACT I, III, IV, VI (187 HAPS) / MACT 112(g)	PROCESS SAFETY MGMT (130)	DOT / DOT RQ (1100)
235	S	3-0-2 R/A@LES				TPQ	RQ		10000								
236	SP	2-0-0 A@LES				TPQ	RQ		10000								
237	S	A/CH@LES	FUME: 0.1 mg/m^3	1 mg/m^3		TPQ	RQ	5000	10000	313	SWR						5000
238	S	A/CH@LES	1 mg/m^3	1 mg/m^3	SC PROP 65	TPQ	RQ	100	10000	313	SWR				III		100
239	S	A/CH@LES	0.1 mg/m^3	0.05 mg/m^3	C PROP 65	TPQ	RQ		10000	313					III		
240	S	A/CH@LES	0.002 mg/m^3	0.002 mg/m^3	SC PROP 65	TPQ	RQ	10	10000	313	SWR		P015		III		6.1, 4.1 10
241	S	A/CH@LES	5 mg/m^3	5 mg/m^3		TPQ	RQ		10000								4.1, 4.2
242	L	2-3-0 F/A/CH@LOES	200 ppm	50 ppm	T PROP 65	TPQ	RQ	1000	10000	313	SWR		U220		III		3.2 1000
243	L	2-1-0 A@LES				TPQ	RQ		10000	313					III		
244	L	1-1-0 A@LES				TPQ	RQ		10000								
245	S					TPQ	RQ		10000								
246	PST	A@ES				TPQ	RQ		10000								
247	L	2-1-0 A@LES	15 mg/m^3 *	10 mg/m^3		TPQ	RQ		10000								
248	L	2-1-0 A@LES				TPQ	RQ		10000								
249	L	2-1-0 A@LES				TPQ	RQ		10000	313#					III		
250	L	2-1-0 A@LES	(C)0.02 ppm (C)0.2 mg/m^3	0.005 ppm		TPQ	RQ	5000	10000	313					III		6.1
251	L	A@LES	400 ppm 980 mg/m^3	400 ppm		TPQ	RQ		10000	313		FORM U					3.2

S-SOLID, L-LIQUID, G-GAS, SP-SOLID PARTICLE, PST-PASTE, F-FIRE, P-PRESSURE, R-REACTIVE, A-ACUTE, CH-CHRONIC, C-CARCINOGEN, M-MUTAGEN, T-TERATOGEN, S-SUSPECTED, G-GENES, L-LUNGS, O-ORGANS, E-EYES, S-SKIN

*ACGIH - AMERICAN CONFERENCE OF GOVERNMENTAL INDUSTRIAL HYGIENISTS

T - TOXIC
F - FLAMMABLE
R - REACTIVE

TITLE I: ___ VOC'S
TITLE III: 187 AIR TOXICS HAPS
TITLE IV: ACID RAIN DEPOSITORS
TITLE VI: ODC'S (CL. I-22, CL. II-34)

CHEM ID	MSDS NO.	MANUFACTURER NAME	PRODUCT NAME	MAXIMUM WEIGHT	CAS NUMBER	CHEMICAL NAME	%	CHEMICAL WEIGHT	CONTAINER	AREA
252	77	ULTRAMATIC EQUIPMENT COMPANY	LR-600-S	16.70	141-43-5	ETHANOLAMINE	0.0001	0.00	POLY BUG	B
253	78	CORAL INTERNATIONAL	CORFILM 14	376.63	64742-88-7	FLASH NAPHTHA	20	75.33	STEEL DRUM	O
254	79	DEGUSSA CORPORATION	DEGUSSA 5600 FOIL (MB565)	10.00	7440-50-8	COPPER	100	10.00	RAW	F
255	79	DEGUSSA CORPORATION	DEGUSSA 5600 FOIL (MB565)	10.00	7440-22-4	SILVER	100	10.00	RAW	F
256	79	DEGUSSA CORPORATION	DEGUSSA 5600 FOIL (MB565)	10.00	7440-31-5	TIN	100	10.00	RAW	F
257	79	DEGUSSA CORPORATION	DEGUSSA 5600 FOIL (MB565)	10.00	7440-66-6	ZINC	100	10.00	RAW	F
258	80	ROYAL LUBRICANTS COMPANY, INC.	ROYCO 885	15.53		LUBRICATING OIL MIXTURE	100	15.53	CAN	O
259	81	STANCHEM, INC.	CORROSION VARNISH	24.00	64-17-5	ETHYL ALCOHOL	26	6.24	CAN	C & G
260	81	STANCHEM, INC.	CORROSION VARNISH	24.00	123-86-4	BUTYL ACETATE	24	5.76	CAN	C & G
261	81	STANCHEM, INC.	CORROSION VARNISH	24.00	71-36-3	BUTYL ALCOHOL	20	4.80	CAN	C & G
262	82	STANCHEM, INC.	THINNER	20.40	71-41-0	1-PENTANOL	58	11.83	CAN	C & H
263	82	STANCHEM, INC.	THINNER	20.40	123-86-4	BUTYL ACETATE	25	5.10	CAN	C & H
264	82	STANCHEM, INC.	THINNER	20.40	64-17-5	ETHYL ALCOHOL	17	3.47	CAN	C & H
265	83	ACHESON COLLOIDS COMPANY	DAG 154	826.75	67-63-0	ISOPROPYL ALCOHOL	50	413.37	STEEL DRUM	J, N & O
266	83	ACHESON COLLOIDS COMPANY	DAG 154	826.75	7782-42-5	GRAPHITE	20	165.35	STEEL DRUM	J, N & O
267	83	ACHESON COLLOIDS COMPANY	DAG 154	826.75	107-98-2	1-METHOXY-2-PROPANOL	5	41.34	STEEL DRUM	J, N & O
268	83	ACHESON COLLOIDS COMPANY	DAG 154	826.75	107-41-5	2-METHYL-2,4-PENTANEDIOL	5	41.34	STEEL DRUM	J, N & O

COPYRIGHT 2000, VANGUARD ENVIRONMENTAL, INC
TULSA, OK.

CHEM ID	PHYSICAL STATE	SAFETY, HEALTH AND INDUSTRIAL HYGIENE: NFPA 704/ FPRACH/ GLOES	OSHA PEL 29 CFR 1910.1000 (AIR CONTAMINANTS) (547)	ACGIH* TLV	CARCINOGEN (391) MUTAGEN, TERATOGEN / CALIF. SDWA PROP 65 (542)	SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT, TITLE III/EPCRA: 302 EHS (375)	304 CERCLA (775) / SPCC PLAN		311/312 HAZCOM (UNLTD)	313 "FORM R" (586) / EXEC. ORDER "12856"	STORM WATER RUNOFF/ WATER PRIORITY (273) / OPA '90	TSCA (78000) "FORM U" (510)	RCRA HAZ WASTE (586)	CLEAN AIR ACT AMENDMENTS (MAJOR AND MINOR SOURCES): RISK MGMT PROGRAM 112(r) (160)	CLEAN AIR ACT I, III, IV, VI (187 HAPS) / MACT 112(g)	PROCESS SAFETY MGMT (130)	DOT / DOT RQ (1100)
252	L	A/@LES	3 ppm 6 mg/m^3	3 ppm		TPQ	RQ		10000								8
253	L	1-2-0 F/A@LES				TPQ	RQ		10000								
254	S	A/CH@LES	FUME: 0.1 mg/m^3	1 mg/m^3		TPQ	RQ	5000	10000	313	SWR						5000
255	S	A/CH@LES	0.01 mg/m^3	0.1 mg/m^3		TPQ	RQ	1000	10000	313	SWR						1000
256	S	A/CH@LES	2 mg/m^3	0.1 mg/m^3		TPQ	RQ		10000								
257	S	A/CH@LES				TPQ	RQ	1000	10000	313	SWR						
258	L	A@ES				TPQ	RQ		10000						III		
259	L	F/A@LES	1000 ppm 1900 mg/m^3	1000 ppm	C, ST	TPQ	RQ		10000								3.2
260	L	F/A@LES	150 ppm 710 mg/m^3	150 ppm		TPQ	RQ	5000	10000			FORM U					3.2 5000
261	L	F/A@LES	100 ppm 300 mg/m^3			TPQ	RQ	5000	10000	313		FORM U	U031				
262	L	F/A@LES				TPQ	RQ		10000								
263	L	F/A@LES	150 ppm 710 mg/m^3	150 ppm		TPQ	RQ	5000	10000			FORM U					3.2 5000
264	L	F/A@LES	1000 ppm 1900 mg/m^3	1000 ppm	C, ST	TPQ	RQ		10000								3.2
265	L	F/A@LES	400 ppm 980 mg/m^3	400 ppm		TPQ	RQ		10000	313		FORM U					3.2
266	L	F/A@LES	**			TPQ	RQ		10000								
267	L	F/A@LES	100 ppm	100 ppm		TPQ	RQ		10000								
268	L	F/A@LES	25 ppm	25 ppm		TPQ	RQ		10000								

S=SOLID, L=LIQUID, G=GAS, PST=PASTE, SP=SOLID PARTICLE
F=FIRE, P=PRESSURE, R=REACTIVE, A=ACUTE, CH=CHRONIC
G=GENES, L=LUNGS, O=ORGANS, E=EYES, S=SKIN
C=CARCINOGEN, M=MUTAGEN, T=TERATOGEN, S+_=SUSPECTED

T - TOXIC
F - FLAMMABLE
R - REACTIVE

TITLE I: ____ VOC'S
TITLE III: 187 AIR TOXICS HAPS
TITLE IV: ACID RAIN DEPOSITORS
TITLE VI: ODC'S (CL. I-22, CL. II-34)

*ACGIH - AMERICAN CONFERENCE OF GOVERNMENTAL INDUSTRIAL HYGIENISTS

CHEM ID	MSDS NO.	MANUFACTURER NAME	PRODUCT NAME	MAXIMUM WEIGHT	CAS NUMBER	CHEMICAL NAME	%	CHEMICAL WEIGHT	CONTAINER	AREA
269	83	ACHESON COLLOIDS COMPANY	DAG 154	826.75	71-36-3	BUTYL ALCOHOL	5	41.34	STEEL DRUM	J, N & O
270	83	ACHESON COLLOIDS COMPANY	DAG 154	826.75		THICKENER MIXTURE	5	41.34	STEEL DRUM	J, N & O
271	85	SHELL OIL COMPANY	ISOPROPYL ALCOHOL	1,811.96	67-63-0	ISOPROPYL ALCOHOL	100	1,811.96	STEEL DRUM	C & J
272	86	METHANEX CORPORATION	METHANOL	1,828.03	67-56-1	METHYL ALCOHOL	99.85	1,825.29	STEEL DRUM	C & J
273	87	BOC GASSES	ARGOSHIELD GAS #50A, #75 AND #75A	3.34	7440-37-1	ARGON	75	2.50	STEEL CYLINDER	E
274	87	BOC GASSES	ARGOSHIELD GAS #50A, #75 AND #75A	3.34	7440-59-7	HELIUM	75	2.50	STEEL CYLINDER	F
275	88	BOC GASSES	ARGOSHIELD #25C	33.35	7440-37-1	ARGON	95	31.68	STEEL CYLINDER	E
276	88	BOC GASSES	ARGOSHIELD #25C	33.35	124-38-9	CARBON DIOXIDE	85	28.34	STEEL CYLINDER	F
277	89	LAROCHE INDUSTRIES, INC.	AMMONIA	450.00	7664-41-7	AMMONIA	99.5	447.75	CYLINDER	C & H
278	89	LAROCHE INDUSTRIES, INC.	AMMONIA	450.00		OIL MIXTURE	0.1	0.45	CYLINDER	C & H
279	90	PURITAN-BENNETT CORPORATION	ARGON	33.35	7440-37-1	ARGON	95	31.68	STEEL CYLINDER	E
280	92	PURITAN-BENNETT CORPORATION	GASEOUS OXYGEN	160.26	7782-44-7	OXYGEN	99.5	159.46	STEEL CYLINDER	F & G
281	93	PERKINS PRODUCTS, INC.	PERKUT 955	401.16	64742-54-7	HYDROTREATED HEAVY PARAFFINIC DISTILLATE	95	381.10	STEEL DRUM	O & P
282	93	PERKINS PRODUCTS, INC.	PERKUT 955	401.16	68425-16-1	DI-TERT-NONYL POLYSULFIDES	10	40.12	STEEL DRUM	O & P
283	94	PERKINS PRODUCTS, INC.	PERCHEM 1140	6,558.04	64742-47-8	ALIPHATIC PETROLEUM DISTILLATES	100	6,558.04	AST	PLANT WIDE
284	95	PERKINS PRODUCTS, INC.	PERKOTE 30-353-AG	6,985.61	64742-47-8	ALIPHATIC PETROLEUM DISTILLATES	55	3,842.09	AST	PLANT WIDE
285	95	PERKINS PRODUCTS, INC.	PERKOTE 30-353-AG	6,985.61	64742-53-6	DISTILLATES, PETROLEUM, HYDROTREATED LIGHT NAPHTHENIC	25	1,746.40	AST	PLANT WIDE

COPYRIGHT 2000, VANGUARD ENVIRONMENTAL, INC.

CHEM ID	PHYSICAL STATE	NFPA 704/ FPRACH/ GLOES	SAFETY, HEALTH AND INDUSTRIAL HYGIENE: OSHA PEL 29 CFR 1910.1000 (AIR CONTAMINANTS) (547)	ACGIH* TLV	CARCINOGEN (392) MUTAGEN, TERATOGEN / CALIF. SDWA PROP 65 (542)	SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT, TITLE III/EPCRA: 302 EHS (375)	304 CERCLA (775) / SPCC PLAN	311/312 HAZCOM (UNLTD)	313 "FORM R" (586) / EXEC. ORDER "12856"	STORM WATER RUNOFF/ WATER PRIORITY (273) / OPA '90	TSCA (78000) "FORM U" (510)	RCRA HAZ WASTE (586)	CLEAN AIR ACT AMENDMENTS (MAJOR AND MINOR SOURCES): RISK MGMT PROGRAM 112(r) (160)	CLEAN AIR ACT I, III, IV, VI (187 HAPS) / MACT 112(g)	PROCESS SAFETY MGMT (130)	DOT / DOT RQ (1100)
269	L	F/A@LES	100 ppm 300 mg/m^3			TPQ	RQ 5000	10000	313		FORM U	U031				
270	L	F/A@LES				TPQ	RQ	10000								
271	L	1-3-0 F/A@LES	400 ppm 980 mg/m^3	400 ppm		TPQ	RQ	10000	313		FORM U					3.2
272	L	1-3-0 F/A/CH@LES	200 ppm 260 mg/m^3	200 ppm		TPQ	RQ 5000	10000	313			U154		III		3.2 5000
273	G	0-0-0 P/A@L				TPQ	RQ	10000								
274	G	0-0-0 P/A@L				TPQ	RQ	10000								
275	G	1-0-0 P/A@L				TPQ	RQ	10000								
276	G	1-0-0 P/A@L	5000 ppm 9000 mg/m^3	5000 ppm		TPQ	RQ	10000								2.2
277	L	3-1-0 A@LES	50 ppm 35 mg/m^3	25 ppm		TPQ 500	RQ 100	10000	313	SWR			10000 T		10000	2.2, 2.3 100
278	L	3-1-0 A@LES				TPQ	RQ	10000						III		
279	G	P/A@L				TPQ	RQ	10000								
280	G	P/A@L				TPQ	RQ	10000								
281	L	1-1-0 A@LS				TPQ	RQ	10000						III		
282	L	1-1-0 A@LS				TPQ	RQ	10000								
283	L	1-2-0 F/A@LES				TPQ	RQ SPCC	10000								
284	L	1-2-0 F/A@LES				TPQ	RQ SPCC	10000								
285	L	1-2-0 F/A@LES				TPQ	RQ SPCC	10000						III		

S=SOLID, L=LIQUID, G=GAS, PST=PASTE, SP=SOLID PARTICLE
F=FIRE, P=PRESSURE, R=REACTIVE, A=ACUTE, CH=CHRONIC
G=GENES, L=LUNGS, O=ORGANS, E=EYES, S=SKIN
C=CARCINOGEN, M=MUTAGEN, T=TERATOGEN, B+_=SUSPECTED

T - TOXIC
F - FLAMMABLE
R - REACTIVE

TITLE I: ___ VOC'S
TITLE III: 187 AIR TOXICS HAPS
TITLE IV: ACID RAIN DEPOSITORS
TITLE VI: ODC'S (CL. I-22, CL II-34)

*ACGIH - AMERICAN CONFERENCE OF GOVERNMENTAL INDUSTRIAL HYGIENISTS

CHEM ID	MSDS NO.	MANUFACTURER NAME	PRODUCT NAME	MAXIMUM WEIGHT	CAS NUMBER	CHEMICAL NAME	%	CHEMICAL WEIGHT	CONTAINER	AREA
286	95	PERKINS PRODUCTS, INC.	PERKOTE 30-353-AG	6,985.61	64741-96-4	SEVERELY SOLVENT REFINED PETROLEUM DISTILLATES	15	1,047.84	AST	PLANT WIDE
287	96	PERKINS PRODUCTS, INC.	PERCHEM 1130	6.68	64742-81-0	KEROSINE, PETROLEUM, HYDRODESULFURIZED	100	6.68	CAN	B & C
288	97	PERKINS PRODUCTS, INC.	PERLUBE RO-68	22,059.17	64742-54-7	HYDROTREATED HEAVY PARAFFINIC DISTILLATE	100	22,059.17	STEEL DRUM	C, I & O
289	98	PERKINS PRODUCTS, INC.	PERCHEM 1330	1,488.42	1310-58-3	POTASSIUM HYDROXIDE	15	223.26	STEEL DRUM	C, I & V
290	98	PERKINS PRODUCTS, INC.	PERCHEM 1330	1,488.42	10101-89-0	SODIUM PHOSPHATE, TRIBASIC	10	148.84	STEEL DRUM	C, I & V
291	98	PERKINS PRODUCTS, INC.	PERCHEM 1330	1,488.42	26680-54-6	2,5-FURANDIONE, DIHYDRO-3-(OCTENYL)-	5	74.42	STEEL DRUM	C, I & V
292	98	PERKINS PRODUCTS, INC.	PERCHEM 1330	1,488.42	10043-35-3	BORIC ACID	5	74.42	STEEL DRUM	C, I & V
293	98	PERKINS PRODUCTS, INC.	PERCHEM 1330	1,488.42	64-02-8	EDTA TETRASODIUM SALT	5	74.42	STEEL DRUM	C, I & V
294	99	CHICAGO MANUFACTURING AND	EXTREME PRESSURE OIL	39.48	64742-49-0	PETROLEUM HYDROCARBON	66.24	26.15	POLY BOTTLE	F & N
295	99	CHICAGO MANUFACTURING AND	EXTREME PRESSURE OIL	39.48	39464-64-7	POLY(OXY-1,2-ETHANEDIYL), ALPHA.-(DINONYLPHENYL)-.OMEGA.-HYDROXY-	21.69	8.56	POLY BOTTLE	F & N
296	99	CHICAGO MANUFACTURING AND	EXTREME PRESSURE OIL	39.48	64742-52-5	DISTILLATES, PETROLEUM, HYDROTREATED HEAVY NAPHTHENIC	12	4.74	POLY BOTTLE	F & N
297	99	CHICAGO MANUFACTURING AND	EXTREME PRESSURE OIL	39.48		FRAGRANCE MIXTURE	0.02	0.01	POLY BOTTLE	F & N
298	100	CHICAGO MANUFACTURING AND	EXTREME PRESSURE LUBE #3	39.71	64742-49-0	PETROLEUM HYDROCARBON	58.99	23.42	POLY BOTTLE	F & N
299	100	CHICAGO MANUFACTURING AND	EXTREME PRESSURE LUBE #3	39.71	39464-64-7	POLY(OXY-1,2-ETHANEDIYL), ALPHA.-(DINONYLPHENYL)-.OMEGA.-HYDROXY-	21.69	8.61	POLY BOTTLE	F & N
300	100	CHICAGO MANUFACTURING AND	EXTREME PRESSURE LUBE #3	39.71	63231-60-7	MICROCRYSTALLINE WAX	14.3	5.68	POLY BOTTLE	F & N
301	100	CHICAGO MANUFACTURING AND	EXTREME PRESSURE LUBE #3	39.71	65997-13-9	RESIN ACIDS AND ROSIN ACIDS, HYDROGENATED, ESTERS WITH	5	1.99	POLY BOTTLE	F & N
302	100	CHICAGO MANUFACTURING AND	EXTREME PRESSURE LUBE #3	39.71		FRAGRANCE MIXTURE	0.02	0.01	POLY BOTTLE	F & N

© COPYRIGHT 2000, VANGUARD ENVIRONMENTAL, INC.

CHEM ID	PHYSICAL STATE	SAFETY/HEALTH AND INDUSTRIAL HYGIENE: NFPA 704/ EPRACH/ GLOES	OSHA PEL 29 CFR 1910.1000 (AIR CONTAMINANTS) (547)	ACGIH* TLV	CARCINOGEN (392) MUTAGEN, TERATOGEN / CALIF. SDWA PROP 65 (542)	SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT, TITLE III/EPCRA: 302 EHS (375)	304 CERCLA (775) / SPCC PLAN	311/312 HAZCOM (UNLTD)	313 "FORM R" (586) / EXEC. ORDER "12856"	STORM WATER RUNOFF/ WATER PRIORITY (273) / OPA '90	TSCA (78000) "FORM U" (510)	RCRA HAZ WASTE (586)	CLEAN AIR ACT AMENDMENTS (MAJOR AND MINOR SOURCES): RISK MGMT PROGRAM 112(r) (160)	CLEAN AIR ACT I, III, IV, VI (187 HAPS) / MACT 112(g)	PROCESS SAFETY MGMT (130)	DOT / DOT RQ (1100)
286	L	1-2-0 F/A@LES				TPQ	RQ SPCC	10000								
287	L	1-2-0 F/A/CH@LES				TPQ	RQ	10000								
288	L	1-1-0 A@LS				TPQ	RQ SPCC	10000 311/312						III		
289	L	1-0-0 A@LES	2 mg/m^3	2 mg/m^3		TPQ	RQ 1000	10000								8 1000
290	L	1-0-0 A@LES				TPQ	RQ 5000	10000								
291	L	1-0-0 A@LES				TPQ	RQ	10000								
292	L	1-0-0 A@LES				TPQ	RQ	10000								
293	L	1-0-0 A@LES				TPQ	RQ	10000								
294	L	2-1-0 A@LES				TPQ	RQ	10000								
295	L	2-1-0 A@LES				TPQ	RQ	10000								
296	L	2-1-0 A@LES				TPQ	RQ	10000						III		
297	L	2-1-0 A@LES				TPQ	RQ	10000								
298	L	2-1-0 A@LES				TPQ	RQ	10000								
299	L	2-1-0 A@LES				TPQ	RQ	10000								
300	L	2-1-0 A@LES				TPQ	RQ	10000								
301	L	2-1-0 A@LES				TPQ	RQ	10000								
302	L	2-1-0 A@LES				TPQ	RQ	10000								

S=SOLID
L=LIQUID
G=GAS
PST=PASTE
SP=SOLID PARTICLE

F=FIRE
P=PRESSURE
R=REACTIVE
A=ACUTE
CH=CHRONIC

G=GENES
L=LUNGS
O=ORGANS
E=EYES
S=SKIN

C=CARCINOGEN
M=MUTAGEN
T=TERATOGEN
S+_=SUSPECTED

*ACGIH - AMERICAN CONFERENCE OF GOVERNMENTAL INDUSTRIAL HYGIENISTS

T - TOXIC
F - FLAMMABLE
R - REACTIVE

TITLE I: ____ VOC'S
TITLE III: 187 AIR TOXICS HAPS
TITLE IV: ACID RAIN DEPOSITORS
TITLE VI: ODC'S (CL. I-22, CL II-34)

CHEM ID	MSDS NO.	MANUFACTURER NAME	PRODUCT NAME	MAXIMUM WEIGHT	CAS NUMBER	CHEMICAL NAME	%	CHEMICAL WEIGHT	CONTAINER	AREA
303	101	SUNNEN PRODUCTS COMPANY	SUNNEN HONING STONES	100.00	1344-28-1	ALUMINUM OXIDE	55	55.00	BOX	E, P & R
304	101	SUNNEN PRODUCTS COMPANY	SUNNEN HONING STONES	100.00	409-21-2	SILICON CARBIDE	55	55.00	BOX	E, P & R
305	101	SUNNEN PRODUCTS COMPANY	SUNNEN HONING STONES	100.00	6599-71-7	FIBROUS GLASS	10	10.00	BOX	E, P & R
306	101	SUNNEN PRODUCTS COMPANY	SUNNEN HONING STONES	100.00	7429-90-5	ALUMINUM	5	5.00	BOX	E, P & R
307	101	SUNNEN PRODUCTS COMPANY	SUNNEN HONING STONES	100.00	1303-86-2	BORON OXIDE	5	5.00	BOX	E, P & R
308	101	SUNNEN PRODUCTS COMPANY	SUNNEN HONING STONES	100.00	1305-78-8	CALCIUM OXIDE	5	5.00	BOX	E, P & R
309	101	SUNNEN PRODUCTS COMPANY	SUNNEN HONING STONES	100.00	7440-50-8	COPPER	5	5.00	BOX	E, P & R
310	101	SUNNEN PRODUCTS COMPANY	SUNNEN HONING STONES	100.00		FLUORIDE MIXTURE	5	5.00	BOX	E, P & R
311	101	SUNNEN PRODUCTS COMPANY	SUNNEN HONING STONES	100.00	60676-86-0	FUSED SILICA	5	5.00	BOX	E, P & R
312	101	SUNNEN PRODUCTS COMPANY	SUNNEN HONING STONES	100.00	7440-31-5	TIN	5	5.00	BOX	E, P & R
313	101	SUNNEN PRODUCTS COMPANY	SUNNEN HONING STONES	100.00	7439-96-5	MANGANESE	1	1.00	BOX	E, P & R
314	102	MAYWOOD COMPANY	MAYWOOD ACRYL LACQUER THINNER	136.96	108-88-3	TOLUENE	25	34.24	STEEL DRUM	E, K & N
315	102	MAYWOOD COMPANY	MAYWOOD ACRYL LACQUER THINNER	136.96	67-64-1	ACETONE	21	28.76	STEEL DRUM	E, K & N
316	102	MAYWOOD COMPANY	MAYWOOD ACRYL LACQUER THINNER	136.96	67-56-1	METHYL ALCOHOL	21	28.76	STEEL DRUM	E, K & N
317	102	MAYWOOD COMPANY	MAYWOOD ACRYL LACQUER THINNER	136.96	78-93-3	METHYL ETHYL KETONE	9	12.33	STEEL DRUM	E, K & N
318	102	MAYWOOD COMPANY	MAYWOOD ACRYL LACQUER THINNER	136.96	64742-89-8	LIGHT ALIPHATIC SOLVENT NAPHTHA	7	9.59	STEEL DRUM	E, K & N
319	102	MAYWOOD COMPANY	MAYWOOD ACRYL LACQUER THINNER	136.96	110-19-0	ISOBUTYL ACETATE	6	8.22	STEEL DRUM	E, K & N

COPYRIGHT 2000, VANGUARD ENVIRONMENTAL, INC.
TULSA, OK.

CHEM ID	PHYSICAL STATE	SAFETY, HEALTH AND INDUSTRIAL HYGIENE: NFPA 704/ FPRACH/ GLOES	OSHA PEL 29 CFR 1910.1000 (AIR CONTAMINANTS) (547)	ACGIH* TLV	CARCINOGEN (392) MUTAGEN, TERATOGEN / CALIF. SDWA PROP 65 (542)	SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT, TITLE III/EPCRA: 302 EHS (375)	304 CERCLA (775) / SPCC PLAN	311/312 HAZCOM (UNLTD)	313 "FORM R" (586) / EXEC. ORDER "12856"	STORM WATER RUNOFF/ WATER PRIORITY (273) / OPA '90	TSCA (78000) "FORM U" (510)	RCRA HAZ WASTE (586)	CLEAN AIR ACT AMENDMENTS (MAJOR AND MINOR SOURCES): RISK MGMT PROGRAM 112(r) (160)	CLEAN AIR ACT I, III, IV, VI (187 HAPS) / MACT 112(g)	PROCESS SAFETY MGMT (130)	DOT / DOT RQ (1100)
303	S	1-0-0 A@LES	15 mg/m^3 *	10 mg/m^3		TPQ	RQ	10000	313							
304	S	1-0-0 A@LES	15 mg/m^3 *	10 mg/m^3		TPQ	RQ	10000								
305	S	1-0-0 A@LES				TPQ	RQ	10000								
306	S	1-0-0 A@LES	15 mg/m^3 *	5 mg/m^3		TPQ	RQ	10000	313	SWR						4.1, 4.2, 4.3
307	S	1-0-0 A@LES	15 mg/m^3 *	10 mg/m^3		TPQ	RQ	10000								
308	S	1-0-0 A@LES	5 mg/m^3	2 mg/m^3		TPQ	RQ	10000								9
309	S	1-0-0 A@LES	FUME: 0.1 mg/m^3	1 mg/m^3		TPQ	RQ 5000	10000	313	SWR						5000
310	S	1-0-0 A@LES				TPQ	RQ	10000								
311	S	1-0-0 A@LES	0.1 mg/m^3	0.1 mg/m^3		TPQ	RQ	10000								
312	S	1-0-0 A@LES	2 mg/m^3	0.1 mg/m^3		TPQ	RQ	10000								
313	S	1-0-0 A@LES	(C)5 mg/m^3	1 mg/m^3		TPQ	RQ	10000	313					III		
314	L	2-3-0 F/A/CH@LOES	200 ppm	50 ppm	T PROP 65	TPQ	RQ 1000	10000	313	SWR		U220		III		3.2 1000
315	L	2-3-0 F/A/CH@LOES	1000 ppm 2400 mg/m^3	750 ppm	SC	TPQ	RQ 5000	10000			FORM U	U002				3.1 5000
316	L	2-3-0 F/A/CH@LOES	200 ppm 260 mg/m^3	200 ppm		TPQ	RQ 5000	10000	313			U154		III		3.2 5000
317	L	2-3-0 F/A/CH@LOES	200 ppm 590 mg/m^3	200 ppm		TPQ	RQ 5000	10000	313		FORM U	U159		III		3.2 5000
318	L	2-3-0 F/A/CH@LOES				TPQ	RQ	10000						III		
319	L	2-3-0 F/A/CH@LOES	150 ppm 800 mg/m^3	150 ppm		TPQ	RQ 5000	10000								3.2

S=SOLID, F=FIRE, G=GENES, C=CARCINOGEN
L=LIQUID, P=PRESSURE, L=LUNGS, M=MUTAGEN
G=GAS, R=REACTIVE, O=ORGANS, T=TERATOGEN
PST=PASTE, A=ACUTE, E=EYES, S+_=SUSPECTED
SP=SOLID PARTICLE, CH=CHRONIC, S=SKIN

T - TOXIC
F - FLAMMABLE
R - REACTIVE

TITLE I: ___ VOC'S
TITLE III: 187 AIR TOXICS HAPS
TITLE IV: ACID RAIN DEPOSITORS
TITLE VI: ODC'S (CL. I-22, CL II-34)

*ACGIH - AMERICAN CONFERENCE OF GOVERNMENTAL INDUSTRIAL HYGIENISTS

CHEM ID	MSDS NO.	MANUFACTURER NAME	PRODUCT NAME	MAXIMUM WEIGHT	CAS NUMBER	CHEMICAL NAME	%	CHEMICAL WEIGHT	CONTAINER	AREA
320	102	MAYWOOD COMPANY	MAYWOOD ACRYL LACQUER THINNER	136.96	123-86-4	BUTYL ACETATE	5	6.85	STEEL DRUM	E, K & N
321	102	MAYWOOD COMPANY	MAYWOOD ACRYL LACQUER THINNER	136.96	763-69-9	ETHYL-3-ETHOXYPROPIONATE	3	4.11	STEEL DRUM	E, K & N
322	102	MAYWOOD COMPANY	MAYWOOD ACRYL LACQUER THINNER	136.96	1330-20-7	XYLENE	2	2.74	STEEL DRUM	E, K & N
323	103	ULTRACHEM, INC.	ASSEMBLY FLUID #1	5.00	64742-65-0	DISTILLATES, PETROLEUM, SOLVENT-DEWAXED HEAVY PARAFFINIC	60	3.00	POLY BIG	S
324	103	ULTRACHEM, INC.	ASSEMBLY FLUID #1	5.00	64742-54-7	HYDROTREATED HEAVY PARAFFINIC DISTILLATE	60	3.00	POLY BIG	S
325	104	ARCONIUM SPECIALTY ALLOYS	OSTALLOY 158	30.00	7439-92-1	LEAD	27.3	8.19	RAW	Q
326	104	ARCONIUM SPECIALTY ALLOYS	OSTALLOY 158	30.00	7440-31-5	TIN	13.1	3.93	RAW	Q
327	104	ARCONIUM SPECIALTY ALLOYS	OSTALLOY 158	30.00	7440-43-9	CADMIUM	10.1	3.03	RAW	Q
328	105	HANDY & HARMAN	SILVER-COPPER-CADMIUM-ZINC BRAZING ALLOYS	10.00	7440-22-4	SILVER	50	5.00	RAW	E
329	105	HANDY & HARMAN	SILVER-COPPER-CADMIUM-ZINC BRAZING ALLOYS	10.00	7440-50-8	COPPER	45	4.50	RAW	E
330	105	HANDY & HARMAN	SILVER-COPPER-CADMIUM-ZINC BRAZING ALLOYS	10.00	7440-66-6	ZINC	30	3.00	RAW	E
331	105	HANDY & HARMAN	SILVER-COPPER-CADMIUM-ZINC BRAZING ALLOYS	10.00	7440-43-9	CADMIUM	24	2.40	RAW	E
332	106	INDEPENDENT INK, INC.	73X WHITE MARKING INK	10.86	67-63-0	ISOPROPYL ALCOHOL	25	2.71	CAN	A
333	106	INDEPENDENT INK, INC.	73X WHITE MARKING INK	10.86		PROPRIETARY MIXTURE	22	2.39	CAN	A
334	106	INDEPENDENT INK, INC.	73X WHITE MARKING INK	10.86	107-21-1	ETHYLENE GLYCOL	9	0.98	CAN	A
335	107	INDEPENDENT INK, INC.	73X BLACK MARKING INK	8.35	67-63-0	ISOPROPYL ALCOHOL	33	2.76	CAN	B
336	107	INDEPENDENT INK, INC.	73X BLACK MARKING INK	8.35		PROPRIETARY MIXTURE	31	2.59	CAN	B

COPYRIGHT 2000, VANGUARD ENVIRONMENTAL, INC.

CHEM ID	PHYSICAL STATE	SAFETY, HEALTH AND INDUSTRIAL HYGIENE: NFPA 704/ FPRACH/ GLOES	OSHA PEL* 29 CFR 1910.1000 (AIR CONTAMINANTS) (547)	ACGIH* TLV*	CARCINOGEN (392) MUTAGEN, TERATOGEN / CALIF. SDWA PROP 65 (542)	SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT, TITLE III/EPCRA: 302 EHS (375)	304 CERCLA (775) / SPCC PLAN		311/312 HAZCOM (UNLTD)	313 "FORM R" (586) / EXEC. ORDER "12856"	STORM WATER RUNOFF/ WATER PRIORITY (273) / OPA '90	TSCA (78000) "FORM U" (510)	RCRA HAZ WASTE (586)	CLEAN AIR ACT AMENDMENTS (MAJOR AND MINOR SOURCES): RISK MGMT PROGRAM 112(r) (160)	CLEAN AIR ACT I, III, IV, VI (187 HAPS) / MACT 112(g)	PROCESS SAFETY MGMT (130)	DOT / DOT RQ (1100)
320	L	2-3-0 F/A/CH@LOES	150 ppm 710 mg/m^3	150 ppm		TPQ	RQ	5000	10000			FORM U					3 2 5000
321	L	2-3-0 F/A/CH@LOES				TPQ	RQ		10000								
322	L	2-3-0 F/A/CH@LOES	100 ppm 435 mg/m^3	100 ppm		TPQ	RQ	100	10000	313	SWR		U239		III		3 3 1000
323	L					TPQ	RQ		10000						III		
324	L					TPQ	RQ		10000						III		
325	S	3-0-1 A/CH@LES	§1910.1025	0.15 mg/m^3	SC PROP 65	TPQ	RQ	10	10000	313	SWR				III		1
326	S	3-0-1 A/CH@LES	2 mg/m^3	0.1 mg/m^3		TPQ	RQ		10000								
327	S	3-0-1 A/CH@LES	§1910.1027	0.05 mg/m^3	SC PROP 65	TPQ	RQ	10	10000	313	SWR				III		10
328	S	A/CH@LES	0.01 mg/m^3	0.1 mg/m^3		TPQ	RQ	1000	10000	313	SWR						1000
329	S	A/CH@LES	FUME: 0.1 mg/m^3	1 mg/m^3		TPQ	RQ	5000	10000	313	SWR						5000
330	S	A/CH@LES				TPQ	RQ	1000	10000	313	SWR						
331	S	A/CH@LES	§1910.1027	0.05 mg/m^3	SC PROP 65	TPQ	RQ	10	10000	313	SWR				III		10
332	L	F/A@LES	400 ppm 980 mg/m^3	400 ppm		TPQ	RQ		10000	313		FORM U					3 2
333	L	F/A@LES				TPQ	RQ		10000								
334	L	F/A@LES	50 ppm	50 ppm		TPQ	RQ	5000	10000	313					III		
335	L	F/A@LES	400 ppm 980 mg/m^3	400 ppm		TPQ	RQ		10000	313		FORM U					3 2
336	L	F/A@LES				TPQ	RQ		10000								

PET-PASTE A-ACUTE E-EYES
SP-SOLID CH-CHRONIC S-SKIN
PARTICLE

C-CARCINOGEN
M-MUTAGEN
T-TERATOGEN
S+_-SUSPECTED

T - TOXIC
F - FLAMMABLE
R - REACTIVE

TITLE I: ___VOC'S
TITLE III: 187 AIR TOXICS HAPS
TITLE IV: ACID RAIN DEPOSITORS
TITLE VI: ODC'S (CL. I-22, CL II-34)

*ACGIH - AMERICAN CONFERENCE OF GOVERNMENTAL INDUSTRIAL HYGIENISTS

CHEM ID	MSDS NO.	MANUFACTURER NAME	PRODUCT NAME	MAXIMUM WEIGHT	CAS NUMBER	CHEMICAL NAME	%	CHEMICAL WEIGHT	CONTAINER	AREA
337	107	INDEPENDENT INK, INC.	73X BLACK MARKING INK	8.35	107-21-1	ETHYLENE GLYCOL	13	1.09	CAN	B
338	108	ELF ATOCHEM NORTH AMERICA	TURCO VITRO-KLENE	670.00	6834-92-0	SODIUM METASILICATE	60	402.00	STEEL DRUM	C
339	108	ELF ATOCHEM NORTH AMERICA	TURCO VITRO-KLENE	670.00	1310-73-2	SODIUM HYDROXIDE	30	201.00	STEEL DRUM	C
340	108	ELF ATOCHEM NORTH AMERICA	TURCO VITRO-KLENE	670.00	7758-29-4	PENTASODIUM TRIPHOSPHATE	15	100.50	STEEL DRUM	C
341	109	HOUGHTON INTERNATIONAL, INC.	HOUGHTO-QUENCH K	2,229.72	64742-55-8	DISTILLATES HYDROTREATED LIGHT PARAFFIN	60	1,337.83	ASI	G
342	109	HOUGHTON INTERNATIONAL, INC.	HOUGHTO-QUENCH K	2,229.72	64741-44-2	DISTILLATES, PETROLEUM, STRAIGHT-RUN MIDDLE	60	1,337.83	ASI	G
343	109	HOUGHTON INTERNATIONAL, INC.	HOUGHTO-QUENCH K	2,229.72	64741-89-5	SEVERELY SOLVENT REFINED LIGHT PARAFFINIC DISTILLATE	60	1,337.83	ASI	G
344	110	RANDOLPH PRODUCTS COMPANY	AMS-3100~YELLOW ZINC CHROMATE PRIMER REV G	38.80	11103-86-9	ZINC POTASSIUM CHROMATE PIGMENT	30	11.64	CAN	S
345	110	RANDOLPH PRODUCTS COMPANY	AMS-3100~YELLOW ZINC CHROMATE PRIMER REV G	38.80	64742-89-8	LIGHT ALIPHATIC SOLVENT NAPHTHA	20	7.76	CAN	S
346	110	RANDOLPH PRODUCTS COMPANY	AMS-3100~YELLOW ZINC CHROMATE PRIMER REV G	38.80	71-36-3	BUTYL ALCOHOL	15	5.82	CAN	S
347	110	RANDOLPH PRODUCTS COMPANY	AMS-3100~YELLOW ZINC CHROMATE PRIMER REV G	38.80	78-83-1	ISOBUTYL ALCOHOL	10	3.88	CAN	S
348	110	RANDOLPH PRODUCTS COMPANY	AMS-3100~YELLOW ZINC CHROMATE PRIMER REV G	38.80	142-82-5	HEPTANE	5	1.94	CAN	S
349	110	RANDOLPH PRODUCTS COMPANY	AMS-3100~YELLOW ZINC CHROMATE PRIMER REV G	38.80	108-88-3	TOLUENE	5	1.94	CAN	S
350	110	RANDOLPH PRODUCTS COMPANY	AMS-3100~YELLOW ZINC CHROMATE PRIMER REV G	38.80	1330-20-7	XYLENE	5	1.94	CAN	S
351	111	DEFT, INC.	CAT. BMS 10-11U, TY I, CL A, GRD E	18.81	79-24-3	NITROETHANE	30	5.64	CAN	S
352	112	POTTERS INDUSTRIES, INC.	BALLOTINI IMPACT BEADS	1,000.00	1344-28-1	ALUMINUM OXIDE	100	1,000.00	BAG	H
353	112	POTTERS INDUSTRIES, INC.	BALLOTINI IMPACT BEADS	1,000.00	65997-17-3	AMORPHOUS SODIUM / CALCIUM BOROSILICATE	100	1,000.00	BAG	H

COPYRIGHT, 2000, VANGUARD ENVIRONMENTAL, INC.

CHEM ID	PHYSICAL STATE	NFPA 704/ FPRACH/ GLOES	OSHA PEL 29 CFR 1910.1000 (AIR CONTAMINANTS) (547)	ACGIH TLV	CARCINOGEN (392) MUTAGEN, TERATOGEN / CALIF. SDWA PROP 65 (542)	SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT, TITLE III/EPCRA: 302 EHS (375)	304 CERCLA (775) / SPCC PLAN	311/312 HAZCOM (UNLTD)	313 "FORM R" (586) / EXEC. ORDER "12856"	STORM WATER RUNOFF/ WATER PRIORITY (273) / OPA '90	TSCA (78000) "FORM U" (510)	RCRA HAZ WASTE (586)	CLEAN AIR ACT AMENDMENTS (MAJOR AND MINOR SOURCES): RISK MGMT PROGRAM 112(r) (160)	CLEAN AIR ACT I, III, IV, VI (187 HAPS) / MACT 112(g)	PROCESS SAFETY MGMT (130)	DOT / DOT RQ (1100)
337	L	F/A@LES	50 ppm	50 ppm		TPQ	RQ 5000	10000	313					III		
338	SP	3-0-0 A@LES				TPQ	RQ	10000								
339	SP	3-0-0 A@LES	2 mg/m^3	2 mg/m^3		TPQ	RQ 1000	10000								8 1000
340	SP	3-0-0 A@LES				TPQ	RQ 5000	10000								
341	L	0-1-0 A@LES				TPQ	RQ	10000								
342	L	0-1-0 A@LES				TPQ	RQ	10000								
343	L	0-1-0 A@LES				TPQ	RQ	10000								
344	L	3-3-0 F/A/CH@LOES				TPQ	RQ	10000	313					III		
345	L	3-3-0 F/A/CH@LOES				TPQ	RQ	10000						III		
346	L	3-3-0 F/A/CH@LOES	100 ppm 300 mg/m^3			TPQ	RQ 5000	10000	313		FORM U	U031				
347	L	3-3-0 F/A/CH@LOES	100 ppm 300 mg/m^3	50 ppm		TPQ	RQ 5000	10000			FORM U	U140				3.3 5000
348	L	3-3-0 F/A/CH@LOES	500 ppm 2000 mg/m^3	400 ppm		TPQ	RQ	10000								3.2
349	L	3-3-0 F/A/CH@LOES	200 ppm	50 ppm	T PROP 65	TPQ	RQ 1000	10000	313	SWR		U220		III		3.2 1000
350	L	3-3-0 F/A/CH@LOES	100 ppm 435 mg/m^3	100 ppm		TPQ	RQ 100	10000	313	SWR		U239		III		3.3 1000
351	L	3-3-1 F/A@LES	100 ppm 310 mg/m^3			TPQ	RQ	10000								
352	SP	A@LE	15 mg/m^3 *	10 mg/m^3		TPQ	RQ	10000	313							
353	SP	A@LE			SC	TPQ	RQ	10000								

[illegible] L=LIQUID P=PRESSURE L=LUNGS
G=GAS R=REACTIVE O=ORGANS
PST=PASTE A=ACUTE E=EYES
SP=SOLID CH=CHRONIC S=SKIN
PARTICLE

C=CARCINOGEN
M=MUTAGEN
T=TERATOGEN
S+_=SUSPECTED

*ACGIH - AMERICAN CONFERENCE OF GOVERNMENTAL INDUSTRIAL HYGIENISTS

T - TOXIC
F - FLAMMABLE
R - REACTIVE

TITLE I: ___ VOC'S
TITLE III: 187 AIR TOXICS HAPS
TITLE IV: ACID RAIN DEPOSITORS
TITLE VI: ODC'S (CL. I-22, CL II-34)

CHEM ID	MSDS NO.	MANUFACTURER NAME	PRODUCT NAME	MAXIMUM WEIGHT	CAS NUMBER	CHEMICAL NAME	%	CHEMICAL WEIGHT	CONTAINER	AREA
354	112	POTTERS INDUSTRIES, INC.	BALLOTINI IMPACT BEADS	1,000.00	1305-78-8	CALCIUM OXIDE	100	1,000.00	BAG	H
355	112	POTTERS INDUSTRIES, INC.	BALLOTINI IMPACT BEADS	1,000.00	1309-37-1	IRON OXIDE	100	1,000.00	BAG	H
356	112	POTTERS INDUSTRIES, INC.	BALLOTINI IMPACT BEADS	1,000.00	1309-48-4	MAGNESIUM OXIDE	100	1,000.00	BAG	H
357	112	POTTERS INDUSTRIES, INC.	BALLOTINI IMPACT BEADS	1,000.00	12136-45-7	POTASSIUM OXIDE	100	1,000.00	BAG	H
358	112	POTTERS INDUSTRIES, INC.	BALLOTINI IMPACT BEADS	1,000.00	7631-86-9	SILICON DIOXIDE	100	1,000.00	BAG	H
359	112	POTTERS INDUSTRIES, INC.	BALLOTINI IMPACT BEADS	1,000.00	1313-59-3	SODIUM OXIDE	100	1,000.00	BAG	H
360	113	SINCLAIR MINERAL & CHEMICAL COMPANY	EXOLON, FASTBLAST	1,000.00	1344-28-1	ALUMINUM OXIDE	100	1,000.00	BAG	H
361	113	SINCLAIR MINERAL & CHEMICAL COMPANY	EXOLON, FASTBLAST	1,000.00	13463-67-7	TITANIUM DIOXIDE	4	40.00	BAG	H
362	114	ITW DEVCON	DEVCON PLASTIC STEEL LIQUID (B) RESIN	23.38	25068-38-6	BISPHENOL A EPICHLOROHYDRIN POLYMER	35	8.18	CAN	E
363	115	HOUGHTON INTERNATIONAL, INC.	CERFA-KLEEN 5390	523.61		CLEANING MIXTURE	100	523.61	STEEL DRUM	G
364	116	CHEMTOOL, INC.	CT 410-AG	423.02	64742-52-5	DISTILLATES, PETROLEUM, HYDROTREATED HEAVY NAPHTHENIC	100	423.02	STEEL DRUM	O & P
365	117	NFO TECHNOLOGIES, INC.	AIRLINE 10W/NR	38.00	64742-52-5	DISTILLATES, PETROLEUM, HYDROTREATED HEAVY NAPHTHENIC	100	38.00	POLY DRUM	F & I
366	117	NFO TECHNOLOGIES, INC.	AIRLINE 10W/NR	38.00	64742-53-6	DISTILLATES, PETROLEUM, HYDROTREATED LIGHT NAPHTHENIC	100	38.00	POLY DRUM	F & I
367	118	MOBIL OIL CORPORATION	MOBIL ALMO 525	10.00	64742-65-0	DISTILLATES, PETROLEUM, SOLVENT-DEWAXED HEAVY PARAFFINIC	95	9.50	POLY JUG	B & I
368	118	MOBIL OIL CORPORATION	MOBIL ALMO 525	10.00	64742-54-7	HYDROTREATED HEAVY PARAFFINIC DISTILLATE	95	9.50	POLY JUG	B & I
369	118	MOBIL OIL CORPORATION	MOBIL ALMO 525	10.00	63449-39-8	PARAFFIN WAXES AND HYDROCARBON WAXES, CHLORO	2.03	0.20	POLY JUG	B & I
370	118	MOBIL OIL CORPORATION	MOBIL ALMO 525	10.00	7782-50-5	CHLORINE	0.9	0.09	POLY JUG	B & I

COPYRIGHT 2000, VANGUARD ENVIRONMENTAL, INC.

CHEM ID	PHYSICAL STATE	SAFETY, HEALTH AND INDUSTRIAL HYGIENE: NFPA 704/ FPRACH/ GLOES	OSHA PEL 29 CFR 1910.1000 (AIR CONTAMINANTS) (547)	ACGIH* TLV	CARCINOGEN (392) MUTAGEN, TERATOGEN / CALIF. SDWA PROP 65 (542)	SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT, TITLE III/EPCRA: 302 EHS (375)	304 CERCLA (775) / SPCC PLAN	311/312 HAZCOM (UNLTD)	313 "FORM R" (586) / EXEC. ORDER "12856"	STORM WATER RUNOFF/ WATER PRIORITY (273) / OPA '90	TSCA (78000) "FORM U" (510)	RCRA HAZ WASTE (586)	CLEAN AIR ACT AMENDMENTS (MAJOR AND MINOR SOURCES): RISK MGMT PROGRAM 112(r) (160)	CLEAN AIR ACT I, III, IV, VI (187 HAPS) / MACT 112(g)	PROCESS SAFETY MGMT (130)	DOT / DOT RQ (1100)
354	SP	A@LE	5 mg/m^3	2 mg/m^3		TPQ	RQ	10000								9
355	SP	A@LE	10 mg/m^3	5 mg/m^3		TPQ	RQ	10000								
356	SP	A@LE	15 mg/m^3 *	10 mg/m^3		TPQ	RQ	10000								
357	SP	A@LE				TPQ	RQ	10000								
358	SP	A@LE	6 mg/m^3	10 mg/m^3	SC	TPQ	RQ	10000								
359	SP	A@LE				TPQ	RQ	10000								
360	SP	A@LE	15 mg/m^3 *	10 mg/m^3		TPQ	RQ	10000	313							
361	SP	A@LE	15 mg/m^3 *	10 mg/m^3	C	TPQ	RQ	10000								
362	PST	2-1-1 A@S				TPQ	RQ	10000								
363	L	0-0-0 A@LES				TPQ	RQ	10000								
364	L	1-1-0				TPQ	RQ	10000						III		
365	L	1-1-0 A@LS				TPQ	RQ	10000						III		
366	L	1-1-0 A@LS				TPQ	RQ	10000						III		
367	L	0-1-0				TPQ	RQ	10000						III		
368	L	0-1-0				TPQ	RQ	10000						III		
369	L	0-1-0			SC PROP 65	TPQ	RQ	10000	313							
370	L	0-1-0	(C)1 ppm (C)3 mg/m^3			TPQ 100	RQ 10	10000	313	SWR			2500 T	III	1500	10

S=SOLID, G=GENES, C=CARCINOGEN
L=LIQUID, P=PRESSURE, L=LUNGS, M=MUTAGEN
G=GAS, R=REACTIVE, O=ORGANS, T=TERATOGEN
PST=PASTE, A=ACUTE, E=EYES, S+=SUSPECTED
SP=SOLID PARTICLE, CH=CHRONIC, S=SKIN

*ACGIH - AMERICAN CONFERENCE OF GOVERNMENTAL INDUSTRIAL HYGIENISTS

T - TOXIC
F - FLAMMABLE
R - REACTIVE

TITLE I: ____ VOC'S
TITLE III: 187 AIR TOXICS HAPS
TITLE IV: ACID RAIN DEPOSITORS
TITLE VI: ODC'S (CL. I-22, CL II-34)

CHEM ID	MSDS NO.	MANUFACTURER NAME	PRODUCT NAME	MAXIMUM WEIGHT	CAS NUMBER	CHEMICAL NAME	%	CHEMICAL WEIGHT	CONTAINER	AREA
371	118	MOBIL OIL CORPORATION	MOBIL ALMO 525	10.00	68649-42-3	ZINC DIALKYL DITHIOPHOSPHATE	0.69	0.07	POLY BUG	B & I
372	118	MOBIL OIL CORPORATION	MOBIL ALMO 525	10.00	7440-66-6	ZINC	0.09	0.01	POLY BUG	B & I
373	119	ALLIED-KELITE	ISOPREP® 44	250.53	497-19-8	SODIUM CARBONATE	10	25.05	FIBER DRUM	C
374	119	ALLIED-KELITE	ISOPREP® 44	250.53	6834-92-0	SODIUM METASILICATE	10	25.05	FIBER DRUM	C
375	121	MACDERMID, INC.	ARP 2	20.00		SURFACTANT MIXTURE	100	20.00	BOX	G
376	124	MOBIL OIL CORPORATION	MOBIL VACTRA OIL NO. 3	404.19	64742-49-0	PETROLEUM HYDROCARBON	100	404.19	STEEL DRUM	J
377	125	MOBIL OIL CORPORATION	MOBIL DTE 11M	400.05	68649-42-3	ZINC DIALKYLDITHIOPHOSPHATE	0.66	2.64	STEEL DRUM	J
378	125	MOBIL OIL CORPORATION	MOBIL DTE 11M	400.05		ZINC ALKENYL CARBOXAMIDE MIXTURE	0.64	2.56	STEEL DRUM	J
379	125	MOBIL OIL CORPORATION	MOBIL DTE 11M	400.05	7440-66-6	ZINC	0.1	0.40	STEEL DRUM	J
380	126	MOBIL OIL CORPORATION	MOBILMET ALPHA	14,447.23	64741-89-5	SEVERELY SOLVENT REFINED LIGHT PARAFFINIC DISTILLATE	50	7,223.62	STEEL DRUM	J
381	126	MOBIL OIL CORPORATION	MOBILMET ALPHA	14,447.23	68440-40-4	LARD, OIL, ME ESTERS, SULFURIZED	15	2,167.08	STEEL DRUM	J
382	127	MOBIL OIL CORPORATION	MOBIL VELOCITE OIL NO. 10	1,436.37	108-88-3	TOLUENE	0.01	0.14	STEEL DRUM	J
383	128	MOBIL OIL CORPORATION	MOBIL VACOULINE OIL 1409	1,484.81		ADDITIVES MIXTURE	100	1,484.81	STEEL DRUM	J
384	128	MOBIL OIL CORPORATION	MOBIL VACOULINE OIL 1409	1,484.81	64742-49-0	PETROLEUM HYDROCARBON	100	1,484.81	STEEL DRUM	J
385	129	MOBIL OIL CORPORATION	MOBIL VACTRA OIL NO. 4	1,489.82		ADDITIVES MIXTURE	100	1,489.82	STEEL DRUM	J
386	129	MOBIL OIL CORPORATION	MOBIL VACTRA OIL NO. 4	1,489.82	64742-49-0	PETROLEUM HYDROCARBON	100	1,489.82	STEEL DRUM	J
387	130	MOBIL OIL CORPORATION	MOBIL VACTRA OIL NO. 2	1,468.11		ADDITIVES MIXTURE	100	1,468.11	STEEL DRUM	J

COPYRIGHT 2000 VANGUARD ENVIRONMENTAL, INC.

CHEM ID	PHYSICAL STATE	NFPA 704/ FPRACH/ GLOES	SAFETY/HEALTH AND INDUSTRIAL HYGIENE: OSHA PEL 29 CFR 1910.1000 (AIR CONTAMINANTS) (547)	ACGIH* TLV	CARCINOGEN (392) MUTAGEN, TERATOGEN / CALIF. SDWA PROP 65 (542)	SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT, TITLE III/EPCRA: 302 EHS (375)	304 CERCLA (775) / SPCC PLAN	311/312 HAZCOM (UNLTD)	313 "FORM R" (586) / EXEC. ORDER "12856"	STORM WATER RUNOFF/ WATER PRIORITY (273) / OPA '90	TSCA (78000) "FORM U" (510)	RCRA HAZ WASTE (586)	CLEAN AIR ACT AMENDMENTS (MAJOR AND MINOR SOURCES): RISK MGMT PROGRAM 112(r) (160)	CLEAN AIR ACT I, III, IV, VI (187 HAPS) / MACT 112(g)	PROCESS SAFETY MGMT (130)	DOT / DOT RQ (1100)
371	L	0-1-0				TPQ	RQ	10000	313							
372	L	0-1-0				TPQ	RQ 1000	10000	313	SWR						
373	SP	2-0-1 A@LES				TPQ	RQ	10000								
374	SP	2-0-1 A@LES				TPQ	RQ	10000								
375	L	1-0-0 A@LES				TPQ	RQ	10000								
376	L	0-1-0				TPQ	RQ	10000								
377	L	0-1-0				TPQ	RQ	10000	313							
378	L	0-1-0				TPQ	RQ	10000								
379	L	0-1-0				TPQ	RQ 1000	10000	313	SWR						
380	L	0-1-0				TPQ	RQ SPCC	10000 311/312								
381	L	0-1-0				TPQ	RQ SPCC	10000 311/312								
382	L	0-1-0	200 ppm	50 ppm	T PROP 65	TPQ	RQ 1000	10000	313	SWR		U220		III		3.2 1000
383	L	0-1-0				TPQ	RQ	10000								
384	L	0-1-0				TPQ	RQ	10000								
385	L	0-1-0				TPQ	RQ	10000								
386	L	0-1-0				TPQ	RQ	10000								
387	L	1-1-0				TPQ	RQ	10000								

[illegible] G-GENES
[illegible] P-PRESSURE L-LUNGS
[illegible] R-REACTIVE O-ORGANS
PST-PASTE A-ACUTE E-EYES
SP-SOLID CH-CHRONIC S-SKIN
PARTICLE

O-CARCINOGEN
M-MUTAGEN
T-TERATOGEN
S-SUSPECTED

T - TOXIC
F - FLAMMABLE
R - REACTIVE

TITLE I: ___ VOC'S
TITLE III: 187 AIR TOXICS HAPS
TITLE IV: ACID RAIN DEPOSITORS
TITLE VI: ODC'S (CL. I-22, CL II-34)

*ACGIH - AMERICAN CONFERENCE OF GOVERNMENTAL INDUSTRIAL HYGIENISTS

CHEM ID	MSDS NO.	MANUFACTURER NAME	PRODUCT NAME	MAXIMUM WEIGHT	CAS NUMBER	CHEMICAL NAME	%	CHEMICAL WEIGHT	CONTAINER	AREA
388	130	MOBIL OIL CORPORATION	MOBIL VACTRA OIL NO. 2	1,468.11	64742-49-0	PETROLEUM HYDROCARBON	100	1,468.11	STEEL DRUM	I
389	131	MOBIL OIL CORPORATION	MOBIL DTE OIL LIGHT	399.60	68649-42-3	ZINC DIALKYLDITHIOPHOSPHATE	0.07	0.28	STEEL DRUM	I
390	131	MOBIL OIL CORPORATION	MOBIL DTE OIL LIGHT	399.60	1330-78-5	PHOSPHORIC ACID, TRIS(METHYLPHENYL) ESTER	0.05	0.20	STEEL DRUM	J
391	132	MOBIL OIL CORPORATION	MOBIL DTE 26	22,297.17	68649-42-3	ZINC DIALKYLDITHIOPHOSPHATE	0.67	149.39	STEEL DRUM	I
392	132	MOBIL OIL CORPORATION	MOBIL DTE 26	22,297.17	7440-66-6	ZINC	0.1	22.30	STEEL DRUM	J
393	133	MOBIL OIL CORPORATION	MOBIL DTE 25	7,390.64	68649-42-3	ZINC DIALKYLDITHIOPHOSPHATE	0.67	49.52	STEEL DRUM	J
394	133	MOBIL OIL CORPORATION	MOBIL DTE 25	7,390.64	7440-66-6	ZINC	0.1	7.39	STEEL DRUM	J
395	134	ASHLAND CHEMICAL COMPANY	TECTYL 275	408.78	64742-88-7	FLASH NAPHTHA	42	171.69	STEEL DRUM	S
396	134	ASHLAND CHEMICAL COMPANY	TECTYL 275	408.78	64742-52-5	DISTILLATES, PETROLEUM, HYDROTREATED HEAVY NAPHTHENIC	40	163.51	STEEL DRUM	S
397	134	ASHLAND CHEMICAL COMPANY	TECTYL 275	408.78	111-76-2	2-BUTOXYETHANOL	20	81.76	STEEL DRUM	S
398	135	NEW CASTLE REFRACTORIES	SILICON CARBIDE: FINES, FRIT, OR CLAY BONDED	100.00	409-21-2	SILICON CARBIDE	91	91.00	RAW	G
399	135	NEW CASTLE REFRACTORIES	SILICON CARBIDE: FINES, FRIT, OR CLAY BONDED	100.00	7631-86-9	SILICON DIOXIDE	15	15.00	RAW	G
400	135	NEW CASTLE REFRACTORIES	SILICON CARBIDE: FINES, FRIT, OR CLAY BONDED	100.00	1344-28-1	ALUMINUM OXIDE	12	12.00	RAW	G
401	136	JAYFLEX DTDP	#89 GEAR MARKING COMPOUND	5.00		DTDP SOLVENT MIXTURE	50	2.50	CAN	I, U & V
402	136	JAYFLEX DTDP	#89 GEAR MARKING COMPOUND	5.00		PIGMENT MIXTURE	33	1.65	CAN	I, U & V
403	137	MACDERMID, INC.	METEX FB COPPER STRIPPER	6,459.50	7758-19-2	SODIUM CHLORITE	10	645.95	POLY DRUM	C
404	139	FEL-PRO, INC.	CLOVER SILICON CARBIDE GREASE MIX LAPPING	1,300.00	409-21-2	SILICON CARBIDE	40	520.00	STEEL & POLY DRUM	V

COPYRIGHT 2000, VANGUARD ENVIRONMENTAL, INC.
TULSA, OK.

CHEM ID	PHYSICAL STATE	SAFETY, HEALTH AND INDUSTRIAL HYGIENE: NFPA 704/ FPRACH/ GLOES	OSHA PEL 29 CFR 1910.1000 (AIR CONTAMINANTS) (547)	ACGIH* TLV	CARCINOGEN (392) MUTAGEN, TERATOGEN / CALIF. SDWA PROP 65 (542)	SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT, TITLE III/EPCRA: 302 EHS (375)	304 CERCLA (775) / SPCC PLAN	311/312 HAZCOM (UNLTD)	313 "FORM R" (586) / EXEC. ORDER "12856"	STORM WATER RUNOFF/ WATER PRIORITY (273) / OPA '90	TSCA (78000) "FORM U" (510)	RCRA HAZ WASTE (586)	CLEAN AIR ACT AMENDMENTS (MAJOR AND MINOR SOURCES): RISK MGMT PROGRAM 112(r) (160)	CLEAN AIR ACT I, III, IV, VI (187 HAPS) / MACT 112(g)	PROCESS SAFETY MGMT (130)	DOT / DOT RQ (1100)
388	L	1-1-0				TPQ	RQ	10000								
389	L	0-1-0				TPQ	RQ	10000	313							
390	L	0-1-0				TPQ	RQ	10000			FORM U					
391	L	0-1-0				TPQ	RQ SPCC	10000 311/312	313							
392	L	0-1-0				TPQ	RQ 1000 SPCC	10000 311/312	313	SWR						
393	L	0-1-0				TPQ	RQ SPCC	10000	313							
394	L	0-1-0				TPQ	RQ 1000 SPCC	10000	313	SWR						
395	L	1-2-0 F/A@LES				TPQ	RQ	10000								
396	L	1-2-0 F/A@LES				TPQ	RQ	10000						III		
397	L	1-2-0 F/A@LES	50 ppm 240 mg/m^3			TPQ	RQ	10000	313					III		
398	S	A@LES	15 mg/m^3 *	10 mg/m^3		TPQ	RQ	10000								
399	S	A@LES	6 mg/m^3	10 mg/m^3	SC	TPQ	RQ	10000								
400	S	A@LES	15 mg/m^3 *	10 mg/m^3		TPQ	RQ	10000	313							
401	PST	A@LES				TPQ	RQ	10000								
402	PST	A@LES				TPQ	RQ	10000								
403	L	2-1-1 A@LES				TPQ	RQ SPCC	10000								
404	PST	0-1-0 A@E	15 mg/m^3 *	10 mg/m^3		TPQ	RQ	10000								

S=SOLID, L=LIQUID, G=GAS, PST=PASTE, SP=SOLID PARTICLE

F=FIRE, P=PRESSURE, R=REACTIVE, A=ACUTE, CH=CHRONIC

G=GENES, L=LUNGS, O=ORGANS, E=EYES, S=SKIN

C=CARCINOGEN, M=MUTAGEN, T=TERATOGEN, S=SUSPECTED

*ACGIH - AMERICAN CONFERENCE OF GOVERNMENTAL INDUSTRIAL HYGIENISTS

T - TOXIC, F - FLAMMABLE, R - REACTIVE

TITLE I: ____ VOC'S
TITLE III: 187 AIR TOXICS HAPS
TITLE IV: ACID RAIN DEPOSITORS
TITLE VI: ODC'S (CL. I-22, CL. II-34)

CHEM ID	MSDS NO.	MANUFACTURER NAME	PRODUCT NAME	MAXIMUM WEIGHT	CAS NUMBER	CHEMICAL NAME	%	CHEMICAL WEIGHT	CONTAINER	AREA
405	139	FEL-PRO, INC.	CLOVER SILICON CARBIDE GREASE MIX LAPPING	1,300.00	1333-86-4	CARBON BLACK	1	13.00	STEEL & POLY DRUM	V
406	139	FEL-PRO, INC.	CLOVER SILICON CARBIDE GREASE MIX LAPPING	1,300.00	7631-86-9	SILICON DIOXIDE	1	13.00	STEEL & POLY DRUM	V
407	140	THE STUTZ COMPANY	SC-120, 180, 240, 320, 400-AGHV LAPPING COMPOUNDS	3,000.00	64742-53-6	DISTILLATES, PETROLEUM, HYDROTREATED LIGHT NAPHTHENIC	60	1,800.00	STEEL & POLY DRUM	V
408	140	THE STUTZ COMPANY	SC-120, 180, 240, 320, 400-AGHV LAPPING COMPOUNDS	3,000.00	409-21-2	SILICON CARBIDE	40	1,200.00	STEEL & POLY DRUM	V
409	141	DOW CORNING CORPORATION	COW CORNING 2 MOLY POWDER	40.08	1317-33-5	MOLYBDENUM DISULFIDE	99	39.68	GLASS BOTTLE	P
410	141	DOW CORNING CORPORATION	COW CORNING 2 MOLY POWDER	40.08	14808-60-7	CRYSTALLINE SILICA	0.3	0.12	GLASS BOTTLE	P
411	142	CHAS. F. L'HOMMEDIEU & SONS	EMERY CAKE BUFFING COMPOSITION	36.00	1344-28-1	ALUMINUM OXIDE	75	27.00	BOX	B
412	143	HANGSTERFER'S LABORATORIES, INC.	HANGSTERFER'S ALDRAW J-1	101.88	63449-39-8	PARAFFIN WAXES AND HYDROCARBON WAXES, CHLORO	100	101.88	STEEL DRUM	V
413	144	MOBIL OIL CORPORATION	MOBIL VELOCITE OIL NO. 3	668.08	64741-86-2	DISTILLATES, PETROLEUM, SWEETENED MIDDLE	65	434.25	STEEL DRUM	J
414	144	MOBIL OIL CORPORATION	MOBIL VELOCITE OIL NO. 3	668.08	64742-56-9	DISTILLATES, PETROLEUM, SOLVENT-DEWAXED LIGHT PARAFFINIC	45	300.64	STEEL DRUM	J
415	145	MOBIL OIL CORPORATION	MOBIL VELOCITE OIL NO. 6	1,407.98	64742-56-9	DISTILLATES, PETROLEUM, SOLVENT-DEWAXED LIGHT PARAFFINIC	80	1,126.38	STEEL DRUM	J
416	146	MOBIL OIL CORPORATION	MOBILFLUID 424	148.65		ADDITIVES MIXTURE	100	148.65	POLY DRUM	J
417	146	MOBIL OIL CORPORATION	MOBILFLUID 424	148.65		MINERAL OIL MIXTURE	100	148.65	POLY DRUM	J
418	147	MOBIL OIL CORPORATION	MOBILGEAR 626	148.15	1330-78-5	PHOSPHORIC ACID, TRIS(METHYLPHENYL) ESTER	0.04	0.06	POLY DRUM	J
419	148	MOBIL OIL CORPORATION	MOBILGEAR 629	148.65	1330-78-5	PHOSPHORIC ACID, TRIS(METHYLPHENYL) ESTER	0.04	0.06	POLY DRUM	J
420	149	MOBIL OIL CORPORATION	MOBILITH AW-2	100.00	7620-77-1	LITHIUM HYDROXYSTEARATE	10	10.00	STEEL DRUM	J
421	149	MOBIL OIL CORPORATION	MOBILITH AW-2	100.00	38900-29-7	NONANEDIOIC ACID, DILITHIUM SALT	10	10.00	STEEL DRUM	J

COPYRIGHT 2000, VANGUARD ENVIRONMENTAL, INC.

CHEM ID	PHYSICAL STATE	NFPA 704/ REACH/ GLOES	OSHA PEL 29 CFR 1910.1000 (AIR CONTAMINANTS) (547)	ACGIH* TLV	CARCINOGEN (393) MUTAGEN, TERATOGEN / CALIF. SDWA PROP 65 (542)	SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT, TITLE III/EPCRA: 302 EHS (375)	304 CERCLA (775) / SPCC PLAN	311/312 HAZCOM (UNLTD)	313 "FORM R" (586) / EXEC. ORDER "12856"	STORM WATER RUNOFF/ WATER PRIORITY (273) / OPA '90	TSCA (78000) "FORM U" (510)	RCRA HAZ WASTE (586)	CLEAN AIR ACT AMENDMENTS (MAJOR AND MINOR SOURCES): RISK MGMT PROGRAM 112(r) (160)	CLEAN AIR ACT I, III, IV, VI (187 HAPS) / MACT 112(g)	PROCESS SAFETY MGMT (130)	DOT / DOT RQ (1100)
405	PST	0-1-0 A@E	3.5 mg/m^3	3.5 mg/m^3	C PROP 65	TPQ	RQ	10000								
406	PST	0-1-0 A@E	6 mg/m^3	10 mg/m^3	SC	TPQ	RQ	10000								
407	PST	A@LES				TPQ	RQ	10000						III		
408	PST	A@LES	15 mg/m^3 *	10 mg/m^3		TPQ	RQ	10000								
409	SP					TPQ	RQ	10000								
410	SP		30 mg/m^3	0.1 mg/m^3	C	TPQ	RQ	10000								
411	S	A@LE	15 mg/m^3 *	10 mg/m^3		TPQ	RQ	10000	313							
412	L	1-1-0 A@E			SC PROP 65	TPQ	RQ	10000	313							
413	L	0-2-0 F/CH@S				TPQ	RQ	10000								
414	L	0-2-0 F/CH@S				TPQ	RQ	10000								
415	L	0-1-0 CH@S				TPQ	RQ	10000								
416	L	0-1-0				TPQ	RQ	10000								
417	L	0-1-0				TPQ	RQ	10000						III		
418	L	0-1-0				TPQ	RQ	10000			FORM U					
419	L	0-1-0				TPQ	RQ	10000			FORM U					
420	GEL	0-1-0				TPQ	RQ	10000								
421	GEL	0-1-0				TPQ	RQ	10000								

PST=PASTE A=ACUTE E=EYES
SP=SOLID CH=CHRONIC S=SKIN
PARTICLE

C=CARCINOGEN
M=MUTAGEN
T=TERATOGEN
S=_=SUSPECTED

T - TOXIC
F - FLAMMABLE
R - REACTIVE

TITLE I: ____ VOC'S
TITLE III: 187 AIR TOXICS HAPS
TITLE IV: ACID RAIN DEPOSITORS
TITLE VI: ODC'S (CL. I-22, CL. II-34)

*ACGIH - AMERICAN CONFERENCE OF GOVERNMENTAL INDUSTRIAL HYGIENISTS

CHEM ID	MSDS NO.	MANUFACTURER NAME	PRODUCT NAME	MAXIMUM WEIGHT	CAS NUMBER	CHEMICAL NAME	%	CHEMICAL WEIGHT	CONTAINER	AREA
422	149	MOBIL OIL CORPORATION	MOBILITH AW-2	100.00	68649-42-3	ZINC DIALKYLDITHIOPHOSPHATE	1.5	1.50	STEEL DRUM	J
423	149	MOBIL OIL CORPORATION	MOBILITH AW-2	100.00	68783-36-8	FATTY ACIDS, C16-22, LITHIUM SALTS	0.64	0.64	STEEL DRUM	J
424	149	MOBIL OIL CORPORATION	MOBILITH AW-2	100.00	115-86-6	TRIPHENYL PHOSPHATE	0.3	0.30	STEEL DRUM	J
425	149	MOBIL OIL CORPORATION	MOBILITH AW-2	100.00	28016-00-4	ZINC DINONYLNAPHTHALENE SULFONATE	0.2	0.20	STEEL DRUM	J
426	149	MOBIL OIL CORPORATION	MOBILITH AW-2	100.00	7440-66-6	ZINC	0.15	0.15	STEEL DRUM	J
427	149	MOBIL OIL CORPORATION	MOBILITH AW-2	100.00	1330-20-7	XYLENE	0.13	0.13	STEEL DRUM	J
428	150	MOBIL OIL CORPORATION	MOBILSOL A	36.74		FATY ACID METHYL ESTER MIXTURE	100	36.74	POLY DRUM	J
429	151	MOBIL OIL CORPORATION	MOBILGEAR 632	149.98	1330-78-5	PHOSPHORIC ACID, TRIS(METHYLPHENYL) ESTER	0.04	0.06	POLY DRUM	J
430	152	MOBIL OIL CORPORATION	MOBILGREASE 28	50.00	115-77-5	PENTAERYTHRITOL	5	2.50	POLY DRUM	J
431	153	MOBIL OIL CORPORATION	MOBILITH SHC 460	20.00	7620-77-1	LITHIUM HYDROXYSTEARATE	10.41	2.08	TUBE	J
432	153	MOBIL OIL CORPORATION	MOBILITH SHC 460	20.00	64601-11-2	HEXANEDIOIC ACID, MONOMETHYL ESTER, LITHIUM SALT	2.57	0.51	TUBE	J
433	153	MOBIL OIL CORPORATION	MOBILITH SHC 460	20.00	68783-36-8	FATTY ACIDS, C16-22, LITHIUM SALTS	1.29	0.26	TUBE	J
434	153	MOBIL OIL CORPORATION	MOBILITH SHC 460	20.00	64601-12-3	PENTANEDIOIC ACID, MONOMETHYL ESTER, LITHIUM SALT	0.36	0.07	TUBE	J
435	153	MOBIL OIL CORPORATION	MOBILITH SHC 460	20.00	1310-65-2	LITHIUM HYDROXIDE	0.09	0.02	TUBE	J
436	154	MOBIL OIL CORPORATION	MOBILMET KAPPA CCF	1,481.47	7704-34-9	SULFUR	100	1,481.47	STEEL DRUM	J
437	155	MOBIL OIL CORPORATION	MOBILMET NU	14,764.57	61788-76-9	CHLOROALKANES	1.9	280.53	STEEL DRUM	J
438	155	MOBIL OIL CORPORATION	MOBILMET NU	14,764.57	7782-50-5	CHLORINE	0.8	118.12	STEEL DRUM	J

COPYRIGHT 2000, VANGUARD ENVIRONMENTAL, INC.

CHEM ID	PHYSICAL STATE	SAFETY, HEALTH AND INDUSTRIAL HYGIENE: NFPA 704/ FPRACH/ GLOES	OSHA PEL 29 CFR 1910.1000 (AIR CONTAMINANTS) (547)	ACGIH* TLV	CARCINOGEN (392) MUTAGEN, TERATOGEN / CALIF. SDWA PROP 65 (542)	SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT, TITLE III/EPCRA: 302 EHS (375)	304 CERCLA (775) / SPCC PLAN	311/312 HAZCOM (UNLTD)	313 "FORM R" (586) / EXEC. ORDER "12856"	STORM WATER RUNOFF/ WATER PRIORITY (273) / OPA '90	TSCA (78000) "FORM U" (510)	RCRA HAZ WASTE (586)	CLEAN AIR ACT AMENDMENTS (MAJOR AND MINOR SOURCES): RISK MGMT PROGRAM 112(r) (160)	CLEAN AIR ACT I, III, IV, VI (187 HAPS) / MACT 112(g)	PROCESS SAFETY MGMT (130)	DOT / DOT RQ (1100)
422	GEL	0-1-0				TPQ	RQ	10000	313							
423	GEL	0-1-0				TPQ	RQ	10000								
424	GEL	0-1-0	3 mg/m^3	3 mg/m^3		TPQ	RQ	10000			FORM U					
425	GEL	0-1-0				TPQ	RQ	10000	313							
426	GEL	0-1-0				TPQ	RQ 1000	10000	313	SWR						
427	GEL	0-1-0	100 ppm 435 mg/m^3	100 ppm		TPQ	RQ 100	10000	313	SWR		U239		III		3.3 1000
428	L	0-1-0				TPQ	RQ	10000								
429	L	0-1-0				TPQ	RQ	10000			FORM U					
430	GEL	0-1-0	15 mg/m^3 *			TPQ	RQ	10000								
431	GEL	0-1-0				TPQ	RQ	10000								
432	GEL	0-1-0				TPQ	RQ	10000								
433	GEL	0-1-0				TPQ	RQ	10000								
434	GEL	0-1-0				TPQ	RQ	10000								
435	GEL	0-1-0				TPQ	RQ	10000								
436	L	2-1-0				TPQ	RQ	10000								
437	L	0-1-0				TPQ	RQ SPCC	10000 311/312	313							
438	L	0-1-0	(C)1 ppm (C)3 mg/m^3			TPQ 100	RQ 10 SPCC	10000 311/312	313	SWR			2500 T	III	1500	10

[illegible] C=CARCINOGEN
[illegible] M=MUTAGEN
T=TERATOGEN
S=SUSPECTED

T - TOXIC
F - FLAMMABLE
R - REACTIVE

TITLE I: ___ VOC'S
TITLE III: 187 AIR TOXICS HAPS
TITLE IV: ACID RAIN DEPOSITORS
TITLE VI: ODC'S (CL. I-22, CL. II-34)

[illegible] FIRE/OXIDIZER
L=PLUMBE
R=REACTIVE
A=ACUTE
CH=CHRONIC
L=LUNGS
O=ORGANS
E=EYES
S=SKIN

G=GAS
PST=PASTE
SP=SOLID PARTICLE

*ACGIH - AMERICAN CONFERENCE OF GOVERNMENTAL INDUSTRIAL HYGIENISTS

CHEM ID	MSDS NO.	MANUFACTURER NAME	PRODUCT NAME	MAXIMUM WEIGHT	CAS NUMBER	CHEMICAL NAME	%	CHEMICAL WEIGHT	CONTAINER	AREA
439	156	MOBIL OIL CORPORATION	MOBILMET UPSILON	14,196.70	64741-89-5	SEVERELY SOLVENT REFINED LIGHT PARAFFINIC DISTILLATE	100	14,196.70	STEEL DRUM	J
440	157	MOBIL OIL CORPORATION	MOBILTEMP SHC 32	50.00	67-64-1	ACETONE	5	2.50	CARTRIDGE	J
441	157	MOBIL OIL CORPORATION	MOBILTEMP SHC 32	50.00	115-77-5	PENTAERYTHRITOL	5	2.50	CARTRIDGE	J
442	158	MOBIL OIL CORPORATION	MOBILUBE HD 85W-140	150.32		ADDITIVES MIXTURE	100	150.32	POLY DRUM	J
443	158	MOBIL OIL CORPORATION	MOBILUBE HD 85W-140	150.32	64742-49-0	PETROLEUM HYDROCARBON	100	150.32	POLY DRUM	J
444	159	MOBIL OIL CORPORATION	MOBILUX EP 023	75.33	68649-42-3	ZINC DIALKYLDITHIOPHOSPHATE	1.5	1.13	POLY DRUM	J
445	159	MOBIL OIL CORPORATION	MOBILUX EP 023	75.33	61788-76-9	CHLOROALKANES	1.42	1.07	POLY DRUM	J
446	159	MOBIL OIL CORPORATION	MOBILUX EP 023	75.33	70248-43-0	RESIN ACIDS AND ROSIN ACIDS, POLYMD., ZINC SALTS	1	0.75	POLY DRUM	J
447	159	MOBIL OIL CORPORATION	MOBILUX EP 023	75.33	7782-50-5	CHLORINE	0.63	0.47	POLY DRUM	J
448	159	MOBIL OIL CORPORATION	MOBILUX EP 023	75.33	7440-66-6	ZINC	0.22	0.17	POLY DRUM	J
449	159	MOBIL OIL CORPORATION	MOBILUX EP 023	75.33	1310-66-3	LITHIUM HYDROXIDE MONOHYDRATE	0.16	0.12	POLY DRUM	J
450	160	MOBIL OIL CORPORATION	MOBILUX 2	77.00	64742-52-5	DISTILLATES, PETROLEUM, HYDROTREATED HEAVY NAPHTHENIC	90	69.30	POLY DRUM	J
451	160	MOBIL OIL CORPORATION	MOBILUX 2	77.00	64742-53-6	DISTILLATES, PETROLEUM, HYDROTREATED LIGHT NAPHTHENIC	15	11.55	POLY DRUM	J
452	160	MOBIL OIL CORPORATION	MOBILUX 2	77.00	7620-77-1	LITHIUM HYDROXYSTEARATE	7.04	5.42	POLY DRUM	J
453	160	MOBIL OIL CORPORATION	MOBILUX 2	77.00	68783-36-8	FATTY ACIDS, C16-22, LITHIUM SALTS	0.87	0.67	POLY DRUM	J
454	162	LPS LABORATORIES, INC.	LPS 1 GREASELESS LUBRICANT	33.40	64742-47-8	ALIPHATIC PETROLEUM DISTILLATES	80	26.72	STEEL DRUM	O
455	162	LPS LABORATORIES, INC.	LPS 1 GREASELESS LUBRICANT	33.40	64742-30-9	DISTILLATES, PETROLEUM, CHEMICALLY NEUTRALIZED MIDDLE	30	10.02	STEEL DRUM	O

COPYRIGHT 2000, VANGUARD ENVIRONMENTAL, INC.
TULSA, OK

CHEM ID	PHYSICAL STATE	NFPA 704/ FPRACH/ GLOES	OSHA PEL 29 CFR 1910.1000 (AIR CONTAMINANTS) (547)	ACGIH* TLV	CARCINOGEN (392) MUTAGEN, TERATOGEN / CALIF. SDWA PROP 65 (542)	302 EHS (375)	304 CERCLA (775) / SPCC PLAN	311/312 HAZCOM (UNLTD)	313 "FORM R" (586) / EXEC. ORDER "12856"	STORM WATER RUNOFF/ WATER PRIORITY (273) / OPA '90	TSCA (78000) "FORM U" (510)	RCRA HAZ WASTE (586)	RISK MGMT PROGRAM 112(r) (160)	CLEAN AIR ACT I, III, IV, VI (187 HAPS) / MACT 112(g)	PROCESS SAFETY MGMT (130)	DOT / DOT RQ (1100)
439	L	0-1-0 CH@S				TPQ	RQ SPCC	10000 311/312								
440	GEL	0-1-0	1000 ppm 2400 mg/m^3	750 ppm	SC	TPQ	RQ 5000	10000			FORM U	U002				3 1 5000
441	GEL	0-1-0	15 mg/m^3 *			TPQ	RQ	10000								
442	L	0-1-0				TPQ	RQ	10000								
443	L	0-1-0				TPQ	RQ	10000								
444	GEL	0-1-0				TPQ	RQ	10000	313							
445	GEL	0-1-0				TPQ	RQ	10000	313							
446	GEL	0-1-0				TPQ	RQ	10000	313							
447	GEL	0-1-0	(C)1 ppm (C)3 mg/m^3			TPQ 100	RQ 10	10000	313	SWR			2500 T	III	1500	10
448	GEL	0-1-0				TPQ	RQ 1000	10000	313	SWR						
449	GEL	0-1-0				TPQ	RQ	10000								
450	GEL	0-1-0				TPQ	RQ	10000						III		
451	GEL	0-1-0				TPQ	RQ	10000						III		
452	GEL	0-1-0				TPQ	RQ	10000								
453	GEL	0-1-0				TPQ	RQ	10000								
454	L	1-2-0 A@LES				TPQ	RQ	10000								
455	L	1-2-0 A@LES				TPQ	RQ	10000								

S=SOLID L=LIQUID G=GAS PST=PASTE SP=SOLID PARTICLE

P=FIRE P=PRESSURE R=REACTIVE A=ACUTE CH=CHRONIC

G=GENES L=LUNGS O=ORGANS E=EYES S=SKIN

C=CARCINOGEN M=MUTAGEN T=TERATOGEN S+=SUSPECTED

T - TOXIC
F - FLAMMABLE
R - REACTIVE

TITLE I: ____ VOC'S
TITLE III: 187 AIR TOXICS HAPS
TITLE IV: ACID RAIN DEPOSITORS
TITLE VI: ODC'S (CL. I-22, CL II-34)

*ACGIH - AMERICAN CONFERENCE OF GOVERNMENTAL INDUSTRIAL HYGIENISTS

CHEM ID	MSDS NO.	MANUFACTURER NAME	PRODUCT NAME	MAXIMUM WEIGHT	CAS NUMBER	CHEMICAL NAME	%	CHEMICAL WEIGHT	CONTAINER	AREA
456	162	LPS LABORATORIES, INC.	LPS 1 GREASELESS LUBRICANT	33.40	124-38-9	CARBON DIOXIDE	3	1.00	STEEL DRUM	O
457	163	LPS LABORATORIES, INC.	LPS 2 INDUSTRIAL-STRENGTH LUBRICANT	35.07	64742-47-8	ALIPHATIC PETROLEUM DISTILLATES	70	24.55	STEEL DRUM	O
458	163	LPS LABORATORIES, INC.	LPS 2 INDUSTRIAL-STRENGTH LUBRICANT	35.07	64742-53-6	DISTILLATES, PETROLEUM, HYDROTREATED LIGHT NAPHTHENIC	10	3.51	STEEL DRUM	O
459	163	LPS LABORATORIES, INC	LPS 2 INDUSTRIAL-STRENGTH LUBRICANT	35.07	124-38-9	CARBON DIOXIDE	3	1.05	STEEL DRUM	O
460	164	LPS LABORATORIES, INC.	LPS 3 HEAVY-DUTY RUST INHIBITOR	138.63	64742-88-7	FLASH NAPHTHA	80	110.90	STEEL DRUM	O
461	164	LPS LABORATORIES, INC.	LPS 3 HEAVY-DUTY RUST INHIBITOR	138.63	64742-52-5	DISTILLATES, PETROLEUM, HYDROTREATED HEAVY NAPHTHENIC	15	20.79	STEEL DRUM	O
462	164	LPS LABORATORIES, INC.	LPS 3 HEAVY-DUTY RUST INHIBITOR	138.63	124-38-9	CARBON DIOXIDE	3	4.16	STEEL DRUM	O
463	164	LPS LABORATORIES, INC.	LPS 3 HEAVY-DUTY RUST INHIBITOR	138.63	34590-94-8	DIPROPYLENE GLYCOL METHYL ETHER	3	4.16	STEEL DRUM	O
464	165	MOBIL OIL CORPORATION	MOBIL 600 W SUPER CYLINDER OIL	112.74	8016-28-2	OILS, LARD	100	112.74	STEEL DRUM	J
465	166	MOBIL OIL CORPORATION	MOBIL MULTI-PURPOSE ATF	2,204.66	122-39-4	DIPHENYLAMINE	1	22.05	STEEL DRUM	J
466	166	MOBIL OIL CORPORATION	MOBIL MULTI-PURPOSE ATF	2,204.66	108-88-3	TOLUENE	0.09	1.98	STEEL DRUM	J
467	167	MOBIL OIL CORPORATION	MOBIL SHC 632	144.81	115-86-6	TRIPHENYL PHOSPHATE	0.21	0.30	POLY DRUM	J
468	167	MOBIL OIL CORPORATION	MOBIL SHC 632	144.81	1330-78-5	PHOSPHORIC ACID, TRIS(METHYLPHENYL) ESTER	0.06	0.09	POLY DRUM	J
469	168	MOBIL OIL CORPORATION	MOBIL SHC 634	145.14	115-86-6	TRIPHENYL PHOSPHATE	0.21	0.30	STEEL DRUM	J
470	168	MOBIL OIL CORPORATION	MOBIL SHC 634	145.14	1330-78-5	PHOSPHORIC ACID, TRIS(METHYLPHENYL) ESTER	0.06	0.09	STEEL DRUM	J
471	170	VARIOUS	CARBON STEEL - HR & CR LEADED STEEL	10,600.00	7439-89-6	IRON	99	10,494.00	RAW	F & I
472	170	VARIOUS	CARBON STEEL - HR & CR LEADED STEEL	10,600.00	7440-44-0	CARBON	2	212.00	RAW	F & I

COPYRIGHT 2000, VANGUARD ENVIRONMENTAL, INC.

CHEM ID	PHYSICAL STATE	NFPA 704 / HMIS / PPACH/ GLOES	OSHA PEL / ACGIH* TLV (AIR CONTAMINANTS) (547)	CARCINOGEN (392) MUTAGEN, TERATOGEN / CALIF. SDWA PROP 65 (542)	SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT, TITLE III/EPCRA: 302 EHS (375)	304 CERCLA (775) / SPCC PLAN	311/312 HAZCOM (UNLTD)	313 "FORM R" (586) / EXEC. ORDER "12856"	STORM WATER RUNOFF/ WATER PRIORITY (273) / OPA '90	TSCA (78000) "FORM U" (510)	RCRA HAZ WASTE (586)	CLEAN AIR ACT AMENDMENTS (MAJOR AND MINOR SOURCES): RISK MGMT PROGRAM 112(r) (160)	CLEAN AIR ACT I, III, IV, VI (187 HAPS) / MACT 112(g)	PROCESS SAFETY MGMT (130)	DOT / DOT RQ (1100)
456	L	1-2-0 A@LES	5000 ppm 9000 mg/m^3	5000 ppm		TPQ	RQ	10000							2.2
457	L	1-2-0 A@LES				TPQ	RQ	10000							
458	L	1-2-0 A@LES				TPQ	RQ	10000					III		
459	L	1-2-0 A@LES	5000 ppm 9000 mg/m^3	5000 ppm		TPQ	RQ	10000							2.2
460	L	1-2-0 F/A@LES				TPQ	RQ	10000							
461	L	1-2-0 F/A@LES				TPQ	RQ	10000					III		
462	L	1-2-0 F/A@LES	5000 ppm 9000 mg/m^3	5000 ppm		TPQ	RQ	10000							2.2
463	L	1-2-0 F/A@LES	100 ppm 600 mg/m^3	100 ppm		TPQ	RQ	10000					III		
464	L	0-1-0				TPQ	RQ	10000							
465	L	0-1-0	10 mg/m^3	10 mg/m^3		TPQ	RQ	10000	313				III		
466	L	0-1-0	200 ppm	50 ppm	T PROP 65	TPQ	RQ 1000	10000	313	SWR		U220	III		3.2 1000
467	L	0-1-0	3 mg/m^3	3 mg/m^3		TPQ	RQ	10000			FORM U				
468	L	0-1-0				TPQ	RQ	10000			FORM U				
469	L	0-1-0	3 mg/m^3	3 mg/m^3		TPQ	RQ	10000			FORM U				
470	L	0-1-0				TPQ	RQ	10000			FORM U				
471	S	A/CH@LES				TPQ	RQ SPCC	10000 311/312							
472	S	A/CH@LES	2.5 mg/m^3	2 mg/m^3		TPQ	RQ SPCC	10000 311/312							4.1, 4.2

S=SOLID
L=LIQUID
G=GAS
PST=PASTE
SP=SOLID PARTICLE

F=FIRE
P=PRESSURE
R=REACTIVE
A=ACUTE
CH=CHRONIC

G=GENES
L=LUNGS
O=ORGANS
E=EYES
S=SKIN

C=CARCINOGEN
M=MUTAGEN
T=TERATOGEN
S+_=SUSPECTED

T - TOXIC
F - FLAMMABLE
R - REACTIVE

TITLE I: ___ VOC'S
TITLE III: 187 AIR TOXICS HAPS
TITLE IV: ACID RAIN DEPOSITORS
TITLE VI: ODC'S (CL. I-22, CL II-34)

*ACGIH - AMERICAN CONFERENCE OF GOVERNMENTAL INDUSTRIAL HYGIENISTS

CHEM ID	MSDS NO.	MANUFACTURER NAME	PRODUCT NAME	MAXIMUM WEIGHT	CAS NUMBER	CHEMICAL NAME	%	CHEMICAL WEIGHT	CONTAINER	AREA
473	170	VARIOUS	CARBON STEEL - HR & CR LEADED STEEL	10,600.00	7439-96-5	MANGANESE	2	212.00	RAW	F & J
474	170	VARIOUS	CARBON STEEL - HR & CR LEADED STEEL	10,600.00	7429-90-5	ALUMINUM	1	106.00	RAW	F & J
475	170	VARIOUS	CARBON STEEL - HR & CR LEADED STEEL	10,600.00	7440-69-9	BISMUTH	1	106.00	RAW	F & J
476	170	VARIOUS	CARBON STEEL - HR & CR LEADED STEEL	10,600.00	7439-92-1	LEAD	1	106.00	RAW	F & J
477	170	VARIOUS	CARBON STEEL - HR & CR LEADED STEEL	10,600.00		LEAD CARBON MIXTURE	1	106.00	RAW	F & J
478	170	VARIOUS	CARBON STEEL - HR & CR LEADED STEEL	10,600.00	7440-03-1	NIOBIUM	1	106.00	RAW	F & J
479	170	VARIOUS	CARBON STEEL - HR & CR LEADED STEEL	10,600.00	7723-14-0	PHOSPHORUS	1	106.00	RAW	F & J
480	170	VARIOUS	CARBON STEEL - HR & CR LEADED STEEL	10,600.00	7440-21-3	SILICON	1	106.00	RAW	F & J
481	170	VARIOUS	CARBON STEEL - HR & CR LEADED STEEL	10,600.00	7704-34-9	SULFUR	1	106.00	RAW	F & J
482	170	VARIOUS	CARBON STEEL - HR & CR LEADED STEEL	10,600.00	7440-62-2	VANADIUM	1	106.00	RAW	F & J
483	171	BRUSH WELLMAN ENGINEERED	COPPER BERYLLIUM WROUGHT ALLOY	275.00	7440-50-8	COPPER	99	272.25	RAW	F & J
484	171	BRUSH WELLMAN ENGINEERED	COPPER BERYLLIUM WROUGHT ALLOY	275.00	7440-48-4	COBALT	2.7	7.43	RAW	F & J
485	171	BRUSH WELLMAN ENGINEERED	COPPER BERYLLIUM WROUGHT ALLOY	275.00	7440-02-0	NICKEL	2.2	6.05	RAW	F & J
486	171	BRUSH WELLMAN ENGINEERED	COPPER BERYLLIUM WROUGHT ALLOY	275.00	7440-41-7	BERYLLIUM	2	5.50	RAW	F & J
487	171	BRUSH WELLMAN ENGINEERED	COPPER BERYLLIUM WROUGHT ALLOY	275.00	7440-67-7	ZIRCONIUM	0.3	0.83	RAW	F & J
488	172	VARIOUS	ALUMINUM ALLOYS, ALUMINUM ALLOYS	7,200.00	7429-90-5	ALUMINUM	99.7	7,178.40	RAW	F & J
489	172	VARIOUS	ALUMINUM ALLOYS, ALUMINUM ALLOYS	7,200.00	7440-50-8	COPPER	10	720.00	RAW	F & J

COPYRIGHT 2000 VANGUARD ENVIRONMENTAL, INC.

CHEM ID	PHYSICAL STATE	NFPA 704/ FPRACH/ GLOES	OSHA PEL 29 CFR 1910.1000 (AIR CONTAMINANTS) (547)	ACGIH* TLV	CARCINOGEN (392) MUTAGEN, TERATOGEN / CALIF. SDWA PROP 65 (542)	302 EHS (375)	304 CERCLA (775) / SPCC PLAN	311/312 HAZCOM (UNLTD)	313 "FORM R" (586) / EXEC. ORDER "12856"	STORM WATER RUNOFF/ WATER PRIORITY (273) / OPA '90	TSCA (78000) "FORM U" (510)	RCRA HAZ WASTE (586)	RISK MGMT PROGRAM 112(r) (160)	CLEAN AIR ACT I, III, IV, VI (187 HAPS) / MACT 112(g)	PROCESS SAFETY MGMT (130)	DOT / DOT RQ (1100)
			SAFETY, HEALTH AND INDUSTRIAL HYGIENE			SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT, TITLE III/EPCRA							CLEAN AIR ACT AMENDMENTS (MAJOR AND MINOR SOURCES)			
473	S	A/CH@LES	(C)5 mg/m^3	1 mg/m^3		TPQ	RQ SPCC	10000 311/312	313					III		
474	S	A/CH@LES	15 mg/m^3 *	5 mg/m^3		TPQ	RQ SPCC	10000 311/312	313	SWR						4.1, 4.2, 4.3
475	S	A/CH@LES				TPQ	RQ SPCC	10000 311/312								
476	S	A/CH@LES	§1910 1025	0.15 mg/m^3	SC PROP 65	TPQ	RQ 10 SPCC	10000 311/312	313	SWR				III		1
477	S	A/CH@LES				TPQ	RQ SPCC	10000 311/312								
478	S	A/CH@LES				TPQ	RQ SPCC	10000 311/312								
479	S	A/CH@LES	0.1 mg/m^3	0.1 mg/m^3		TPQ 100	RQ 1 SPCC	10000 311/312	313	SWR				III		4.1, 6.1 1
480	S	A/CH@LES	15 mg/m^3 *	10 mg/m^3		TPQ	RQ SPCC	10000 311/312								4.1
481	S	A/CH@LES				TPQ	RQ SPCC	10000 311/312								
482	S	A/CH@LES	0.05 mg/m^3			TPQ	RQ SPCC	10000 311/312	313	SWR						
483	S	A/CH@LES	FUME: 0.1 mg/m^3	1 mg/m^3		TPQ	RQ 5000	10000	313	SWR						5000
484	S	A/CH@LES	0.1 mg/m^3	0.05 mg/m^3	C PROP 65	TPQ	RQ	10000	313					III		
485	S	A/CH@LES	1 mg/m^3	1 mg/m^3	SC PROP 65	TPQ	RQ 100	10000	313	SWR				III		100
486	S	A/CH@LES	0.002 mg/m^3	0.002 mg/m^3	SC PROP 65	TPQ	RQ 10	10000	313	SWR		P015		III		6.1, 4.1 10
487	S	A/CH@LES	5 mg/m^3	5 mg/m^3		TPQ	RQ	10000								4.1, 4.2
488	S	A/CH@LES	15 mg/m^3 *	5 mg/m^3		TPQ	RQ SPCC	10000	313	SWR						4.1, 4.2, 4.3
489	S	A/CH@LES	FUME: 0.1 mg/m^3	1 mg/m^3		TPQ	RQ 5000 SPCC	10000	313	SWR						5000

[illegible] G=GENES [illegible] G=CARCINOGEN
[illegible] L=LUNGS M=MUTAGEN
G=GAS [illegible] R=REACTIVE O=ORGANS T=TERATOGEN
PST=PASTE A=ACUTE E=EYES S+_=SUSPECTED
SP=SOLID CH=CHRONIC S=SKIN
PARTICLE

*ACGIH - AMERICAN CONFERENCE OF GOVERNMENTAL INDUSTRIAL HYGIENISTS

T - TOXIC
F - FLAMMABLE
R - REACTIVE

TITLE I: ___ VOC'S
TITLE III: 187 AIR TOXICS HAPS
TITLE IV: ACID RAIN DEPOSITORS
TITLE VI: ODC'S (CL. I-22, CL. II-34)

CHEM ID	MSDS NO.	MANUFACTURER NAME	PRODUCT NAME	MAXIMUM WEIGHT	CAS NUMBER	CHEMICAL NAME	%	CHEMICAL WEIGHT	CONTAINER	AREA
490	172	VARIOUS	ALUMINUM ALLOYS, ALUMINUM ALLOYS	7,200.00	7439-95-4	MAGNESIUM	10	720.00	RAW	F & J
491	172	VARIOUS	ALUMINUM ALLOYS, ALUMINUM ALLOYS	7,200.00	7440-66-6	ZINC	10	720.00	RAW	F & J
492	172	VARIOUS	ALUMINUM ALLOYS, ALUMINUM ALLOYS	7,200.00	7440-48-4	COBALT	2	144.00	RAW	F & J
493	172	VARIOUS	ALUMINUM ALLOYS, ALUMINUM ALLOYS	7,200.00	7439-89-6	IRON	2	144.00	RAW	F & J
494	172	VARIOUS	ALUMINUM ALLOYS, ALUMINUM ALLOYS	7,200.00	7439-96-5	MANGANESE	2	144.00	RAW	F & J
495	172	VARIOUS	ALUMINUM ALLOYS, ALUMINUM ALLOYS	7,200.00	7440-21-3	SILICON	2	144.00	RAW	F & J
496	172	VARIOUS	ALUMINUM ALLOYS, ALUMINUM ALLOYS	7,200.00	7440-31-5	TIN	2	144.00	RAW	F & J
497	172	VARIOUS	ALUMINUM ALLOYS, ALUMINUM ALLOYS	7,200.00	7439-92-1	LEAD	1	72.00	RAW	F & J
498	172	VARIOUS	ALUMINUM ALLOYS, ALUMINUM ALLOYS	7,200.00	7440-47-3	CHROMIUM	0.5	36.00	RAW	F & J
499	172	VARIOUS	ALUMINUM ALLOYS, ALUMINUM ALLOYS	7,200.00	7440-02-0	NICKEL	0.5	36.00	RAW	F & J
500	173	VARIOUS	STAINLESS STEEL	5,700.00	7439-89-6	IRON	88	5,016.00	RAW	F & J
501	173	VARIOUS	STAINLESS STEEL	5,700.00	7440-47-3	CHROMIUM	30	1,710.00	RAW	F & J
502	173	VARIOUS	STAINLESS STEEL	5,700.00	7440-02-0	NICKEL	27	1,539.00	RAW	F & J
503	173	VARIOUS	STAINLESS STEEL	5,700.00	7440-50-8	COPPER	6	342.00	RAW	F & J
504	173	VARIOUS	STAINLESS STEEL	5,700.00	7439-96-5	MANGANESE	6	342.00	RAW	F & J
505	173	VARIOUS	STAINLESS STEEL	5,700.00	7439-98-7	MOLYBDENUM	6	342.00	RAW	F & J
506	173	VARIOUS	STAINLESS STEEL	5,700.00	7440-32-6	TITANIUM	6	342.00	RAW	F & J

COPYRIGHT 2000, VANGUARD ENVIRONMENTAL INC.
TULSA, OK

CHEM ID	PHYSICAL STATE	NFPA 704/ FPRACH/ GLOES	OSHA PEL 29 CFR 1910.1000 (AIR CONTAMINANTS) (547)	ACGIH* TLV	CARCINOGEN (392) MUTAGEN, TERATOGEN / CALIF. SDWA PROP 65 (542)	SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT, TITLE III/EPCRA: 302 EHS (375)	304 CERCLA (775) / SPCC PLAN	311/312 HAZCOM (UNLTD)	313 "FORM R" (586) / EXEC. ORDER "12856"	STORM WATER RUNOFF/ WATER PRIORITY (273) / OPA '90	TSCA (78000) "FORM U" (510)	RCRA HAZ WASTE (586)	CLEAN AIR ACT AMENDMENTS (MAJOR AND MINOR SOURCES): RISK MGMT PROGRAM 112(r) (160)	CLEAN AIR ACT I, III, IV, VI (187 HAPS) / MACT 112(g)	PROCESS SAFETY MGMT (130)	DOT / DOT RQ (1100)
490	S	A/CH@LES				TPQ	RQ SPCC	10000								
491	S	A/CH@LES				TPQ	RQ 1000 SPCC	10000	313	SWR						
492	S	A/CH@LES	0.1 mg/m^3	0.05 mg/m^3	C PROP 65	TPQ	RQ SPCC	10000	313					III		
493	S	A/CH@LES				TPQ	RQ SPCC	10000								
494	S	A/CH@LES	(C)5 mg/m^3	1 mg/m^3		TPQ	RQ SPCC	10000	313					III		
495	S	A/CH@LES	15 mg/m^3 *	10 mg/m^3		TPQ	RQ SPCC	10000								4.1
496	S	A/CH@LES	2 mg/m^3	0.1 mg/m^3		TPQ	RQ SPCC	10000								
497	S	A/CH@LES	§1910.1025	0.15 mg/m^3	SC PROP 65	TPQ	RQ 10 SPCC	10000	313	SWR				III		1
498	S	A/CH@LES	0.5 mg/m^3	0.5 mg/m^3	C PROP 65	TPQ	RQ 5000 SPCC	10000	313	SWR				III		5000
499	S	A/CH@LES	1 mg/m^3	1 mg/m^3	SC PROP 65	TPQ	RQ 100 SPCC	10000	313	SWR				III		100
500	S	A/CH@LES				TPQ	RQ SPCC	10000								
501	S	A/CH@LES	0.5 mg/m^3	0.5 mg/m^3	C PROP 65	TPQ	RQ 5000 SPCC	10000	313	SWR				III		5000
502	S	A/CH@LES	1 mg/m^3	1 mg/m^3	SC PROP 65	TPQ	RQ 100 SPCC	10000	313	SWR				III		100
503	S	A/CH@LES	FUME: 0.1 mg/m^3	1 mg/m^3		TPQ	RQ 5000 SPCC	10000	313	SWR						5000
504	S	A/CH@LES	(C)5 mg/m^3	1 mg/m^3		TPQ	RQ SPCC	10000	313					III		
505	S	A/CH@LES	SOLUBLE: 5 mg/m^3	5 mg/m^3		TPQ	RQ SPCC	10000								
506	S	A/CH@LES				TPQ	RQ SPCC	10000								

G-GAS R-REACTIVE O-ORGANS
PST-PASTE A-ACUTE E-EYES
SP-SOLID CH-CHRONIC S-SKIN
PARTICLE

C-CARCINOGEN
M-MUTAGEN
T-TERATOGEN
S+-SUSPECTED

T - TOXIC
F - FLAMMABLE
R - REACTIVE

TITLE I: ____ VOC'S
TITLE III: 187 AIR TOXICS HAPS
TITLE IV: ACID RAIN DEPOSITORS
TITLE VI: ODC'S (CL. I-22, CL II-34)

*ACGIH - AMERICAN CONFERENCE OF GOVERNMENTAL INDUSTRIAL HYGIENISTS

CHEM ID	MSDS NO.	MANUFACTURER NAME	PRODUCT NAME	MAXIMUM WEIGHT	CAS NUMBER	CHEMICAL NAME	%	CHEMICAL WEIGHT	CONTAINER	AREA
507	173	VARIOUS	STAINLESS STEEL	5,700.00	7440-44-0	CARBON	2	114.00	RAW	I & J
508	173	VARIOUS	STAINLESS STEEL	5,700.00	7440-48-4	COBALT	2	114.00	RAW	I & J
509	173	VARIOUS	STAINLESS STEEL	5,700.00	7440-03-1	NIOBIUM	2	114.00	RAW	I & J
510	173	VARIOUS	STAINLESS STEEL	5,700.00	7727-37-9	NITROGEN	2	114.00	RAW	I & J
511	173	VARIOUS	STAINLESS STEEL	5,700.00	7723-14-0	PHOSPHORUS	2	114.00	RAW	F & J
512	173	VARIOUS	STAINLESS STEEL	5,700.00	7440-21-3	SILICON	2	114.00	RAW	F & J
513	173	VARIOUS	STAINLESS STEEL	5,700.00	7704-34-9	SULFUR	2	114.00	RAW	F & J
514	173	VARIOUS	STAINLESS STEEL	5,700.00	7440-31-5	TIN	2	114.00	RAW	F & J
515	175	EXXON COMPANY, U.S.A.	RUST-BAN 392	367.44	64742-47-8	ALIPHATIC PETROLEUM DISTILLATES	92	338.05	STEEL DRUM	O
516	175	EXXON COMPANY, U.S.A.	RUST-BAN 392	367.44		PROPRIETARY ADDITIVES MIXTURE	8	29.40	STEEL DRUM	O
517	176	MOBIL OIL CORPORATION	MOBIL VACTRA OIL NO. 1	144.97		ADDITIVES MIXTURE	100	144.97	STEEL DRUM	J
518	176	MOBIL OIL CORPORATION	MOBIL VACTRA OIL NO. 1	144.97	64742-49-0	PETROLEUM HYDROCARBON	100	144.97	STEEL DRUM	J
519	177	MOBIL OIL CORPORATION	MOBIL DTE 13M	146.48	68649-42-3	ZINC DIALKYLDITHIOPHOSPHATE	0.67	0.98	STEEL DRUM	J
520	177	MOBIL OIL CORPORATION	MOBIL DTE 13M	146.48	7440-66-6	ZINC	0.1	0.15	STEEL DRUM	J
521	178	MULLEN CIRCLE BRAND, INC.	INSTED-A-LED	116.91	70592-78-8	PETROLEUM OIL	1	1.17	CAN	A
522	179	MAN-GILL CHEMICAL	RUSTAREST 53216	1,001.28	111-42-2	DIETHANOLAMINE	5	50.06	STEEL DRUM	C & O
523	180	THE DEXTER CORPORATION	POLYURETHANE CATALYST	8.85	28182-81-2	POLYHEXAMETHYLENE DISOCYANATE	80	7.08	CAN	B

COPYRIGHT, 2000, VANGUARD ENVIRONMENTAL, INC.

CHEM ID	PHYSICAL STATE	SAFETY, HEALTH AND INDUSTRIAL HYGIENE: NFPA 704 FPRACH/ GLOES	OSHA PEL 29 CFR 1910.1000 (AIR CONTAMINANTS) (547)	ACGIH TLV	CARCINOGEN (392) MUTAGEN, TERATOGEN / CALIF. SDWA PROP 65 (542)	SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT, TITLE III/EPCRA: 302 EHS (375)	304 CERCLA (775) / SPCC PLAN	311/312 HAZCOM (UNLTD)	313 "FORM R" (586) / EXEC. ORDER "12856"	STORM WATER RUNOFF/ WATER PRIORITY (273) / OPA '90	TSCA (78000) "FORM U" (510)	RCRA HAZ WASTE (586)	CLEAN AIR ACT AMENDMENTS (MAJOR AND MINOR SOURCES): RISK MGMT PROGRAM 112(r) (160)	CLEAN AIR ACT I, III, IV, VI (187 HAPS) / MACT 112(g)	PROCESS SAFETY MGMT (130)	DOT / DOT RQ (1100)
507	S	A/CH@LES	2.5 mg/m^3	2 mg/m^3		TPQ	RQ SPCC	10000								4.1, 4.2
508	S	A/CH@LES	0.1 mg/m^3	0.05 mg/m^3	C PROP 65	TPQ	RQ SPCC	10000	313					III		
509	S	A/CH@LES				TPQ	RQ SPCC	10000								
510	S	A/CH@LES				TPQ	RQ SPCC	10000								
511	S	A/CH@LES	0.1 mg/m^3	0.1 mg/m^3		TPQ 100	RQ 1 SPCC	10000	313	SWR				III		4.1, 6.1 1
512	S	A/CH@LES	15 mg/m^3 *	10 mg/m^3		TPQ	RQ SPCC	10000								4.1
513	S	A/CH@LES				TPQ	RQ SPCC	10000								
514	S	A/CH@LES	2 mg/m^3	0.1 mg/m^3		TPQ	RQ SPCC	10000								
515	L	1-2-0 F/A@LES				TPQ	RQ	10000								
516	L	1-2-0 F/A@LES				TPQ	RQ	10000								
517	L	0-1-0				TPQ	RQ	10000								
518	L	0-1-0				TPQ	RQ	10000								
519	L	0-1-0				TPQ	RQ	10000	313							
520	L	0-1-0				TPQ	RQ 1000	10000	313	SWR						
521	PST	1-1-0 A@LES				TPQ	RQ	10000								
522	L	1-0-0 A@LES	3 ppm	3 ppm		TPQ	RQ 100	10000	313					III		
523	L	3-3-0 F/R/A/CH@LOES				TPQ	RQ	10000						III		

S=SOLID
L=LIQUID
G=GAS
PST=PASTE
SP=SOLID PARTICLE

F=FIRE
P=PRESSURE
R=REACTIVE
A=ACUTE
CH=CHRONIC

G=GENES
L=LUNGS
O=ORGANS
E=EYES
S=SKIN

C=CARCINOGEN
M=MUTAGEN
T=TERATOGEN
S+_=SUSPECTED

T - TOXIC
F - FLAMMABLE
R - REACTIVE

TITLE I: ____ VOC'S
TITLE III: 187 AIR TOXICS HAPS
TITLE IV: ACID RAIN DEPOSITORS
TITLE VI: ODC'S (CL. I-22, CL II-34)

*ACGIH - AMERICAN CONFERENCE OF GOVERNMENTAL INDUSTRIAL HYGIENISTS

CHEM ID	MSDS NO.	MANUFACTURER NAME	PRODUCT NAME	MAXIMUM WEIGHT	CAS NUMBER	CHEMICAL NAME	%	CHEMICAL WEIGHT	CONTAINER	AREA
524	180	THE DEXTER CORPORATION	POLYURETHANE CATALYST	8.85	123-86-4	BUTYL ACETATE	20	1.77	CAN	B
525	180	THE DEXTER CORPORATION	POLYURETHANE CATALYST	8.85	1330-20-7	XYLENE	20	1.77	CAN	B
526	180	THE DEXTER CORPORATION	POLYURETHANE CATALYST	8.85	822-06-0	HEXAMETHYLENE-1,6-DIISOCYANATE	10	0.89	CAN	B
527	181	DEXTER-CROWN METRO	POLYURETHANE TOPCOAT - CLEAR	8.77	108-65-6	1-METHOXY-2-ACETOXYPROPANE	65	5.70	CAN	B
528	183	SANDVIK COROMANT COMPANY	ALL SANDVIK COROMANT CERMET GRADES	10.00	13463-67-7	TITANIUM DIOXIDE	53	5.30	RAW	D
529	183	SANDVIK COROMANT COMPANY	ALL SANDVIK COROMANT CERMET GRADES	10.00	12070-12-1	TUNGSTEN CARBIDE	46	4.60	RAW	D
530	183	SANDVIK COROMANT COMPANY	ALL SANDVIK COROMANT CERMET GRADES	10.00	12070-06-3	TANTALUM CARBIDE	18	1.80	RAW	D
531	183	SANDVIK COROMANT COMPANY	ALL SANDVIK COROMANT CERMET GRADES	10.00	7440-02-0	NICKEL	15	1.50	RAW	D
532	183	SANDVIK COROMANT COMPANY	ALL SANDVIK COROMANT CERMET GRADES	10.00	7440-48-4	COBALT	13	1.30	RAW	D
533	183	SANDVIK COROMANT COMPANY	ALL SANDVIK COROMANT CERMET GRADES	10.00	7440-47-3	CHROMIUM	3	0.30	RAW	D
534	183	SANDVIK COROMANT COMPANY	ALL SANDVIK COROMANT CERMET GRADES	10.00	1344-28-1	ALUMINUM OXIDE	2	0.20	RAW	D
535	183	SANDVIK COROMANT COMPANY	ALL SANDVIK COROMANT CERMET GRADES	10.00	1303-86-2	BORON OXIDE	2	0.20	RAW	D
536	183	SANDVIK COROMANT COMPANY	ALL SANDVIK COROMANT CERMET GRADES	10.00	12012-35-0	CHROMIUM CARBIDE	2	0.20	RAW	D
537	183	SANDVIK COROMANT COMPANY	ALL SANDVIK COROMANT CERMET GRADES	10.00	7439-98-7	MOLYBDENUM	2	0.20	RAW	D
538	183	SANDVIK COROMANT COMPANY	ALL SANDVIK COROMANT CERMET GRADES	10.00	7440-67-7	ZIRCONIUM	2	0.20	RAW	D
539	184	SANDVIK COROMANT COMPANY	CC670	10.00	1344-28-1	ALUMINUM OXIDE	90	9.00	RAW	D
540	184	SANDVIK COROMANT COMPANY	CC670	10.00	409-21-2	SILICON CARBIDE	40	4.00	RAW	D

COPYRIGHT 2000, VANGUARD ENVIRONMENTAL, INC.
TULSA, OK

CHEM ID	PHYSICAL STATE	SAFETY, HEALTH AND INDUSTRIAL HYGIENE: NFPA 704/ FPRACH/ GLOES	OSHA PEL 29 CFR 1910.1000 (AIR CONTAMINANTS) (547)	ACGIH* TLV	CARCINOGEN (392) MUTAGEN, TERATOGEN / CALIF. SDWA PROP 65 (542)	SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT, TITLE III/EPCRA: 302 EHS (375)	304 CERCLA (775) / SPCC PLAN	311/312 HAZCOM (UNLTD)	313 "FORM R" (586) / EXEC. ORDER "12856"	STORM WATER RUNOFF/ WATER PRIORITY (273) / OPA '90	TSCA (78000) "FORM U" (510)	RCRA HAZ WASTE (586)	CLEAN AIR ACT AMENDMENTS (MAJOR AND MINOR SOURCES): RISK MGMT PROGRAM 112(r) (160)	CLEAN AIR ACT I, III, IV, VI (187 HAPS) / MACT 112(g)	PROCESS SAFETY MGMT (130)	DOT / DOT RQ (1100)
524	L	3-3-0 F/R/A/CH@LOES	150 ppm 710 mg/m^3	150 ppm		TPQ	RQ 5000	10000			FORM U					3.2 5000
525	L	3-3-0 F/R/A/CH@LOES	100 ppm 435 mg/m^3	100 ppm		TPQ	RQ 100	10000	313	SWR		U239		III		3.3 1000
526	L	3-3-0 F/R/A/CH@LOES		0.005 ppm		TPQ	RQ 100	10000	313#		FORM U			III		6.1
527	L	F/A/CH@LES				TPQ	RQ	10000								
528	S	A/CH@LES	15 mg/m^3 *	10 mg/m^3	C	TPQ	RQ	10000								
529	S	A/CH@LES				TPQ	RQ	10000								
530	S	A/CH@LES				TPQ	RQ	10000								
531	S	A/CH@LES	1 mg/m^3	1 mg/m^3	SC PROP 65	TPQ	RQ 100	10000	313	SWR				III		100
532	S	A/CH@LES	0.1 mg/m^3	0.05 mg/m^3	C PROP 65	TPQ	RQ	10000	313					III		
533	S	A/CH@LES	0.5 mg/m^3	0.5 mg/m^3	C PROP 65	TPQ	RQ 5000	10000	313	SWR				III		5000
534	S	A/CH@LES	15 mg/m^3 *	10 mg/m^3		TPQ	RQ	10000	313							
535	S	A/CH@LES	15 mg/m^3 *	10 mg/m^3		TPQ	RQ	10000								
536	S	A/CH@LES			C PROP 65	TPQ	RQ	10000	313					III		
537	S	A/CH@LES	SOLUBLE: 5 mg/m^3	5 mg/m^3		TPQ	RQ	10000								
538	S	A/CH@LES	5 mg/m^3	5 mg/m^3		TPQ	RQ	10000								4.1, 4.2
539	S	A/CH@LES	15 mg/m^3 *	10 mg/m^3		TPQ	RQ	10000	313							
540	S	A/CH@LES	15 mg/m^3 *	10 mg/m^3		TPQ	RQ	10000								

S-SOLID, F-FIRE, G-GENES, L-LIQUID, P-PRESSURE, U-LUNGS, G-GAS, R-REACTIVE, O-ORGANS, PST-PASTE, A-ACUTE, E-EYES, SP-SOLID, CH-CHRONIC, S-SKIN, PARTICLE

C-CARCINOGEN, M-MUTAGEN, T-TERATOGEN, S+ -SUSPECTED

*ACGIH - AMERICAN CONFERENCE OF GOVERNMENTAL INDUSTRIAL HYGIENISTS

T - TOXIC
F - FLAMMABLE
R - REACTIVE

TITLE I: ___ VOC'S
TITLE III: 187 AIR TOXICS HAPS
TITLE IV: ACID RAIN DEPOSITORS
TITLE VI: ODC'S (CL. I-22, CL II-34)

CHEM ID	MSDS NO.	MANUFACTURER NAME	PRODUCT NAME	MAXIMUM WEIGHT	CAS NUMBER	CHEMICAL NAME	%	CHEMICAL WEIGHT	CONTAINER	AREA
541	185	SANDVIK COROMANT COMPANY	SANDVIK COROMANT GRADE CC620	10.00	1344-28-1	ALUMINUM OXIDE	98	9.80	RAW	D
542	185	SANDVIK COROMANT COMPANY	SANDVIK COROMANT GRADE CC620	10.00	7440-67-7	ZIRCONIUM	2	0.20	RAW	D
543	186	MASTER APPLIANCE CORPORATION	3W799	5.00	75-28-5	ISOBUTANE	100	5.00	CYLINDER	E
544	187	AMERICAN COLLOID COMPANY	OIL ABSORBENT	2,000.00	14808-60-7	CRYSTALLINE SILICA	6	120.00	BAG	PLANT WIDE

MAXIMUM WEIGHT AGGREGATE= 258,585.89 CHEMICAL WEIGHT AGGREGATE= 250,461.10

CHEM ID	PHYSICAL STATE	SAFETY, HEALTH AND INDUSTRIAL HYGIENE: NFPA 704/ FPRACH/ GLOES	OSHA PEL 29 CFR 1910.1000 (AIR CONTAMINANTS) (547)	ACGIH TLV	CARCINOGEN (392) MUTAGEN, TERATOGEN / CALIF. SDWA PROP 65 (542)	SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT, TITLE III/EPCRA: 302 EHS (375)	304 CERCLA (775) / SPCC PLAN	311/312 HAZCOM (UNLTD)	313 "FORM R" (586) / EXEC. ORDER "12856"	STORM WATER RUNOFF/ WATER PRIORITY (273) / OPA '90	TSCA (78000) "FORM U" (510)	RCRA HAZ WASTE (586)	CLEAN AIR ACT AMENDMENTS (MAJOR AND MINOR SOURCES): RISK MGMT PROGRAM 112(r) (160)	CLEAN AIR ACT I, III, IV, VI (187 HAPS) / MACT 112(g)	PROCESS SAFETY MGMT (130)	DOT / DOT RQ (1100)
541	S	A/CH@LES	15 mg/m^3 *	10 mg/m^3		TPQ	RQ	10000	313							
542	S	A/CH@LES	5 mg/m^3	5 mg/m^3		TPQ	RQ	10000								4.1, 4.2
543	G	F/A@LES				TPQ	RQ	10000					10000 F			
544	SP	A@L	30 mg/m^3	0.1 mg/m^3	C	TPQ	RQ	10000								

[illegible]
PST=PASTE A=ACUTE E=EYES
SP=SOLID CH=CHRONIC S=SKIN
PARTICLE

[illegible]
T=TERATOGEN
SUSPECTED

T - TOXIC
F - FLAMMABLE
R - REACTIVE

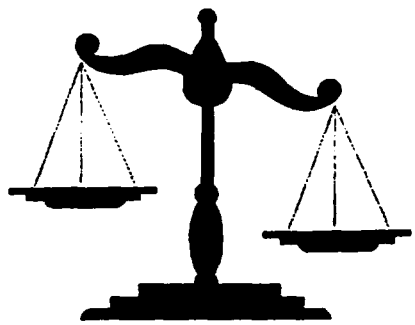
TITLE I: VOC'S
TITLE III: 187 AIR TOXICS HAPS
TITLE IV: ACID RAIN DEPOSITORS
TITLE VI: ODC'S (CL. I-22, CL II-34)

*ACGIH - AMERICAN CONFERENCE OF GOVERNMENTAL INDUSTRIAL HYGIENISTS

VANGUARD
ENVIRONMENTAL, INC.
ENVIRONMENTAL & SAFETY COMPLIANCE SPECIALISTS

Part 3

RISK MANAGEMENT AGAINST ENFORCEMENT PENALTIES



Downside Risk and Upside Potential

It is one of the integral abilities of a good leader to not only be able to weigh downside risk against upside potential, but also to be able to minimize that risk while maximizing opportunity. It is one of the many goals of Vanguard Environmental, Inc. to assist you in minimizing and, hopefully, eliminating the risk of enforcement penalties.

When we work with people in business and industry who might be unaware of the environmental laws that affect their company, we are often asked two basic questions:

- **Is it a law?**
- **Is it enforced?**

As this section will demonstrate, SARA Title III (1986) is, indeed, a law, and is, indeed, enforced. It will also demonstrate to you some of the pitfalls you have avoided by enlisting our assistance in doing your EPA Environmental Compliance Reporting under Sections 301-312.

Enforcement penalty information is provided purely for informational purposes. You must draw your own conclusions for the purpose of future risk management. Vanguard Environmental, Inc. neither serves as a spokesperson for EPA enforcement, nor can know unequivocally what the EPA will do in any given case. But, based on research of the history of EPA enforcement, it is highly recommended that compliance be a goal for every company that falls under the law's requirements.

SARA TITLE III...Enforcement

Before going any further, it might be profitable to describe what SARA Title III is: what each section of it covers and what its requirements and deadlines are.

SUMMARY OF TITLE III REQUIREMENTS

SECTION	COVERAGE/ TOPIC	REQUIREMENT	RELEVANT CHEMICAL LIST	DEAD LINES	INITIAL PENALTIES
301-303	Emergency Planning	LEPC Emergency Plan	Extremely Hazardous Substances	10-17-88	$25,000
304	Emergency Notification	Accidental Release Reporting	EHS's and CERCLA SS 102(a) Substances	Currently in Effect	$25,000
311	Community Right-to-Know	MSDS's or List of Chemicals	OSHA Hazardous Chemicals	10-17-87-Manufacturing 9-24-88-Non-Man. 4-30-89-Construction	$10,000
312	Community Right-to-Know	Inventories and Locations	OSHA Hazardous Chemicals	3/1, Annually (Tier I or Tier II)	$25,000
313	Toxic Chemical Release Reporting	Form R, Total Annual Release	Toxic Chemicals and Chemical Categories	7/1, Annually	$25,000

CIVIL AND CRIMINAL PENALTIES

Now that you know what SARA Title III is and what it requires of you, you may be interested in knowing about the repercussions associated with non-compliance. Such enforcement policies are generally echoed throughout other EPA legislation.

Civil Penalties

Any person(s) who fails to comply with the reporting requirements is subject to civil penalties of up to $25,000 for each violation under Section 325(b)(1) of the SARA Title III Act.

Civil Penalties for Continuing Violations

Any person(s) failing to comply with the reporting requirements is subject to civil penalties of up to $25,000 for each day that the violation continues. Section 325(b)(2) of SARA Title III provides for daily penalties of up to $75,000 for each day that the violation continues.

Criminal Penalties

Any person(s) convicted of knowingly and willfully failing to provide the required notice can be fined up to $25,000, or imprisoned for up to two years, or both. In second or subsequent convictions, the person(s) can be fined up to $50,000, or imprisoned up to five years, or both. SERC's and LEPC's are by no means powerless when a company fails to comply with right-to-know laws. A variety of options are available to coerce lax facilities into compliance, including Federal enforcement actions. Under Section 325 of the Emergency Planning and Community Right-to-Know Act, the Federal government is authorized to bring administrative and civil or criminal judicial action against violators. The EPA can assess civil and administrative penalties ranging from $10,000 per violation to $75,000 per day on the owner or operator of a facility that fails to comply with emergency planning (Sec. 302), emergency notification (Sec. 304), community right-to-know (Sec.'s. 311-312), toxic chemical release (Sec. 313), and trade secret reporting requirements (Sec.'s. 322-323).

Criminal penalties of up to $50,000 or five years in prison may also be levied on any person who knowingly and willfully fails to provide emergency release notification. From

1987-91, there have been more than four hundred SARA Title III complaints filed. Total penalties have reached $11,000,000.

Section 326 of SARA Title III authorizes state and local suits, as well. State and local governments have the authority to bring civil actions in U.S. District Court for failure to notify under Sec. 302, failure to provide information under Sec. 303, failure to submit facility specific chemical inventory information from MSDS's as required under Sec. 311, and failure to submit facility-specific chemical inventory information required under Sec. 312.

NOTE

THESE ACTIONS DO NOT REQUIRE PRIOR NOTIFICATION. SARA TITLE III EVEN AUTHORIZES CITIZENS TO INITIATE CIVIL ACTIONS AGAINST THE EPA, SERC'S, AND/OR THE OWNER/OPERATOR OF A FACILITY FOR FAILURE TO MEET LEGAL REQUIREMENTS.

Setting Examples

Some LEPC's have used enforcement measures against individual offenders as a means of improving voluntary compliance among other facilities. In these cases, the LEPC might enforce Title III requirements at a particular facility within the community and then publicize the results widely. This can be a simple, cost-effective way of getting fast results, since no facility wants negative publicity in local newspapers, radio, or TV. Other facilities will be likely to respond if they are faced with a fine or another intangible example of what might happen if they fail to comply.

A large-scale enforcement initiative is another effective way to use publicity to increase compliance. In a national initiative, cases throughout all ten EPA regions are filed simultaneously and then publicized both in the regions and at Headquarters. Between 1988 and 1990, the EPA conducted three such coast-to-coast enforcement initiatives to highlight the requirements and "encourage" the compliance of other

facilities. These sweeps heighten community awareness and cause many facilities to realize the need to comply in order to avoid uninvited public scrutiny, not to mention massive fines.

"Ignorance is No Defense"

For companies, as well as for individuals, ignorance is no defense when it comes to breaking the law. The 1947 Supreme Court decision, Federal Insurance Corp. v. Merrill, stated that "Everyone is charged with knowledge of the United States Statutes at large." This means that facility operators can't claim ignorance of Emergency Planning and Community Right-to-Know Act/SARA Title III requirements as an excuse for noncompliance.

ENVIRONMENTAL CRIMES

So SARA Title III is, indeed, a law...and it is enforced!

Consider the following:

- **Between 1983 and 1993, the Department of Justice indicted 322 corporations and 720 individuals for environmental crimes.**
- **Of those 1,042 indictments, prosecutors returned 768 convictions and guilty pleas in the Federal Courts of the United States--249 against corporations and 519 against individuals: a success rate for the DOJ of almost 75%.**
- **In addition to the almost two hundred and fifty million dollars in fines that have been levied, more than 450 years of imprisonment have been imposed, of which over 210 years constitute actual confinement.**
- **In case you were wondering, probation is rare in such cases, and the prison sentence for a first-time offender can range up to 20-24 months.**

Source: "Be Prepared for that EPA Inspection," by T. Hohman, C. Sullivan, and T. McNamee. In Chemical Engineering Progress, November 1993, p. 67.

The figures enumerated represent DOJ prosecution of all environmental crimes. But you can rest assured that, as SARA Title III is a Federal law, the Department of Justice watches it just as carefully as they do any other Environmental/Health/Safety Compliance laws.

Yes, it very much *is* enforced.

WHO PAYS?

You may have noticed that violators face up to two years in a Federal penitentiary. It may interest you to know who, precisely, according to a September 9, 1992 statement read before the House Subcommittee on Oversight and Intervention and the House Committee on Environment and Commerce, was doing that time:

"Since 1982," the Congressmen were told, "957 corporations or individuals were indicted; of those, [455 resulted in convictions of]:

- 209 Presidents/CEO's
- 58 Vice Presidents
- 43 Directors
- 49 Supervisors
- 96 Managers (Environmental and/or Safety)."

Categorically, potentially responsible parties (PRP's) included:

- The Owner/Operator
- The Generator
- The Waste Disposal Firm
- The Transporter
- The Responsible Corporate Officer
- The Landlord
- The Successor (yes, responsibility can be hereditary)

"Willful blindness can constitute knowledge, and, therefore, becomes negligent endangerment," the Congressmen were told.

EPA PRESS RELEASE (1996)

The EPA makes no secret of its willingness to pursue prosecutions against corporations and individuals. Quite the contrary. It *advertises* that willingness:

EPA Environmental News

FOR RELEASE: MONDAY, JULY 15, 1996

EPA CITES 42 COMPANIES FOR FAILURE TO PROVIDE DATA ON TOXIC CHEMICAL RELEASES

The U.S. Environmental Protection Agency today fined 42 companies a total of over $2 million for failing to report community right to know information on the types and quantity of toxic chemicals they released into the environment. The data, required under the Toxic Release Inventory (TRI), provide the only publicly available database on releases of toxic chemicals from more than 23,000 industrial facilities located in communities across the nation.

"Communities have a right to know about releases of toxic chemicals into the environment," said EPA Administrator Carol M. Browner. "The Clinton Administration has acted to expand complete and accurate right-to-know information that is essential to protecting the health of our communities."

The complaints in today's initiative seek fines from companies that have failed to comply with the community right-to-know provisions and supply the required TRI data for more than 300 chemicals for the years 1990 through 1994.

Steven Herman, Assistant Administrator for Enforcement and Compliance Assurance, said, "All of the violations announced today resulted from government inspections, not from voluntary disclosure by the companies or because they sought help through state environmental technical assistance programs. These enforcement actions should be a wake-up call to other companies that are not complying with the TRI reporting requirements.

On Nov. 30, 1995, the Administration almost doubled from 337 to 648 the number of chemicals to be reported under TRI. The first round of this expanded TRI reporting is due on Aug. 1, 1996. On June 26, Vice President Al Gore and Administrator Browner announced a proposed expansion of the types of facilities that will be required to report their toxic releases. The addition of metal mining, coal mining, electric utilities, commercial hazardous waste treatment facilities, petroleum bulk terminals, chemical wholesalers, and solvent recovery services will increase the number of facilities that report under TRI to 31,000. The facilities expansion, however, will not effect TRI reports due by the upcoming Aug. 1 deadline.

FACILITY INDEX SYSTEM
(FINDS)
An EPA Enforcement Method Through Computer Technology

The EPA has even gone high-tech when it comes to enforcement *via* their FINDS Report. FINDS is an acronym for "Facility INDex System," which is a computerized inventory of sites or facilities monitored or regulated by the EPA. The system serves as an index to other EPA Program office databases or records. Most sites or facilities listed in FINDS relate to permit applications, inspection reports, or Superfund sites. This does not necessarily mean that the site or facility poses a threat to the environment or public health. Within the FINDS data file, a site or facility is identified by a unique EPA identification number and the most common name. Each site or facility contains one or more "Source Indicators" as shown below.

Source Indicator	Description of the Source	EPA Office
RCR	RCRA Information System	Waste/RCRA
PCS	Permit Compliance System	Water
AFS	Compliance Data and Air Facility	Air Enforcement
FAT	Pesticides and TSCA Enforcement System	Air/Pesticides
CER	Superfund-Hazardous Waste Sites	Waste/Superfund
FTT	Pesticides and Toxic Substance	TSCA
DOC	Enforcement and Compliance Monitoring	Regional Counsel
CON	Hazardous Waste Control Technology	HQ-EPA, ORC and
CRD	Chemical Docket System	OSW
FFI	Federal Facility Information System	ORC
CIC	Chemicals in Commerce Information	Federal Facilities
STA	State System	TSCA
PAD	PCB Activity Data System	State Offices
RCJ	Medical Waste Under RCRA	TSCA
TRI	Toxic Release Inventory System	Waste/RCRA
CUS	Chemical Update System	TSCA/Air Toxics
		TSCA

The usefulness of the FINDS report lies in the fact that an enforcement agent can screen a facility *via* computer for compliance with any and all laws regulated by the Environmental Protection Agency. This method cross-references a facility's compliance "track record." One can easily imagine what an agent sees and concludes when a non-compliant facility's FINDS report is showing too many "open" spaces. If a level of concern is reached, he can easily pursue further information on the facility's size, industry, and

history through various resources, such as Dun & Bradstreet records, IRS records, national registry services, business and industry directories, chambers of commerce guides, phone books, etc.

The FINDS reports contain such information as city, county, Zip Code, name, etc. which can be used to sort various reports. The reports most often used are those in which the sites or facilities are listed in alphabetical order by county within each state, which makes it easy to locate a site or facility by name. Sorts by county or Zip Code are particularly helpful when determining whether a geographical location is impacted by sites or facilities listed in FINDS.

VANGUARD
ENVIRONMENTAL, INC.
ENVIRONMENTAL & SAFETY COMPLIANCE SPECIALISTS

Part 4

OSHA Compliance, Industrial Hygiene, & Training Services

Introduction to OSHA Standards, Rationale, & Review of Vanguard's Site-Specific OSHA & Industrial Hygiene Services

(Note: See chart entitled, "Employee Safety and Health Modules" at the end of Part 4, outlining Vanguard's approach to OSHA Training Services in order to reduce Workers' Compensation cost on behalf of our clients.)

On January 30, 1970, President Richard M. Nixon signed into law the Occupational Safety & Health Act and stated, "This bill represents the American system at its best." Foremost among the reasons for passage of the Act was the preponderance of evidence that the workplace in U.S. industry was not only hazardous but also costly in lost time from work because of illness and injury. The Occupational Safety and Health Administration (OSHA) was established within the Department of Labor to administer the new law. Safety and health statistics had offered overwhelming rationale for a federal standard to protect employees in the workplace:

- Yearly, 14,000 workers died/2.2 million were disabled by accidents in the workplace;
- Work-related deaths and injuries were causing annual losses of $1.5 billion in wages and $8 billion in the Gross National Product;
- About 65% of U.S. workers were being exposed to harmful physical agents, yet only about 25% of them were adequately protected;
- A total of 390,000 new cases of occupational disease were occurring each year;
- Chemical agents comprising some 650,000 products being used in the workplace were posing known health threats to workers but were not being controlled; and
- A new hazardous chemical was being introduced to industry every 20 minutes.

The all-important goal for the Act was "to assure so far as possible every working man and woman in the nation safe and healthful working conditions and to preserve our

human resources." Therefore, in November, 1983, OSHA issued its final "Hazard Communication Standard" (HazCom). The Standard was designed to "reduce the incidents of chemically-related occupational deaths, illnesses and injuries among employees in the manufacturing sector." Then, on August 24, 1987, the U.S. Court of Appeals for the Third Circuit expanded OSHA's HazCom Standard to the non-manufacturing sector to provide information to *all* employees about chemical hazards in the workplace. By 1990, over 6 million companies and 90 million employees were covered by the "Hazard Communication Standard of 1987." The Act was subsequently amended in 1994 and additional standards continue to be enacted for the most comprehensive safety and health compliance initiative known to industrialized nations. Even today, though, an average of 19 persons per day are killed in work-related accidents in American industry.

The Hazard Communication Standard: Employee Right-to-Know

OSHA's HazCom Standard is driven by one overriding philosophy: *that it is the responsibility of the employer to communicate chemical hazards in the workplace to all employees*. This "Hazard Communication" must have two essential, interlinking elements for OSHA compliance:

- It must fulfill the Hazard Determination Mandate in order to provide...
- A site-specific HazCom program in the workplace.

The only way to make a Hazard Communication Program site-specific is to conduct a hazard determination. All chemical hazards must be determined according to the physical and health risks associated with employee exposure.

OSHA's compliance requirements (mandated for annual employee training) for an effective 365-day-a-year Hazard Communication Program are founded in the five major components listed below.

Hazard Determination Mandate (Achieved *via* Vanguard's Chemical Hazard Analysis)

A complete Chemical Hazard Analysis must be performed with regard to physical and health risks on every chemical in the facility and organized by department in order to satisfy OSHA's Hazard Determination Mandate, thereby also fulfilling OSHA's requirement that a company's HazCom Program be Site-Specific. Vanguard's Chemical Hazard Analysis screens each chemically-oriented product for all hazards to employee health and safety, considering physical state, container types, and location in the facility. Finally, the Chemical Hazard Analysis segments the hazards according to compliance laws and regulations: NFPA rating, Extremely Hazardous Substances, CERCLA substances for Spill Containment, Air Contaminants, Toxic Chemicals, Regulated

Hazardous Waste, Carcinogens, Mutagens, Teratogens, Ozone Depleters, Air Toxics, Storm Water Pollutants, and DOT Regulated Chemicals.

Written Hazard Communication Program

The written program is the cornerstone of the employer's entire HazCom Program and serves as the key to the client's compliance. As a working document, the Written Program must provide evidence that the client's HazCom Program is performance-oriented for employees in the workplace. This written program is developed site-specific to the client's facility with the Hazard Determination as its driving force.

Material Safety Data Sheets (MSDS's)

MSDS's must be obtained for every hazardous chemical in the workplace. Inactive MSDS's must be maintained as a part of the company's records for 30 years. Active MSDS's must be accessible to all employees at all times. MSDS training for employees is vital. Proper MSDS Management (also Labeling Mgt. below) must be implemented daily.

Container Labeling

Inadequate container labeling is one of the most common violations under the OSHA HazCom Standard. Labeling must contain the identity of the chemical, immediate hazards, severity of hazards, acute and chronic health hazards, and any personal protective equipment (PPE) to be used by employees when exposed to a chemical hazard. The purpose of labeling is to serve as an employee's immediate warning of chemical hazards in the workplace.

Employee Information & Training (On-Site)

All employees must be trained annually with regard to the employer's site-specific HazCom Program reflective of the company's Hazard Determination and Written Program, as well as meeting all aspects of the OSHA HazCom Standard as it relates directly to employee exposure to chemical hazards in the workplace. As OSHA states, it is the employee's right to know this information and the employers legal responsibility to provide it. Moreover, all employees must receive training prior to using any hazardous chemical, hence Vanguard's "New-Hire Orientation Manual," provided for the safety coordinator/facility designee for satisfying this requirement regarding newly-hired employees.

The annual training component is provided in groups of 25 employees, on-site, in increments of two hours per session. Training is available in Spanish (Bi-lingual instructor working jointly with Vanguard's OSHA Compliance Educator via "Consecutive

Translation"). Training methods include pre-test, post-test, and HazCom quizzes, as well as video introduction to Hazard Communication. Class rosters are maintained by Vanguard's OSHA Compliance Educator (who authors and implements the Site-Specific HazCom Program and Employee Instruction on-site) for the client's record-keeping requirements under the Hazard Communication Standard.

Employee Right-to-Know Information Station

The five components from above, and their subsequent guidelines, revolve around Vanguard's "Employee Right-To-Know Station" which accompanies the program and remains with the client for ongoing daily hazard communication with employees in the workplace. The attractive, client-specific "Employee Right-To-Know Station" is a 4-feet-by-4-feet display board ensuring that the employer's responsibility for 365-days-a-year HazCom Compliance is not only taking place, but offers overt, defensible evidence of the employer's commitment to excellence in health and safety in the workplace. An excellent "Inspection Showpiece," the "Station" consists of Required Postings, Emergency Phone Numbers, an MSDS Clearing House, Chemical Hazard Codes, Chemical Hazard Identification, HazCom Update Memo's Introducing New Products Into The Facility, and "Hunt Form" for eliminating unnecessary chemicals. The safety coordinator/facility designee is instructed on managing the "Station" for daily hazard communication, pertinent to current employee right-to-know issues.

All Manuals and Materials are Provided (Turn-Key)

Instructional manuals are prepared as follows:

- Client's site-specific written HazCom plan & program;
- MSDS/labeling manager's program;
- 30 employee participant manuals--to be utilized in groups of 25;
- New-hire orientation manual.

OSHA Enforcement Penalty Policy (Risk Management)

After March 1, 1991, the maximum allowable penalty became $70,000 for each willful or repeated violation; $7,000 for each serious or other-than-serious violation; and $7[illegible] each day beyond the abatement deadline. Since 1995, small business (50 or fewer employees) face a statutory minimum penalty of $5,000. The basic penalty determines penalties according to the gravity of the violation, and the size, good faith, and history of the employer. Unlike the EPA, OSHA enforcement agents have the capability to inspect for compliance with all OSHA standards, so total penalties can be

	Subject	Standard	Total Violations	Initial Penalty	Adjusted Penalty
1	Hazard Communication -Written Program	1910.1200(e)(1)	1924	$526,620	$190,397
2	Hazard Communication Employee Information and Training	1910.1200(h)	1132	367,070	91,171
3	Machine Guarding-Types of Guarding	1910.212(a)(1)	1038	2,035,968	688,289
4	Hazard Communication-Labeling Containers	1910.1200(f)(5)	969	215,280	51,194
5	Lockout/Tagout Written Energy Control Procedures	1910.147(c)(4)	800	1,507,047	394,496
6	Abrasive Wheel Machinery-Exposure Adjustment/Safety Guards	1910.215(b)(9)	784	256,245	84,474
7	Lockout/Tagout Establishment of an Energy Control Program	1910.147(c)(1)	714	867,675	312,572
8	First-Aid Eyewash/Emergency Shower Facilities Not in Close Proximity to Employees	1910.151©	707	543,790	194,569
9	OSHA 200 Log and Summary	1904.2(a)	695	120,310	38,085
10	Machine Power Transmission Pulley Guarding	1910.219(d)(1)	683	474,490	170,838
11	Wiring Methods/Flexible Cords and Cables	1910.305(g)(1)	617	143,911	51,055
12	Machine Guarding/Point of Operation Guarding	1910.212(a)(3)	598	1,519,110	629,389
13	Guarding Floor Openings, Platforms, and Runways	1910.23(c)(1)	583	868,109	295,319
14	OSHA General Duty Clause (Employer Must Provide a Safe Workplace for Employees)	5(a)(1)	562	4,192,530	482,396
15	Electric Guarding of Live Parts	1910.303(g)(2)	533	445,911	136,421
16	Personal Protective Equipment/Hazard Assessment and Equipment Selection	1910.132(d)(1)	504	265,893	93,181
17	Hazard Communication (MSDS Available for Each Hazardous Chemical	1910.1200(g)(1)	497	33,483	9,643
18	Abrasive Wheel Machinery/Work Rests	1910.215(a)(4)	485	277,729	81,422
19	Lockout/Tagout Training and Communication	1910.147(c)(7)	455	624,409	144,935
20	Electric Wiring Methods, Components and Equipment Cabinets, Boxes/Covers	1910.305(b)(2)	452	187,813	58,317
21	Personal Protective Equipment/Application/Scope	1910.132(a)	426	693,385	171,930
22	Electric Wiring Methods/Identification	1910.305(g)(2)	415	153,117	50,923
23	Hazard Communication/Employee Information and Training	1910.1200(h)(1)	398	203,741	69,864
24	Electric Wiring Methods, Components and Equipment: Cabinets/Boxes/Conductors	1910.305(b)(1)	393	177,950	54,329
25	Walking/Working Surfaces/Housekeeping	1910.222(a)(1)	392	392,695	105,705

quite severe. Moreover, OSHA and EPA now work cooperatively in detecting and reporting violations to each other for future enforcement visits. The "Citizen's Suit Provision" also allows an employee or resident in the community to pursue legal action through either agency.

Lockout /Tagout (the Control of Hazardous Energy): Machine-Specific Service & Training

For the purpose of employee safety, health, and accident prevention, the OSHA Lockout / Tagout Standard under 29 CFR 1910.147 covers the servicing and maintenance of machines and equipment whose unexpected energization, start up, or release of stored energy could cause injury or death to employees. OSHA requires employers to establish a written program, site-specific procedures and minimum performance standards for affixing appropriate lockout and/or tagout attachments to energy isolating devices, and to otherwise disable machines or equipment from unexpected energization, start up, or release of stored energy in order to prevent injury to employees.

Unlike OSHA Hazard Communication Training (Employee Right-To-Know) under 29 CFR 1910.1200, where training all employees on site-specific chemical hazards exists as the primary objective, OSHA's objectives for Lockout / Tagout focuses on the machine-specific "Control of Hazardous Energy" through the implementation of Lockout/Tagout procedures with subsequent emphasis on employee instruction. While this difference in objectives makes employee instruction no less important, OSHA's objective, by its very nature, implies that less employees may be involved in the training functions of the Lockout / Tagout Standard. The concentration is on machinery lock and tag procedures which then must be followed by relevant training of appropriate employees.

The *Wall Street Journal* (February 3, 1994) reported that the chance of injury is far higher at smaller companies than large ones. From 1988-1992, 4,337 workers died at inspected workplaces with fewer than 20 employees, but only 127 died at those with more than 2,500 workers. The National Safety Council reports violations pertinent to Lockout / Tagout placed in the Top 10 among all OSHA violations during fiscal 1993.

The following are general requirements for Lockout / Tagout:

- **Energy control program (written).** The employer shall establish a program consisting of energy control procedures, employee training and periodic inspections to ensure that before any employee performs any servicing or maintenance on machinery or equipment, it shall be isolated from the energy source and rendered inoperative.
- **Lockout/Tagout.** If an energy isolating device is not capable of being locked out, the employer's program shall utilize a tagout system. If an energy isolating device is capable of being locked out, the employer's energy control program shall utilize

lockout. Since January 2, 1990, all energy isolating devices on new machinery shall be designed to accept a lockout device.

- **Full employee protection.** When a tagout device is used, the tagout device shall be attached at the same location that the lockout device would have been attached, and the employer shall demonstrate that the tagout program will provide a level of safety equivalent to that obtained by using a lockout procedure.
- **Energy control procedure.** Procedures shall be developed, documented and utilized for the control of potentially hazardous energy when employees are engaged in servicing and maintenance of machinery and equipment. The procedures shall clearly and specifically outline the scope, purpose, authorization, rules, and techniques for the control of hazardous energy, and compliance enforcement.
- **Protective materials and hardware.** Such materials and hardware shall follow "intended use" guidelines, including durability, standardization, strength, identifiability, periodic inspection, and training/communication of employees involved.

Vanguard's Lockout / Tagout Service & Training exists as a turn-key program in which the employer has met his responsibilities to OSHA's Standard for Lockout / Tagout. Vanguard's Director of OSHA Education shall make a site-investigation of the employer's premises, thus designing an effective machine-specific program for Lockout / Tagout, 3-4 weeks prior to the training function. Materials and hardware will be established as a part of the program's design to isolate hazard sources.

The site-investigation shall encompass a study of machinery, processes, energy isolation procedures currently in place, development of lock/tag design to be implemented, employee skills proficiency, instructor familiarity with operations, materials and hardware to be introduced to operations, and interviews with one or more personnel to be trained. Instructor will identify which of four types of hazardous energy may become a part of the overall program: electrical, mechanical, pneumatic, and hydraulic sources of energy.

Hazardous Waste Operations & Emergency Response (HAZWOPER)

Under the authority of Section 126 of the Superfund Amendments and Reauthorization Act, Title I [not Title III] (1986), EPA and OSHA promulgated identical health and safety standards to protect workers engaged in hazardous waste operations and emergency response. The OSHA regulations, codified at 29 CFR 1910.120, became effective on March 6, 1990. The EPA regulations incorporate the OSHA standards by reference and are codified at 40 CFR Part 311. The standards affect employers whose employees are engaged in emergency response operations without regard to location, where there is a release or a substantial threat of release of a hazardous substance.

The EPA and OSHA employee protection standards for HAZWOPER apply to five

groups of workers, two of which fit mainstream industry in the manufacturing sector. These two are called: 1. Mandatory Cleanups at Uncontrolled Hazardous Waste Sites; 2. Voluntary Cleanups at Uncontrolled Hazardous Waste Sites. A hazardous waste site is commonly understood to be a facility in which hazardous waste is generated as a part of its operations. The latter three groups are associated with RCRA "Treatment, Storage, Disposal" Facilities, better known as TSD's.

Unlike HazCom Training, where all employees are to be trained about hazardous chemicals in the workplace, HAZWOPER does not apply to employees who do not have the potential to be exposed to hazardous substances. For example, administrative support personnel may not be covered by the standard, but are, of course, protected by other OSHA standards. They should also be made aware of the provisions of the emergency response plan, and must be briefed on emergency procedures and general site operations.

HAZWOPER Regulations contain general and specific requirements for health and safety programs, site characterization and analysis, site control, emergency response team training, medical surveillance, engineering controls and work practices, personal protective equipment, heat stress and cold exposure monitoring, informational programs, handling drums and chemical containers, hazardous waste/material handling, decontamination, and emergency procedures for catastrophic events.

To further highlight the challenges, the dumping of hazardous waste poses a significant threat to the environment. In 1985, the EPA managed about 275 million metric tons of hazardous waste at licensed RCRA sites. Hazardous waste is a serious safety and health problem that continues to endanger human and animal life and environmental quality. Hazardous waste - discarded chemicals that are toxic, flammable, or corrosive - can cause fires, explosions, and environmental pollution. Unless hazardous waste is properly treated, stored, or disposed of, it will continue to do great harm to all living things that come into contact with it now or in the future. It is because of the seriousness of safety and health hazards related to hazardous waste operations that OSHA issued its HAZWOPER standard, specifically developed to protect employees in the workplace and to help them handle hazardous wastes safely and effectively.

The Written Program

An effective and comprehensive safety and health program is essential in reducing work-related injuries, accidents, and illnesses, and in maintaining a safe and healthful work environment. OSHA, therefore, requires each employer to develop and implement a site-specific written program that identifies, evaluates, and controls hazards and provides emergency response procedures for hazardous waste sites. The plan must be periodically updated (generally on an annual basis to coincide with annual employee refresher training), and made available to all affected employees, contractors, and

subcontractors.

Workplan

The workplan should include the following:

- Supervisor and employee responsibilities and means of communication;
- Name of person who supervises all of the hazardous waste operations;
- Site supervisor with responsibility for an authority to develop and implement the HAZWOPER program and to verify compliance;
- Anticipated clean-up and/or hazwaste operating procedures;
- Personnel requirements for implementing the plan;
- Procedures for training, medical surveillance, emergency response, etc.

Site Evaluation & Control

It is extremely important, and a requirement of the standard, that a trained person conduct a preliminary evaluation of an uncontrolled hazardous waste site before entering the site. The evaluation must include all suspected conditions that are immediately dangerous to life or health or that may cause serious harm to employees (confined space entry, potentially explosive or flammable situation, visible vapor clouds, etc.)

Site-specific Safety/Health, Information, & Training Program

When a program is site-specific to conditions at the facility in question, while using HAZWOPER regulations as the foundation for that site-specificity, a facility shall be deemed as having met its compliance responsibilities. Moreover, employers are required to develop and implement a program to inform workers performing hazardous waste operations of the level and degree of exposure that they are likely to encounter. Training makes workers aware of the potential hazards they may encounter and provides the necessary knowledge and skills to perform their work with minimal risk to their safety and health. The employer is mandated to develop a training program for all employees exposed to safety and health hazards during hazwaste operations. Employees at all sites must not perform any hazwaste operations unless they have been trained to the level required by their job function and responsibility and have been certified by their instructor as having completed the necessary training. The initial training generally is comprised of either 40 or 24 hours of on-site instruction to teams of 8, 12, or 16 employees, depending upon the circumstances existing at the facility. Subsequently, all emergency responders must receive refresher training sufficient to maintain or demonstrate competency annually, usually executed in an 8 hour onsite session. Training would include hazardous materials and their risks, as well as knowing how to select and use appropriate control, containment, or confinement procedures and how to implement them. Employees who receive the specified training must be given a written certificate upon successful

completion of that training.

Personal Protective Equipment (PPE)

The standard further requires the employer develop a written PPE program for all employees involved in hazwaste operations. The PPE program must include an explanation of equipment selection and use, hazwaste accumulation, maintenance, and storage, decontamination and disposal, proper fit, donning and doffing procedures, inspection, in-use monitoring, program evaluation, and equipment limitations.

Monitoring

Airborne contaminants can present a significant threat to employee safety and health, thus making air monitoring an important element of the HAZWOPER program. The employer must conduct monitoring before site entry at hazwaste sites to identify conditions immediately dangerous to life and health, such as oxygen-deficient atmospheres and areas where toxic substance exposures are above permissible limits. Accurate information on the identification and qualification of airborne contaminants is useful for selecting PPE, assessing potential exposure, and determining the need for specific medical monitoring.

Medical surveillance

A medical surveillance program is required for meeting the HAZWOPER standard since it will help to assess and monitor the health and fitness of employees working with hazardous substances.

Decontamination

Procedures for decontamination must be developed, communicated to employees, and implemented before workers may enter a hazwaste site. All decon procedures must also occur before the employee leaves the work area.

Emergency Response

Proper emergency planning and response are important elements of the overall HAZWOPER program for the purpose of minimizing employee exposure and injury. The standard requires that the employer develop and implement a written emergency response plan to handle conceivable emergencies and contingencies before performing hazwaste operations. The plan must include the following:

- Personnel roles, lines of authority, and communication protocols,
- Pre-emergency planning,

- Recognition of emergencies and their prevention,
- Emergency medical and first-aid treatment,
- Methods for alerting onsite employees,
- Safety distances and places of refuge,
- Site security and control,
- Decontamination procedures,
- Critique of response and follow-up,
- Personal protective and emergency equipment,
- Evacuation routes and procedures.

The plan must include site topographical maps, facility layout (with quantity, containers, and location of all chemicals reflected in Material Safety Data Sheets), prevailing weather conditions, and emergency notification procedures for local, state, and Federal authorities.

There are five basic levels for HAZWOPER training:

1. FIRST RESPONDER AWARENESS LEVEL. First responders at the awareness level are employees who are likely to witness or discover a hazardous substance release and who have been trained to initiate an emergency response sequence by notifying the authorities of the release. There are many competencies in the hazardous materials training phase of HAZWOPER for the First Responder to attain.

2. FIRST RESPONDER OPERATIONS LEVEL. These responders actually respond to releases of hazardous substances as part of the initial response to the site for the purpose of protecting nearby employees, property, and the environment from the effects of the release. Training for this level is more focussed on risk assessment, PPE, and containment techniques.

3. HAZARDOUS MATERIALS TECHNICIAN. These are employees who respond to releases for the purpose of stopping the release. They assume a more aggressive role than a first responder at the operations level in that they will approach the point of release in order to plug, patch, or otherwise stop it.

4. HAZARDOUS MATERIALS SPECIALIST. These employees respond with and provide support to hazardous materials technicians. Duties are parallel, but the Hazardous Materials Specialist would also act as site liaison with Federal, state, local, and medical authorities in regards to site activities and response.

5. ON SCENE INCIDENT COMMANDER. Incident commanders, who will assume control of the incident scene, will oversee all emergency response and containment strategies in the HAZWOPER program.

Vanguard's OSHA Education Staff are available for on-site, site-specific HAZWOPER Training. There are parameters in this Document Book, that when brought together, offer compelling evidence on the need for HAZWOPER Training at your facility. Follow the rationale below and then survey the relative sections within this Document Book to evaluate your facility for the HAZWOPER requirements. Don't hesitate to consult your Regulatory Specialist to assist with such a survey.

1. If your facility is at least a Small Quantity Generator of RCRA Regulated Hazardous Waste, then this is a signal that your facility has the potential for a spill or release as it regards hazwaste operations. If your facility is a Large Quantity Generator, then the magnitude of hazwaste generated at your facility should send an even stronger message. Refer to Part 12 of this Document Book for a review of hazwaste issues, especially as it relates to those regulated hazardous wastes being screened among your chemical inventory in this particular section. Explore the section for waste streams and compare them to any hazardous waste manifesting you may have collected.

2. Study Part 5 for the physical states and quantities of those carcinogens, mutagens, and teratogens you have in your facility. If you have any of these chemicals in liquid or gaseous states at, in your opinion, a quantity and location in your facility that a spill or release could occur, then this could be another trigger for HAZWOPER requirements. Since these chemicals tend to offer the worse-case scenario in adverse, life-changing events when exposure to humans occurs, it would be wise to include them in your site-specific HAZWOPER plan.

3. Study Part 6 and 7 for any Extremely Hazardous Substances and/or CERCLA chemicals being inventoried in your facility at or above their Threshold Planning Quantity (TPQ - Part 6) or Reportable Quantity (RQ - Part 7). The potential for spilling or releasing these particular chemicals in excess of their assigned thresholds points to no uncertain facts that the EPA has already determined that such events would represent an emergency situation.

4. A survey of Part 9 (SARA 313) would demonstrate those toxics on your site. Extreme caution must be taken with these chemicals at all times, and even more so when they become generated into the residue known as hazardous waste. Remember, though, that even non-hazardous wastes become hazardous when mixed with that which is regulated as hazardous.

5. Part 10 (Storm Water Pollutants & Water Priority Chemicals), Part 11 (TSCA), and those chemicals associated with Process Safety Management and Risk Management Program under Part 13 (Clean Air Act Amendments) continue to support the mandate for HAZWOPER Training as a requirement of your facility.

Contingency Plan Relating to 40 CFR 264 (HazWaste)

The Occupational Safety & Health Administration (OSHA), in conjunction with the U.S. Environmental Protection Agency (EPA), requires a Contingency Plan to prevent or minimize hazards to human health or the environment in the event of fire, explosion, or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents to air, soil, groundwater, or surface water. The provisions of this plan shall be implemented immediately upon knowledge that one or more of the aforementioned events could threaten human health or the environment.

At all times, there must be at least one employee on the facility premises, or on call for rapid response, with the responsibility for coordinating all internal emergency response measures. This/these employee(s) shall be designated as the emergency coordinator (EC). The EC must maintain full responsibility for activation and control of the Contingency Plan and should be thoroughly familiar with:

- Facility's Contingency Plan for effective, efficient, & appropriate emergency response;
- All operations and activities at the facility;
- The location and characteristics of any hazardous materials;
- The location of all records within the facility; and
- The physical layout of the facility.

Additionally, the EC will have the authority to commit the resources needed to implement this Contingency Plan, as the Plan must be a "working document." The nature of the incident may also dictate the EC obtain assistance from outside agencies to provide emergency services to the facility as the EC deems appropriate, especially as it might relate to the EPA's 40 CFR 264, Subpart D, which regulates the management of hazardous wastes and its constituents.

Note regarding HAZWOPER: The Contingency Plan and its annual update should be done concurrently with OSHA's 1910.120 requirement for hazardous waste operations and emergency response in which the initial 24 hour Hazmat Technical Training is followed with the annual 8 hour refresher. The company's SPCC Plan, as required, should also be done concurrently with these two functions on the annual anniversary date of the Hazwoper training.

The Contingency Plan must be represented in document format reflective of site visits and Plan development by a technically-qualified professional in the field of emergency response implementation procedures . The Plan must be updated annually and made available for inspection by an OSHA or EPA official, local or state emergency response officials, employee(s) of the company, or even citizens-at-large. Because such a plan must demonstrate a realistic capability to respond immediately, effectively, and

efficiently to even the most catastrophic of events, a part of the implementation of the plan must also consist of the education of the company's internal emergency response team, pertinent personnel, and the environmental compliance management team. Moreover, the most effective implementation would be a "staged rehearsal of an emergency scenario" to evaluate and measure the performance capability of the company's response to a life-threatening / environment-threatening event.

Industrial Hygiene

Industrial Hygiene is the science of anticipation, recognition, evaluation and control of environmental factors or stresses arising in or from the workplace that may cause sickness, impaired health and well-being, or significant discomfort among workers or among the citizens of the community. (American Industrial Hygienists Association).

The industrial hygienist (IH), although trained in engineering, physics, chemistry, environmental sciences, safety, or biology, has acquired through postgraduate study or experience a knowledge of the health effects of chemical, physical, biological, and ergonomic agents. The IH is involved in the monitoring and analysis required to detect the extent of exposure, and the engineering and other methods used for hazard control.

Through Vanguard's own industrial hygiene and OSHA Education departments, comprehensive IH services are available to meet those needs that clients might have in developing the highest safety and health standards in the workplace to protect its most valued resource -- its employees.

IH services would include Noise Monitoring, Hearing Conservation, Indoor Air Monitoring / Air Quality, Respiratory Protection, Confined Space, Personal Protective Equipment, Accident/Incident Investigation & Recordkeeping, Bloodborne Pathogens, Heat Stress, Fire Prevention/Emergency Action Plan, Exposure Compliance Programs for Chemicals having their own OSHA Standard, Laboratory Safety/Chemical Hygiene, Fall Protection (Construction), Ergonomics, Sick Building Syndrome, RCRA Hazwaste-related issues, and others. These programs are highlighted throughout the remainder of Part 4 of this Document Book.

Here is a short list of those companies that must engage in IH services for the protection of employee safety & health: pet, livestock, and domestic animal feed processing facilities; hospitals; medical waste incinerators; waste to energy incinerators; coal processing / burning plants; plating and galvanizing operations; molten metal facilities; aerospace industry; spray painting operations; welding operations; sand blasting/abrasives; fiberglass and metal finishing; semiconductor / electronics; hazwaste incinerators; hazwaste disposal; auto body repair; oil and gas; chemical manufacturers; printing and graphics; marine / maritime industries.

Here are some evaluative questions for clients to review for their potential need of IH compliance services:

Noise / Hearing Protection

- Has the company performed noise level monitoring to ensure all operations are not exceeding the 85 decibel action level?
- Does the company have high noise level areas or operations?
- Does the company have a Hearing Conservation Program, written program, and, annual audiometric testing provided for its employees?

Respirators and Air Monitoring

- Has air monitoring been done by a qualified IH to determine whether respirators are needed?
- If respirators are required, has air monitoring been done to ensure the correct respirators are being used for the contaminant concentrations?
- Does the company use respirators, including dust masks?
- Are respirators required or provided as optional by the company?
- Is there a written respiratory protection program?
- Are medical evaluations and approval given before respirators are assigned to employees?
- If air supplied respirators are used, is the supplied air tested for Grade D Quality?
- Have new chemicals, products, operations, or processes been added since the testing?
- Is all testing documented and on file for inspection by an OSHA IH inspector?
- Are products containing any of the chemicals having their own standard being used at the facility (crystalline silica, methylene chloride, lead, cadmium, inorganic arsenic, etc.)?

Confined Spaces

- Has an evaluation for permit required confined spaces been completed and documented?
- If confined spaces have been identified for employee entry, is there a written confined space entry program?
- Is training being done and documented?

Personal Protective Equipment

- Has a PPE hazard assessment been conducted at the facility?
- Is written documentation providing date, person conducting evaluation, and results on file?

- Has PPE training been conducted and documented?

OSHA Process Safety Management (PSM) 29 CFR 1910.119

(**Note**: See also discussion of PSM under Part 13: Clean Air Act Amendments)

Effective May 26, 1992, the Occupational Safety and Health Administration (OSHA) mandated its Process Safety Management (PSM) standard aimed at protecting millions of employees in the workplace at nearly 100,000 facilities against toxic, flammable and reactive chemical hazards "used, stored, manufactured, or transported on-site" in conjunction with processes, machinery, equipment, or activities.

According to the regulation, affected facilities were to conduct Process Hazard Analyses (PHA's) of at least 25% of their affected processes by May 26, 1994, and at least an additional 25% of the analyses were to be completed each successive year by the annual deadline so that employers would have evaluated every affected process and implemented safety measures within five years of the original effective date in 1992. The ultimate deadline, therefore, was May 26, 1997.

Basically, the standard mandates employee participation in PSM programs and sets requirements stemming from 14 elements including:

- written operating procedures
- employee training
- pre-startup reviews
- equipment maintenance
- written procedures for managing process change
- "hot work" permit
- emergency action plans
- compliance audits
- incident investigation involving releases or near releases of covered chemicals.

OSHA chose the list of 130 Highly Hazardous Substances in which coverage is triggered for a facility's compliance if any or all specified Threshold Quantities (TQ's) (or any other substance in excess of 10,000 lbs. as connected to a process) is/are being used in a single process at one point in time (not aggregated over a period of time as in Sec. 313 of SARA Title III). A "process" is defined to mean any activity involving a highly hazardous substance inclusive of any use, storage, manufacturing, or on-site movement. Also included as a single process is any group of vessels which are interconnected and separate vessels which are located such that the chemical could be released.

Important Note: For optimum and accurate results, this OSHA PSM project should be performed in conjunction with EPA's two compliance requirements under its Clean Air

Act Amendments (Title V Air Operating Permit) and under its Risk Management Program for Chemical Accidental Release Prevention (40 CFR Part 68), as all three programs were planned by Federal OSHA and EPA authorities, as well as the U.S. Congress, to be meshed or intertwined for implementation.

Vanguard conducts a turn-key compliance project on behalf of its client that meets OSHA's PSM requirement under 29 CFR 1910.119. A basic assumption is that Vanguard has performed a Chemical Inventory Analysis on the client's facility. If not, this step must be added to the Schedule of Work. The owner/operator of the facility must understand and assure that PSM applies to his facility's employees, contractor, and subcontractor employees alike, except in the case of incidental services, such as janitorial, food and drink, laundry, delivery, or other supply services.

Normal Process Operations and Project Prerequisites

OSHA requires the compilation of written process safety information before conducting any Process Hazard Analysis (PHA). This is to enable the employer and employees involved in operating the process to identify and understand the hazards posed by those processes involving highly hazardous substances. This documentation shall include information pertinent to the hazards of highly hazardous chemicals used or produced by the process, and information pertinent to the equipment in the process.

Process Hazard Analysis

A member of Vanguard's technical/engineering staff shall perform a PHA (hazard evaluation) on processes covered by this standard. The PHA must be appropriate to the complexity of the process and shall identify, evaluate, and control the hazards involved in the process. The engineer shall determine and document the priority order for conducting PHA's based on the rationale as to the extent of the process hazards, number of potentially affected employees, age of the process, and operating history of the process. The PHA shall be conducted as soon as possible, but no later than the previously mentioned compliance schedule. The engineer shall use one or more of the following methods that are appropriate to determine and evaluate the hazards of the process being analyzed:

- What-if
- Checklists
- What-if/checklists
- Hazard & Operability Study (HAZOP)
- Failure Mode and Effects Analysis
- Fault Tree Analysis
- Appropriate Equivalent.

PHA's must be updated and revalidated at least every five years to assure that it continues to be consistent with the current process. This must be done for the life of the process.

Pre-startup Safety Review

A pre-startup safety review shall be performed for new or modified facilities whenever the process might influence a change in the process safety information. The review shall confirm that prior to the introduction of highly hazardous chemicals to a process:

- Construction and equipment is in accordance with design specifications;
- Safety, operating, maintenance, and emergency procedures are in place and are adequate;
- A PHA is performed and recommendations must be resolved or implemented before startup;
- Training of each employee involved in operating a process has been completed.

Management of Change

Vanguard shall establish and assist the client with the implementation of written procedures to manage changes of process chemicals, technology, equipment, and procedures, as well as changes to facilities that would affect a covered process.

Operating Procedures

Vanguard shall develop and assist the client with the implementation of written operating procedures that provide clear instructions for safety conducting activities involved in each covered process consistent with the process safety information and shall address the following five elements:

- An 8 step procedure for each operating phase;
- Operating limits;
- Safety and health considerations;
- Safety systems and their functions;
- Safe Work Practices to provide for the control of hazards during operations such as lockout/tagout, confined space permitting, opening process equipment or piping, entrance control - all of which must apply to employees and contractor employees. Note: Projects requiring work under separate OSHA standards lie outside the scope of this PSM project, but can be implemented as a part of the facility's overall OSHA compliance program.

Hot Work Permits

A procedure for securing hot work permits will be developed for any hot work operations conducted on or near a covered process.

Technology of Process

Information concerning the technology of the process shall include at least the following:

- Block flow or simplified process flow diagram;
- Process chemistry;
- Maximum intended inventory;
- Safe upper and lower limits for such items as temperatures, pressures, flows or compositions;
- Evaluation of the consequences of deviations, including those affecting the safety and health of employees.

Maintenance of Plant and Equipment

A procedure must be maintained and implemented to minimize the possibility of fire, explosion, or any unplanned sudden or non-sudden release of hazardous substance to air, soil, or surface water which could threaten human health or the environment.

Process Equipment

A thorough 8 step procedure will be utilized to provide written information pertaining to the equipment in the process and documentation must be certified by the owner/operator that equipment complies with recognized and generally accepted good engineering practices. An additional written procedure will be utilized to maintain the on-going mechanical integrity of various process equipment in order operate within safe parameters. Inspections and test shall be performed on process equipment. The owner/operator must correct deficiencies to assure all equipment is suitable for process application.

Powered Industrial Trucks (Forklift Training)

The OSHA 29 CFR. 1910.178 requires very specific operator training with regard to Powered Industrial Trucks (Forklifts) for the safety and welfare of drivers, as well as employees whose work orientation requires they be in the presence of forklift operations. OSHA requires that "only trained and authorized operators shall be permitted to operate a powered industrial truck."

Training shall include topics on:

- power sources	- locations	- safety guards	- fuels
- trucks / railroad cars	- lighting	- gases / fumes	- batteries
- driver knowledge & skills	- loading	- maintenance	- regulations.

This regulation and mandated training has proven to save lives, prevent property damage, and prevent accidents and injury involving drivers and other employees in the workplace.

Vanguard provides instruction for forklift operations encompassing all proper safety procedures as required in 29 CFR 1910.178. A member of Vanguard's technical / engineering staff will conduct an on-site review to identify current operational procedures, evaluate working order of current powered industrial truck equipment, assess potential safety concerns, and present a site-specific instructional program, inclusive of a student-friendly quiz.

The 1 ½ - 2 hour program format includes a multimedia presentation of video, visual aids (overhead transparencies), student manuals, and classroom instruction.

The written program, class roster, quizzes, and instructional manual provide defensible documentation for compliance with this OSHA regulation in the event of an enforcement inspection.

Respirator Training - OSHA 29 CFR 1910.134 - for Oxygen Deficient Atmospheres

OSHA requires very specific training in the proper use of respirators in the workplace as changing conditions and chemically-oriented atmospheres in industrial settings may have an adverse effect on the safety and health of employees. Therefore, respirator training becomes an integral part of a company's overall OSHA compliance program.

Vanguard's Respirator Training program satisfies OSHA's requirements under 29 CFR 1910.134 in the use and fitting of respirator equipment for personal protection against breathing contaminated air due to normal and abnormal causes. Such equipment is typically used as a part of accident cleanup, internal emergency response, confined spaces, and other situations in which hazardous environments may exist.

OSHA requires the training to include:

- instruction on awareness of OSHA compliance regulations related to the proper use of respirators;
- recognition of conditions which would require breathing protection;
- the four types of respirator equipment to be used for specific environmental conditions;

- proper fitting of respirators specific to each individual;
- activities to be performed while using respirator equipment; and
- written company policy and program site-specific to the use of respirators in the company's facility.

Vanguard provides instruction for respirator training encompassing all proper safety procedures as outlined in OSHA's training requirements under 29 CFR 1910.134. A member of Vanguard's technical / engineering staff will conduct an on-site review to identify current operational procedures, evaluate working order of current equipment, recommend further equipment as needed for compliance with OSHA's respirator standard, assist in the proper fitting personalized to each individual participant, and present a site-specific instructional program.

The 1 ½ - 2 hour program format includes a multimedia presentation of video, visual aids (overhead transparencies), student manuals, classroom instruction, plus 20 minutes "proper fit time" to be spent with each participant.

The written program, class roster, and instructional manual provides defensible documentation for compliance with this OSHA regulation in the event of an enforcement inspection.

Hearing Conservation for Occupational Noise Exposure

Noise, or unwanted sound, is one of America's most wide-spread workplace health problems. It is a by-product of many industrial processes. Sound consists of pressure changes in a medium (usually air), caused by vibration or turbulence. These pressure changes produce sound waves emanating away from the turbulent or vibrating source. Exposure to high levels of noise causes hearing loss and may cause other harmful health effects as well. The extent of damage depends primarily on the intensity of the noise (measured in decibels) and the duration (based on an 8-hour time weighted average - TWA) of the exposure. Noise-induced hearing loss can be temporary or permanent. Temporary hearing loss results from short-term exposures to noise, with normal hearing returning after a period of rest. Generally, prolonged exposure to high noise levels over a period of time gradually causes permanent damage.

OSHA's Hearing Conservation Standard (29 CFR 1910.95) is designed to protect workers with significant occupational noise exposures from suffering hearing impairment even if they are subjected to such noise exposures over their entire working lifetimes. By the authority of the U.S. Congress and the Dept. of Labor, OSHA mandated "Hearing Conservation for Occupational Noise Exposure" on April 7, 1983, requiring Hearing Conservation programs for all employees whose exposure to workplace noise "equals or exceeds an 8-hour Time Weighted Average (TWA) of 85 decibels." The following summarizes the required components of OSHA's Hearing Conservation Program.

- **Noise Level Monitoring.** It is the employer's responsibility to monitor noise exposure levels in a manner that will accurately identify employees who are exposed to noise at or above 85 dB over an 8-hour TWA. The exposure measurement must include all continuous, intermittent, and impulsive noise within 80 to 130 dB range and must be taken during a typical work situation. A performance-oriented standard, it is wise to select the monitoring method (or a combination of methods) best suited to the employer's workplace in order to achieve compliance. Monitoring must be repeated when changes in production, process, or controls increase noise exposure. Such changes may mean that an existing hearing conservation program no longer complies with OSHA's intended objective of hearing protection. The employer is required to notify employees about the results of noise exposure monitoring, albeit the method of notification is left to the discretion of the employer.

- **Audiometric Testing.** Audiometric testing not only monitors the sharpness or acuity of an employee's hearing over time, but allows employers to educate employees about their hearing and the need to protect it. The employer must establish and maintain an audiometric testing program. The important elements of an audiometric testing program include baseline audiograms, annual audiograms, training, and follow up procedures. OSHA requires that audiometric testing must be made available at no cost to all employees who are exposed to an actual level of 85 dB or above, on an 8-hour TWA. The follow up procedure indicates whether hearing loss is being prevented by the employer's hearing conservation program. Audiometric testing must be supervised by a certified audiologist, however the professional does not have to be present when a qualified technician is conducting testing. Audiometric tests must be conducted in a room meeting specific background levels and with calibrated audiometers that meet American National Standards Institute (ANSI) approval.

  There are two types of audiograms required in the hearing conservation: Baseline and Annual audiograms. The Baseline audiogram is that with which future audiograms are compared. Baseline audiograms must be provided within 6 months of an employee's first exposure at or above an 8-hour TWA of 85 dB. Employees should not be exposed to workplace noise for 14 hours preceding the baseline test; however, appropriate hearing protectors can serve as a substitute for this requirement and can be worn during this time period. Annual audiograms must be conducted within 1 year of the baseline. It is important to test hearing on an annual basis to identify deterioration in hearing so that protective follow up measures can be initiated before hearing loss progresses, or in other words, a Standard Threshold Shift (STS) has occurred. STS is an average shift in either ear of 10 dB or more at 2000, 3000, and 4000 hertz. This averaging method avoids false readings of hearing ability.

- **Audiogram Evaluation.** If an STS is identified, employees must be fitted or refitted with adequate hearing protectors, shown how to use them, and required to wear them. Employees must be notified within 21 days from the time the determination is made that their test results showed an STS. Some employees with an STS may be referred for further testing if it is thought that their test results are questionable or if they have a medical problem related to the wearing of hearing protection.

- **Hearing protection.** Hearing protection must be available to all workers exposed to 8-hour TWA noise levels of 85 dB or above. This requirement will ensure that employees have access to protection before they experience a loss in hearing. Hearing protectors must be worn by: (1) employees for any period exceeding 6 months from the time they are first exposed to 8-hour TWA noise levels of 85 dB or above until they receive their baseline audiograms; (2) employees who have incurred STS's since they have demonstrated that they are susceptible to hearing loss through workplace noise; (3) employees exposed to the permissible exposure limit of 85 dB over an 8-hour TWA. Employees must be shown how to use / care for their protectors and supervised on the job to ensure they continue to wear them correctly.

- **Training & Recordkeeping.** Employee training is very important. When workers understand the reasons for the hearing conservation program's requirements and the need to protect their hearing, they will be better motivated to participate actively in the program and to cooperate by wearing their protectors and taking audiometric tests. Employees exposed to TWA's of 85 dB and above must be trained at least annually in the effects of noise; the purpose, advantages, and disadvantages of various types of hearing protectors; the selection, fit, and care of protectors; and the purpose and procedures of audiometric testing.

Workplace noise exposure records must be kept for 2 years. Audiometric test records must be maintained for the duration of employment for each affected employee. Audiometric test records must include the name of the employee, job classification, date of the last acoustic or exhaustive calibration, measurements of the background sound pressure levels in audiometric test rooms, and the employee's most recent noise exposure measurement.

Vanguard's Hearing Conservation is established to satisfy the employer's OSHA compliance as described above. The program is implemented in two phases (the first phase - noise level monitoring - as a one-time requirement.

- **Applicability Determination for a Hearing Conservation Program** through Plant-wide Noise Level Monitoring on an 8-hour Time Weighted Average (TWA);
  Vanguard's staff will first conduct a detailed noise survey. The purpose is to:

- Obtain specific quantifiable information on the noise levels existing at any and all workplace area(s) of concern using precision monitoring equipment;
- Document results of survey so as to define scope for which audiometric testing, training, hearing protection, and pertinent recordkeeping will be required;

- **Annual Employee Testing, Training, and Hearing Protection.**

Assuming that permissible exposure limits were exceeded in the noise level monitoring phase, Vanguard will develop the Written Hearing Conservation Program under OSHA's 29 CFR 1910.95. The Program will address the following:

1. Results from the noise survey;
2. Audiometric Testing of those employees exposed to excessive noise levels;
3. Install Hearing Protection Program for all employees exposed to 85 decibels or more in the workplace;
4. Employee Training by groups of 25; and
5. Record Keeping.

Confined Space Permitting and Rescue Team (OSHA 29 CFR 1910.146)

- Confined Space Permitting & Rescue Team (OSHA 29 CFR 1910.146) became effective April 15, 1993. Here is an outline of elements pertinent to this Standard.

A. Evaluation of permit-required confined spaces in the workplace;
B. Permit-required Confined Space Program (Written Program)

1. Specified Equipment
2. Attendant Station Procedures
3. Rescue Team & Methods
4. Permitting System
   a. Supervisor Authorization Methods
5. Danger Signs
6. Hazardous Atmosphere Evaluation and Sampling: Actual & Potential
7. Continuous Forced Air Ventilation
8. Monitoring & Inspection Data
9. Entrance Covers
10. Internal Atmosphere Tests

14 Step Permitting Process

1. Space I.D.
2. Purpose of Entry
3. Date/Duration of Permit
4. Authorized Entrants Document
5. Current Attendants & Entry Sup' visor
6. Hazards Determination for Conf. Sp.
7. Permit Space Isolation & Elimination or Control of Hazards
8. Acceptable Entry Conditions
9. Test Results & Performance
10. Rescue & Emergency Summoning
11. Attendant / Entrant Communication
12. Required Equipment
13. Written Comments for Ongoing Danger
14. Related Permits (i.e. Hot Work, etc.)

- **Training & Employee Records**

A. Authorized Entrants
B. Attendants
C. Entry Supervisors
D. Rescue Teams
    1. Equipment - Personal Protective and Rescue Related
    2. First aid, including CPR
        a. Rescue simulation drills done at annual refresher
    3. Emergency Contingencies / MSDS information prepared for Hospital & Emergency Medical
E. Contractor Procedures
F. Alternative Protection Procedures

Indoor Air Quality (OSHA: Performance Outline)

- Introduction & Objectives

  - Select Date of Site Investigation, Time, Personnel Involved;
  - Perform Chemical Hazard Analysis through Material Safety Data Sheets and Emergency Response Information from Facility Layout;
  - Acquire notes, records, and recommendations from OSHA inspector;
  - Air Quality Monitoring in areas of concern (facility layout) to determine if exposure to dust, fumes and vapor warrants respirator use;
  - Process Machinery/Equipment as sources of concern;
  - Interview relevant personnel, such as Sr. Management, safety coordinator;
  - Personal Protective Equipment & Clothing being utilized by personnel; and
  - Determine areas where Chemical Emissions and Volatile Organic Compound (VOC) monitoring is appropriate.

Bloodborne Pathogens (BBP) Program & Training

On December 6, 1991, the Occupational Safety and Health Administration (OSHA) published the "Occupational Exposure to Bloodborne Pathogens" Standard under 29 CFR 1910.1030. The purpose of this regulation is to "eliminate or minimize occupational exposure to Hepatitis B Virus (HB.), Human Immunodeficiency Virus (HIV - AIDS Virus), and other Bloodborne Pathogens." The regulation went into effect on March 6, 1992.

It was in 1986 that the American Federation of State, County and Municipal Employees (AFSCME) petitioned OSHA to formally take action to reduce the risk to employees from exposure to various infectious agents. Later that same year, the Service Employees International Union, the National Union of Hospital and Healthcare Employees and other groups petitioned OSHA to create a standard to protect employees from the hazard posed by occupational exposure to the Hepatitis B Virus. It was these actions that prompted OSHA to begin work on the Bloodborne Pathogens Standard, becoming OSHA's first regulation of occupational exposure to biological hazards.

The Bloodborne Pathogens Standard applies to facilities or operations where exposure to human blood or other potentially infectious materials is possible. The original thrust of the regulation was aimed at health care facilities such as HOSPITALS, CLINICS, NURSING HOMES, MEDICAL LABORATORIES, and BLOOD BANK / PLASMA CENTERS. However, the Standard also affects virtually ALL INDUSTRIAL FACILITIES from 1992 forward, since employees are periodically exposed to blood or blood-contaminated materials in a number of situations, including:

- Internal "First Responders" on Hazmat Teams, Fire Brigades, First Aid Teams, etc;
- Cleaning up First Aid and Rescue Equipment after Use;
- Company Medical Offices & First Aid Stations;
- Trash Containing Contaminated Band-aids, Bandages, and Feminine Hygiene Products;
- Cleanup of Industrial Accidents Where Employees Are Injured.

The only exemption to this regulation is "Good Samaritan" acts performed by employees. In this sense, it is not necessary to provide the training to employees who wouldn't be expected to encounter human blood or other potentially infectious materials on their jobs... but who might through good will provide first aid to a fellow employee. In this way, OSHA tries to ensure that employers will not discourage people from coming to the aid of fellow employees in a medical emergency.

As with all OSHA regulations, the Bloodborne Pathogens Standard is intended to "protect employees" from potential workplace hazards. OSHA fully intends that, if necessary, a company's facility shall be modified to attain this goal... and that employees shall be informed and educated so that they can contribute to this reduction/elimination of exposure themselves, as well.

Compliance Components, Deadlines, & Enforcement Penalties for BBP

Compliance with the Bloodborne Pathogens regulation has been driven by three major deadlines:

- May 5, 1992 - The written Exposure Control Plan was to be in place and upgraded at least annually;
- June 4, 1992 - Employee information and training, inclusive of appropriate documentation and recordkeeping, begann and be renewed at least annually;
- July 6, 1992 - Allowance for the following items was made:

- Engineering and work practice controls;	- Personal Protective Equipment;
- Housekeeping;	- HIV & HB. labs
- Hepatitis B vaccinations	- Labeling & signage.

Like most OSHA regulations, the Bloodborne Pathogens Standard is "performance oriented," meaning the accomplishment of certain prescribed outcomes must occur. The Written "Exposure Control Plan" is the cornerstone of compliance with this regulation. The Plan must spell out exactly what steps you are taking to comply with the regulation. Specifically, the Standard says that, "Each employer having employee(s) with occupational exposure (reasonably anticipated skin, eye, mucous membrane or parenteral - skin piercing - contact with blood or other potentially infectious materials) shall establish a written "Exposure Control Plan." The primary objective of the Plan must "eliminate or minimize employee exposure...to bloodborne pathogens."

More than anything else, OSHA feels that providing employees with adequate information and training (amply documented) is key to a company's compliance with regulations. The Bloodborne Pathogens Standard stipulates that: "Employers must ensure that all employees with occupational exposure participate in a training program which is provided at no cost to the employee, and conducted during working hours." The initial employee training session was to have been completed by June 4, 1992, and then be provided annually thereafter. Training allowances must be made for those employees initially assigned or encountering job changes affecting their potential exposure to bloodborne pathogens. Two types of records must be maintained: medical records and training records.

As previously discussed in this section, OSHA now conducts its enforcement procedures in which it can levy as much as $70,000 in civil penalties and financial fines. In addition to the financial penalty, community relations are also affected when such a penalty is incurred. Moreover, employee complaints against deficient company compliance creates a seemingly litigation-happy workforce. Recently, over 22,000 chemical hazard inspections were conducted by OSHA in one year, all triggered solely by employee complaints.

Material Safety Data Sheet (MSDS) - Document Origination Service

When an organization originates a chemically-oriented product for commerce - liquid, solid, or gas - to be used, stored, processed, manufactured, imported, or resold, the Occupational Safety & Health Administration (OSHA) requires that proper health and safety information - specifically related to the chemical constituents of the product - become documented for hazard communication purposes to all human beings that could become exposed to the hazards therein. This especially applies to those persons exposed to the hazards of the product prior to end-use by the consumer. However, any end-use consumer has the right to know of the hazards contained within a product also and, therefore, may request an MSDS at the time of purchase.

OSHA's Hazard Communication Standard of 1987 (OSHA 29 CFR 1910.1200) clearly states that a supplier or manufacturer of an original product - liquid, solid, or gas - must provide a Material Safety Data Sheet with each product upon its initial delivery and then provide an update of the product's MSDS at which time the product undergoes any changes, improvements, or chemical compositional change. Moreover, the law provides that any employer that uses, stores, processes, produces, manufactures, or imports a chemically-oriented product must acquire an MSDS from the product's originator, creator, or supplier so as to make it accessible to all employees at all times in the employer's workplace.

OSHA has allowed for the product originator's potential need for protection of trade secret and proprietary information. Any client needing to secure his rights under this protection shall be advised accordingly, with all rights protected under OSHA's guidelines for this clause. The MSDS Document can and will be developed with these rights intact.

Vanguard's MSDS Origination Service is provided for those companies originating (creating, producing, etc.) one or more products that require the MSDS document as regulated by OSHA. Vanguard's procedure assumes that the product(s) for which an MSDS is developed is a known substance and that information is available from the client regarding the product's chemical composition. All work on this project is done by one of Vanguard's engineering / technical personnel.

U.S. DOT "Hazmat Employee" Training [HM-126f]

As of October 1, 1993, the U.S. Department of Transportation (DOT) required that detailed training be given to all "Hazmat Employees" associated with transporting hazardous materials - by air, roadway, rail, or water - in the workplace. (The original deadline had been April 1, 1993.)

DOT defines a "Hazmat Employee" as..." a person, who in the course of

employment, DIRECTLY AFFECTS HAZARDOUS MATERIALS TRANSPORTATION SAFETY." The definition mandates Hazmat Training of the following employees to include anyone who:

- is involved with packaging;
- prepares shipping papers;
- loads a vehicle;
- manages records;
- marks or labels packages,
- manages or supervises shipping;
- operates a vehicle;
- any other employees involved in transporting hazardous materials.

DOT defines a "Hazmat Employer" as..."any person who uses one or more employees in connection with any of the above functions." DOT requires that "it is the responsibility of the Hazmat Employer to assure that every Hazmat employee receives certification training, as mandated."

- All Hazmat Employees must receive general training, on:
  - Requirements of DOT regulations;
  - Recognition and identification of hazardous materials consistent with DOT hazardous materials communication rules.

- All Hazmat Employees who handle or transport HazMat packages and anyone else who might be exposed to the materials as a result of an accident must receive safety training on:

  - DOT emergency response communications (49 CFR 172 (g);
  - How to protect themselves and others from the hazards of materials to which they may be exposed;
  - Methods and procedures for avoiding accidents involving hazardous materials.

- Each type of Hazmat Employee must receive specific training, such as:

  - Classification and naming of Hazardous Materials;
  - Packaging (Including new "Performance Packaging");
  - Marking and Labeling;
  - Shipping Papers and Emergency Response Information Provision;
  - Placards;
  - Loading and unloading of transport vehicles;
  - and other Hazmat transportation information applicable to their job.

- Site-specific written plan, documentation (inclusive of employee record keeping), and participant manuals are prepared by trained and qualified instructors and support personnel. These materials are provided for the client,

in the event of a DOT inspection under this ruling, as reflective of the training taken place. The records are also maintained at Vanguard's corporate office as a precautionary backup on behalf of the client.

- The instruction is to last a minimum of two hours in length, preferably at the facility of the client, for the purpose of site-specificity. A conference will be scheduled with two supervisors to instruct them on basic information on fulfilling DOT's requirements for "new-hire orientation" throughout the year until the annual training is due again. Annual training is to be scheduled 15 business days on either side of the employer's first anniversary training date.

Phase I, II, III Environmental Assessment for Commerical Real Estate Transactions

The basic purpose of a Phase I Environmental Assessment, as related to real estate transactions, is to determine and document what environmental impairment, degradation, or hazards, if any, are associated with the property or site in question. A report documenting a thorough investigation of the site and its historical use alerts all parties involved (buyer, seller, financial institution) in the transaction for any potential for remediation / cleanup prior to the consummation of the final agreement. Phase I especially informs the buyer and financial institution of any environmental liabilities at the time of the transaction that could substantially reduce the value of the investment in the future. If the Phase I Environmental Assessment documents evidence that environmental hazards do exist, then there may be cause for the site to undergo Phase II (Sampling, Testing & Evaluation) and Phase III (Cleanup & Abatement) projects. An outline description of Phase I, II, & III projects is offered below to avoid confusion about the scope of each project's requirements.

Environmental Assessments find a legal perspective from the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980. Also known as Superfund, this law was created to provide the authority and a source of funding for cleaning up environmentally abused property. Courts have upheld CERCLA's provisions of strict liability for contamination and joint and several liability among potentially responsible parties (PRP's). Congress recognized the plight of "innocent" buyers by incorporating the "innocent landowner" defense into CERCLA. To claim innocence, however, the landowner must first demonstrate that at the time of property transaction there was "no reason to know" that the property was contaminated and that "all good commercial or customary practice" was undertaken to detect the potential for property contamination. In order to qualify for the "innocent landowner" defense, a buyer must establish that, immediately prior to, or at the time of acquisition, a Phase I Environmental Assessment was conducted and documented on the real property by an environmental professional.

Phase I - Review of Site History and Site Inspection

A. Examine Owner's Environmental Documentation, as Required by Laws of Regulatory Agencies, Including:

- Environmental policies and procedures;
- Past violations of environmental policies and procedures;
- Transportation and disposal records;
- EPA and other environmental permits.
- Records of Inspections;
- Licenses and Coverage of Insurance Contracts;

B. Determine Past Land Use:

- Obtaining and examining all available current and historical aerial photographs of the property;
- Examining ownership records and abstracts for exhaustively documenting a historical backdrop in land use as far back as records date (or at least 50 yrs);
- Interviewing past owners, neighbors, and relevant persons acquainted with the past and recent use of the property.

- Obtain and Examine Public Records of Incidents Pertinent to Environmental Significance And/or Incidents in the Vicinity That Could Have Influenced the Condition of the Property Adversely.

- Obtain State Records of the past or Recent Use of Underground Storage Tanks, Although Some Tanks May Be Unregistered.

- Inspect the Property to Identify Possible Environmental Problems as Indicated By:

  - Contaminated soils or surface waters;
  - Stained or barren soil;
  - Visible evidence of underground storage tanks;
  - Electrical transformers that may contain PCB's;
  - Possible asbestos containing building materials;
  - Discarded or abandoned chemical containers.

- Examine the Surrounding Property for Possible Environmental Problems That Could Affect the Property.

- Write a Phase I "Executive Brief" Documenting Findings of the Project, Inclusive Of any Problems Identified and Recommendations, If Required, for Further Studies to Be Conducted. Two Copies of the Report Will Be Presented to the

Vanguard Client.

Phase II - Testing and Evaluation

The findings of the Phase I will determine which of the following are to be done in the Phase II project.

- Collect samples of soils, surface / subsurface water, container contents and possible asbestos containing materials;
- Have the samples tested in a laboratory for contaminants or asbestos as appropriate;
- Drill a test well to collect a sample of the groundwater. Have the sample tested for contamination;
- Contact the local utility company or manufacturer of any transformer whose contents are unknown to find out if they know whether it contains PCB's. If it cannot be determined in this manner, arrange to have the utility company sample and analyze the contents of the transformer;
- Write a final Phase II report stating the environmental findings and recommend the corrective actions necessary before the real estate transaction is completed.

Phase III - Implementation of Cleanup and Abatement of Environmental Problems Identified as a Result of Phase I & II Assessments

- Review and establish a plan to implement the cleanup and abatement process;
- Obtain proper permits through the City, County, State, and Federal regulatory authorities;
- Begin Cleanup and abatement process;
- Inspect for complete abatement and cleanup of materials associated with project;
- Write Final Report on the Phase III project.

Facility Compliance Assessment (EPA, OSHA, & DOT Perspectives)

The Facility Compliance Assessment (FCA) is available from Vanguard to meet the client's concerns for an accurate regulatory compliance assessment and written status report by qualified and objective third-party professionals. The results from the FCA are provided in the form of documentation, becoming a matter of record for the purpose of filling those gaps discovered during the facility investigation. Upon completion, an Executive Briefing is scheduled between Vanguard and the client's environmental management team to engage in an open dialogue regarding the findings of the project. Of course, the objective of local, county, state, and federal governments is to protect the safety and health of employees, the environment: air, land, and water, the community-at-

large, and the region downwind from the facility.

The FCA encompasses the review and evaluation of environmental permits, reports, and documentation as required by the Environmental Protection Agency (EPA), the Occupational Safety & Health Administration (OSHA) from the Department of Labor, and the Department of Transportation (DOT). The site-investigation to be performed by the Engineer includes exhaustive compliance checklists screening all aspects of major and minor issues from the respective federal regulatory agencies. The evaluation will include, as well, those regulations pertinent to the facility from local, county, and state jurisdictions.

In general, the FCA reviews and evaluates the following elements of the client's Environmental Management Program:

- Written environmental policy statement;
- Evidence of required permits, reports, and documentation stemming from requirements of regulatory agencies;
- Management's commitment to pollution prevention, remediation and source reduction practices;
- Management's commitment to fulfilling all major and minor requirements stemming from regulatory agencies;
- Physical, documentary, testimonial, and analytical evidence;

    - Physical: inspection and observation;
    - Documentary: letters, contracts, accounting records, mgt. reports, permits, correspondence, etc.;
    - Testimonial: via interview and discussion with client contacts;
    - Analytical: screening and evaluating facility practices with mainstream focus of existing and upcoming regulatory requirements. This includes an all-important Chemical Hazard Analysis & MSDS Management.

Specifically, the FCA tests the company's accountability toward local, county, state, and federal mandates, which include: PERMITS; REPORTS; EMPLOYEE TRAINING; HAZARDOUS MATERIALS MGT; PERFORMANCE PACKAGING; LABELING; RECORD KEEPING; SHIPPING/TRANSPORTATION METHODS; DEFENSIBLE DOCUMENTATION OF COMPLIANCE PROJECTS; MSDS MGT; POLLUTION PREVENTION; EMPLOYEE HEALTH & SAFETY; RECYCLING & RECOVERY; WASTE MINIMIZATION; SOURCE REDUCTION; HAZARDOUS WASTE MGT; AIR QUALITY; SOIL QUALITY; WATER QUALITY; STORM WATER MGT; ERGONOMICS; EMERGENCY RESPONSE TRAINING & READINESS; SAFETY &/OR COMPLIANCE PERSONNEL ASSIGNED TO OVERSEE PROJECTS & PROGRAMS; & PLANT IMPROVEMENTS MADE & FURTHER RECOMMENDATIONS TOWARD COMPLIANCE AGENDA.

The format of the FCA's Executive Summary is based on the "economy of means" principle. As regulatory compliance laws can be complex in nature, requiring strong expertise relevant to compliance achievement in the facility, it is the goal of Vanguard's FCA documentation to inform the client, rather than further confuse. Therefore, a synopsis of each law or regulation is cited with a cross-reference to the client's "Action Plan" for compliance with those aspects of the laws in which the facility is falling short. In some cases, continuous action is required by compliance laws.

Since virtually all regulatory compliance laws from the EPA, OSHA, & DOT are based on chemicals, it becomes essential to perform a Chemical Hazard Analysis on the product line used, stored, processed, produced, manufactured, and imported as a part of the facility's operations. The EPA recognizes, for its own compliance purposes, a chemical is "anything reflected in a Material Safety Data Sheet - liquid, solid, or gas." Therefore, accurate recommendations would be impossible without informing the client of those issues surrounding compliance issues relative to the facility's chemical inventory. An Environmental Data Document is provided as a reflection of the Chemical Hazard Analysis, thus presenting numerous management reports as it regards the facility's environmental and safety compliance requirements from EPA, OSHA, & DOT legislation. This document serves as an "inspection showpiece" for visitations by enforcement agents.

RCRA Haz. Waste Training (SQG, 8 Hr.) - EPA 40 CFR 260-262

In 1976, President Gerald Ford signed into law the Resource Conservation and Recovery Act (RCRA), overseen by the U.S. Environmental Protection Agency, as a response to the need for controlling pollution to the environment - air, soil, and water - often caused by the generation, mismanagement and improper disposal of hazardous waste material by the industrial sector in the United States. As our nation's most important piece of hazardous waste legislation, the RCRA Law is a "cradle to grave" system for managing hazardous waste. It provides specific requirements for the generation, accumulation, storage, packaging, transportation and disposal of hazardous waste. It also imposes strict regulations concerning employees on the handling, exposure, and accidents involving hazardous wastes. Through RCRA, hazardous waste is highly regulated in the United States, from the time it is created through industrial processes until it is neutralized or finds its final place at a storage site or facility. The entire cycle or life span of any hazardous waste presents the need for a documented tracking system, all of which is controlled and enforced at the federal, state, and local levels.

The RCRA HazWaste Training Program is an 8 hour training component of Vanguard's RCRA Hazardous Waste Management Program. The training is an outgrowth of the client's comprehensive management of its hazardous waste as regulated by the Resource Conservation & Recovery Act (RCRA), a free-standing law under the U.S. Environmental Protection Agency. The 8 hour training program differs from the OSHA 8

hour Hazwoper Refresher in that its thrust is specific to the on-site day-to-day management, accident prevention, and proper procedure for spill/release cleanup of just those products and chemicals generated in the client's hazardous waste disposal program. This training program is limited in scope for those facilities designated as either Small Quantity Generator (SQG) or Conditionally Exempt Small Quantity Generator (CESQG).

The program encompasses the gamut of those areas established as critical to the day-to-day management of chemically-oriented products which, through use, eventually become hazardous waste. The training function is taught on-site at the facility and covers issues in the following outline:

- An Overview of the EPA Resource Conservation & Recovery Act for the purpose of understanding the rationale for the management of hazardous waste

  1. Health and Safety issues associated with those Hazardous Wastes specifically being generated at the client's facility

  2. The Potential for generating other hazardous wastes at the site, thereby creating the need for other precautions

  3. Common Problems that can result in enforcement penalties:

     - Duration of on-site waste
     - Emergency Coordinator not designated
     - Inspections lack documentation
     - Local authorities lack information
     - Recordkeeping incomplete or non-existent
     - Storage of reactive or ignitable waste to close to property line
     - Training program non-existent or incomplete
     - Waste determination records incomplete or missing
     - Waste containers inadequately or improperly marked/labeled

- Key Issues & Terminology Related to Hazardous Waste Regulated under RCRA

  1. "Cradle to Grave"
  2. Established criteria for identification and listing of hazardous waste
  3. Established standards for generators of hazardous waste
  4. Generator Categories and Specifications to Client's generator status
  5. Generator Requirements (Checklist for Compliance)
  6. Manifesting and the Records Management Program

- Survey & Study of Hazardous Wastes: General to Site-Specific

1. Characteristics of Hazardous Wastes
2. Accumulation of Hazardous Wastes
3. Proper Storage of Hazardous Wastes prior to disposal
4. Parameters regulating the storage time allotment prior to disposal
5. Segregation of Hazardous Wastes during storage

- Inspections

- Contingency Plan/Spill Notification - Documentation for Accident Prevention & Response

- Emergency Team & Cleanup Procedures

  1. Personnel Affected: Job Descriptions, Classroom Information, Practical Applications of Site-Specific Issues On-the-job, Annual Review, Training Records
  2. Monitoring Equipment
  3. Waste cut-off systems/shutdown
  4. Communication or alarm systems
  5. Spill Response

- Recordkeeping Program

  1. Uniform Hazardous Waste Manifest
  2. "Safety Kleen Amendment"
  3. Exception Report
  4. Exporting of Hazardous Wastes & Test Reports - Records Retention
  5. Inspection Reports
  6. Audits

- Important personnel objectives and outcomes as a result of the RCRA Training Component

  1. An understanding of the pertinent hazards and associated risks
  2. An understanding of the potential for disastrous outcomes when hazardous wastes are involved
  3. An understanding of the additional emergency response resources available when needed
  4. The ability to identify the hazards present in an emergency
  5. The selection and use of Personal Protection Equipment including respirators
  6. The elements of control and containment of spills/releases within the

capabilities of the responder(s) / Knowing when to act and when to walk away.

VANGUARD
ENVIRONMENTAL, INC.
ENVIRONMENTAL & SAFETY COMPLIANCE SPECIALISTS

Part 5

Carcinogens, Mutagens, Teratogens, and Proposition 65

Chemicals Adverse to Human Life and the Environment

Known carcinogens are chemicals that have yielded enough medical evidence to know beyond a reasonable doubt that they cause cancer. Suspected carcinogens are chemicals that have been known to cause cancer but lack some form of significant medical evidence. Mutagens are chemicals that mutate or destroy cell tissue and damage genetic structures. Teratogens are chemicals that cause damage to the fetus of an unborn child, in short, birth defects. The information on carcinogens, mutagens, and teratogens supplied in the following data table is provided so that you'll know the chemical hazards at your facility that could seriously jeopardize the welfare of human life within your work force or in the community-at-large should a chemical of this nature be released from your facility. If no list appears in this section, congratulations! It means there are no chemicals in your product inventory that fall into this category. Any chemicals that do appear can be an area for inventory control or product substitution in order to eliminate the risk.

The products/chemicals appearing here will be treated with a great deal of attention when the Hazard Determination Mandate is met in preparation for your OSHA Hazard Communication Training (Employee Right-to-Know) (see Part 4).

Please consider the following facts:

- Although EPA regulations do not yet require that carcinogens be shown on reports we prepare and file on behalf of your company, this information is invaluable when considering the long-term health of employees. The State of California has taken

19-Jan-01

CARCINOGENS REPORT

ARROW GEAR COMPANY

CARCINOGENS / MUTAGENS / TERATOGENS (S=SUSPECTED)

MSDS NO.	MANUFACTURER NAME	PRODUCT NAME	MAXIMUM WEIGHT	CHEMICAL NAME	CAS NUMBER	%	CHEMICAL WEIGHT	PHYSICAL STATE	NFPA / FPRACH / GLOES	CARCINOGEN / MUTAGEN / TERATOGEN
		CARCINOGENS / MUTAGENS / TERATOGENS BY CAS #								
49	ITW FLUID PRODUCTS GROUP	YELLOW DXX-526, DLT, DXX-340	72.65	ETHYL ALCOHOL	64-17-5	30	21.80	L	F/A@LES	C, ST
51	ITW FLUID PRODUCTS GROUP	STEEL BLUE; DX-100	70.15	ETHYL ALCOHOL	64-17-5	50	35.07	L	F/A@LES	C, ST
52	ITW FLUID PRODUCTS GROUP	STEEL RED; DX-986, DX-296; RED DL	70.15	ETHYL ALCOHOL	64-17-5	50	35.07	L	F/A@LES	C, ST
81	STANCHEM, INC.	CORROSION VARNISH	24.00	ETHYL ALCOHOL	64-17-5	26	6.24	L	F/A@LES	C, ST
82	STANCHEM, INC.	THINNER	20.40	ETHYL ALCOHOL	64-17-5	17	3.47	L	F/A@LES	C, ST
		CARCINOGENS / MUTAGENS / TERATOGENS BY CAS #								
102	MAYWOOD COMPANY	MAYWOOD ACRYL LACQUER THINNER	136.96	ACETONE	67-64-1	21	28.76	L	2-3-0 F/A/CH@LOES	SC
157	MOBIL OIL CORPORATION	MOBILTEMP SHC 32	50.00	ACETONE	67-64-1	5	2.50	GEL	0-1-0	SC
		CARCINOGENS / MUTAGENS / TERATOGENS BY CAS #								
65	THE TOLBER DIVISION	MICCROSTOP	7.93	PROPYLENE OXIDE	75-56-9	7	0.56	L	3-3-0 F/A@LES	SC
		CARCINOGENS / MUTAGENS / TERATOGENS BY CAS #								
49	ITW FLUID PRODUCTS GROUP	YELLOW DXX-526, DLT, DXX-340	72.65	TOLUENE	108-88-3	5	3.63	L	F/A@LES	T
70	MALLINCKRODT BAKER, INC.	TOLUENE	43.09	TOLUENE	108-88-3	100	43.09	L	2-3-0 F/A/CH@LOES	T
102	MAYWOOD COMPANY	MAYWOOD ACRYL LACQUER THINNER	136.96	TOLUENE	108-88-3	25	34.24	L	2-3-0 F/A/CH@LOES	T
110	RANDOLPH PRODUCTS COMPANY	AMS-3100~YELLOW ZINC CHROMATE PRIMER REV	38.80	TOLUENE	108-88-3	5	1.94	L	3-3-0 F/A/CH@LOES	T
127	MOBIL OIL CORPORATION	MOBIL VELOCITE OIL NO. 10	1,436.37	TOLUENE	108-88-3	0.01	0.14	L	0-1-0	T

COPYRIGHT 2000, VANGUARD ENVIRONMENTAL, INC.

ARROW GEAR COMPANY

CARCINOGENS / MUTAGENS / TERATOGENS (S=SUSPECTED)

MSDS NO.	MANUFACTURER NAME	PRODUCT NAME	MAXIMUM WEIGHT	CHEMICAL NAME	CAS NUMBER	%	CHEMICAL WEIGHT	PHYSICAL STATE	NFPA / FPRACH / GLOES	CARCINOGEN / MUTAGEN / TERATOGEN
166	MOBIL OIL CORPORATION	MOBIL MULTI-PURPOSE ATF	2,204.66	TOLUENE	108-88-3	0.09	1.98	L	0-1-0	T
		CARCINOGENS / MUTAGENS / TERATOGENS BY CAS #								
44	ERICH NUSSLE OHG	CONDURSAL N523	20.00	CHROMIUM OXIDE	1308-38-9	100	20.00	PST	F/A@LES	C
		CARCINOGENS / MUTAGENS / TERATOGENS BY CAS #								
15	KOEBEL METALLURGICAL	KOEBEL SUPER CATALYST	500.00	NICKEL OXIDE	1313-99-1	10	50.00	S	A@LES	SC
		CARCINOGENS / MUTAGENS / TERATOGENS BY CAS #								
14	FELLOWS CORPORATION	HIGH SPEED STEELS AND TUNGSTEN CARBIDES	100.00	CARBON BLACK	1333-86-4	2.3	2.30	S	A/CH@LES	C
139	FEL-PRO, INC.	CLOVER SILICON CARBIDE GREASE MIX	1,300.00	CARBON BLACK	1333-86-4	1	13.00	PST	0-1-0 A@E	C
		CARCINOGENS / MUTAGENS / TERATOGENS BY CAS #								
46	ERICH NUSSLE OHG	CONDURSAL 710	100.00	SODIUM SILICATE	1344-09-8	100	100.00	PST	A@LES	SC
		CARCINOGENS / MUTAGENS / TERATOGENS BY CAS #								
49	ITW FLUID PRODUCTS GROUP	YELLOW DXX-526, DLT, DXX-340	72.65	LEAD	7439-92-1	5	3.63	L	F/A@LES	SC
104	ARCONIUM SPECIALTY ALLOYS	OSTALLOY 158	30.00	LEAD	7439-92-1	27.3	8.19	S	3-0-1 A/CH@LES	SC
170	VARIOUS	CARBON STEEL - HR & CR LEADED STEEL	10,600.00	LEAD	7439-92-1	1	106.00	S	A/CH@LES	SC
172	VARIOUS	ALUMINUM ALLOYS, ALUMINUM ALLOYS	7,200.00	LEAD	7439-92-1	1	72.00	S	A/CH@LES	SC
		CARCINOGENS / MUTAGENS / TERATOGENS BY CAS #								
7	T.J. MARTIN COMPANY	NICKEL PLATED ABRASIVE PRODUCTS	10.00	NICKEL	7440-02-0	100	10.00	S	3-0-1 A/CH@LES	SC
9	SAF-T-EZE DIV., STL COMPOUND	SAF-T-EZE NICKEL PREMIUM ANTI-SEIZE	5.00	NICKEL	7440-02-0	100	5.00	GEL	A@ES	SC
14	FELLOWS CORPORATION	HIGH SPEED STEELS AND TUNGSTEN CARBIDES	100.00	NICKEL	7440-02-0	91.9	91.90	S	A/CH@LES	SC

COPYRIGHT 2000 VANGUARD ENVIRONMENTAL, INC.

ARROW GEAR COMPANY

CARCINOGENS / MUTAGENS / TERATOGENS (S=SUSPECTED)

MSDS NO.	MANUFACTURER NAME	PRODUCT NAME	MAXIMUM WEIGHT	CHEMICAL NAME	CAS NUMBER	%	CHEMICAL WEIGHT	PHYSICAL STATE	NFPA / FPRACH / GLOES	CARCINOGEN / MUTAGEN / TERATOGEN
40	SANDVIK COROMANT COMPANY	CBN	10.00	NICKEL	7440-02-0	0.35	0.04	S	A/CH@LES	SC
48	NORTON COMPANY	DIAMOND OR CUBIC BORON NITRIDE	5,000.00	NICKEL	7440-02-0	82	4,100.00	S	A@LES	SC
69	BRUSH WELLMAN ENGINEERING	COPPER BERYLLIUM WROUGHT ALLOYS	168.00	NICKEL	7440-02-0	22	36.96	S	A/CH@LES	SC
171	BRUSH WELLMAN ENGINEERED	COPPER BERYLLIUM WROUGHT ALLOY	275.00	NICKEL	7440-02-0	2.2	6.05	S	A/CH@LES	SC
172	VARIOUS	ALUMINUM ALLOYS, ALUMINUM ALLOYS	7,200.00	NICKEL	7440-02-0	0.5	36.00	S	A/CH@LES	SC
173	VARIOUS	STAINLESS STEEL	5,700.00	NICKEL	7440-02-0	27	1,539.00	S	A/CH@LES	SC
183	SANDVIK COROMANT COMPANY	ALL SANDVIK COROMANT CERMET GRADES	10.00	NICKEL	7440-02-0	15	1.50	S	A/CH@LES	SC
		CARCINOGENS / MUTAGENS / TERATOGENS BY CAS #								
69	BRUSH WELLMAN ENGINEERING	COPPER BERYLLIUM WROUGHT ALLOYS	168.00	BERYLLIUM	7440-41-7	2	3.36	S	A/CH@LES	SC
171	BRUSH WELLMAN ENGINEERED	COPPER BERYLLIUM WROUGHT ALLOY	275.00	BERYLLIUM	7440-41-7	2	5.50	S	A/CH@LES	SC
		CARCINOGENS / MUTAGENS / TERATOGENS BY CAS #								
104	ARCONIUM SPECIALTY ALLOYS	OSTALLOY 158	30.00	CADMIUM	7440-43-9	10.1	3.03	S	3-0-1 A/CH@LES	SC
105	HANDY & HARMAN	SILVER-COPPER-CADMIUM-ZINC BRAZING	10.00	CADMIUM	7440-43-9	24	2.40	S	A/CH@LES	SC
		CARCINOGENS / MUTAGENS / TERATOGENS BY CAS #								
10	MANCHASTER TOOL COMPANY	MANCHASTER TOOL CARBIDE	10.00	CHROMIUM	7440-47-3	5	0.50	S	A/CH@LES	C
14	FELLOWS CORPORATION	HIGH SPEED STEELS AND TUNGSTEN CARBIDES	100.00	CHROMIUM	7440-47-3	4.25	4.25	S	A/CH@LES	C
32	SANDVIK COROMANT COMPANY	ALL SANDVIK COROMANT CEMENTED TUNGSTEN	10.00	CHROMIUM	7440-47-3	3	0.30	S	A/CH@LES	C
40	SANDVIK COROMANT COMPANY	CBN	10.00	CHROMIUM	7440-47-3	2	0.20	S	A/CH@LES	C
41	SANDVIK COROMANT COMPANY	PCD	10.00	CHROMIUM	7440-47-3	2	0.20	S	A/CH@LES	C

COPYRIGHT 2000 VANGUARD ENVIRONMENTAL, INC

ARROW GEAR COMPANY

CARCINOGENS / MUTAGENS / TERATOGENS (S=SUSPECTED)

MSDS NO.	MANUFACTURER NAME	PRODUCT NAME	MAXIMUM WEIGHT	CHEMICAL NAME	CAS NUMBER	%	CHEMICAL WEIGHT	PHYSICAL STATE	NFPA / FPRACH / GLOES	CARCINOGEN / MUTAGEN / TERATOGEN
49	ITW FLUID PRODUCTS GROUP	YELLOW DXX-526, DLT, DXX-340	72.65	CHROMIUM	7440-47-3	5	3.63	L	F/A/@LES	C
172	VARIOUS	ALUMINUM ALLOYS, ALUMINUM ALLOYS	7,200.00	CHROMIUM	7440-47-3	0.5	36.00	S	A/CH@LES	C
173	VARIOUS	STAINLESS STEEL	5,700.00	CHROMIUM	7440-47-3	30	1,710.00	S	A/CH@LES	C
183	SANDVIK COROMANT COMPANY	ALL SANDVIK COROMANT CERMET GRADES	10.00	CHROMIUM	7440-47-3	3	0.30	S	A/CH@LES	C
		CARCINOGENS / MUTAGENS / TERATOGENS BY CAS #								
3	T.J. MARTIN COMPANY	ROTARY CUTTING TOOLS	10.00	COBALT	7440-48-4	25	2.50	S	A/CH@LES	C
10	MANCHASTER TOOL COMPANY	MANCHASTER TOOL CARBIDE	10.00	COBALT	7440-48-4	26	2.60	S	A/CH@LES	C
14	FELLOWS CORPORATION	HIGH SPEED STEELS AND TUNGSTEN CARBIDES	100.00	COBALT	7440-48-4	97	97.00	S	A/CH@LES	C
22	KENNMETAL, INC.	TUNGSTEN CARBIDE WITH COBALT BINDER	100.00	COBALT	7440-48-4	25	25.00	S	2-3-0 F/A/CH@LES	C
24	KENNMETAL, INC.	K313, K714, KC732, KS1, KZ313, KZ714, SP313, SP939	150.00	COBALT	7440-48-4	10	15.00	SP	1-3-0 F/A/CH@LES	C
32	SANDVIK COROMANT COMPANY	ALL SANDVIK COROMANT CEMENTED TUNGSTEN	10.00	COBALT	7440-48-4	16	1.60	S	A/CH@LES	C
40	SANDVIK COROMANT COMPANY	CBN	10.00	COBALT	7440-48-4	15	1.50	S	A/CH@LES	C
41	SANDVIK COROMANT COMPANY	PCD	10.00	COBALT	7440-48-4	23	2.30	S	A/CH@LES	C
48	NORTON COMPANY	DIAMOND OR CUBIC BORON NITRIDE	5,000.00	COBALT	7440-48-4	60	3,000.00	S	A@LES	C
52	ITW FLUID PRODUCTS GROUP	STEEL RED; DX-986, DX-296; RED DL	70.15	COBALT	7440-48-4	5	3.51	L	F/A/@LES	C
69	BRUSH WELLMAN ENGINEERING	COPPER BERYLLIUM WROUGHT ALLOYS	168.00	COBALT	7440-48-4	2.7	4.54	S	A/CH@LES	C
171	BRUSH WELLMAN ENGINEERED	COPPER BERYLLIUM WROUGHT ALLOY	275.00	COBALT	7440-48-4	2.7	7.43	S	A/CH@LES	C
172	VARIOUS	ALUMINUM ALLOYS, ALUMINUM ALLOYS	7,200.00	COBALT	7440-48-4	2	144.00	S	A/CH@LES	C
173	VARIOUS	STAINLESS STEEL	5,700.00	COBALT	7440-48-4	2	114.00	S	A/CH@LES	C

COPYRIGHT 2000, VANGUARD ENVIRONMENTAL, INC.

ARROW GEAR COMPANY

CARCINOGENS / MUTAGENS / TERATOGENS (S=SUSPECTED)

MSDS NO.	MANUFACTURER NAME	PRODUCT NAME	MAXIMUM WEIGHT	CHEMICAL NAME	CAS NUMBER	%	CHEMICAL WEIGHT	PHYSICAL STATE	NFPA / FPRACH / GLOES	CARCINOGEN / MUTAGEN / TERATOGEN
183	SANDVIK COROMANT COMPANY	ALL SANDVIK COROMANT CERMET GRADES	10.00	COBALT	7440-48-4	13	1.30	S	A/CH@LES	C
		CARCINOGENS / MUTAGENS / TERATOGENS BY CAS #								
39	SANDVIK COROMANT COMPANY	MOLYKOTE® 1000 PASTE	10.00	SILICON DIOXIDE	7631-86-9	3	0.30	PST	A/CH@LOES	SC
60	REFRACTORY PRODUCTS COMPANY	RPC2100, RPC2300	100.00	SILICON DIOXIDE	7631-86-9	65	65.00	S	1-0-0 A@LES	SC
112	POTTERS INDUSTRIES, INC.	BALLOTINI IMPACT BEADS	1,000.00	SILICON DIOXIDE	7631-86-9	100	1,000.00	SP	A@LE	SC
135	NEW CASTLE REFRACTORIES	SILICON CARBIDE: FINES, FRIT, OR CLAY BONDED	100.00	SILICON DIOXIDE	7631-86-9	15	15.00	S	A@LES	SC
139	FEL-PRO, INC.	CLOVER SILICON CARBIDE GREASE MIX	1,300.00	SILICON DIOXIDE	7631-86-9	1	13.00	PST	0-1-0 A@E	SC
		CARCINOGENS / MUTAGENS / TERATOGENS BY CAS #								
10	MANCHASTER TOOL COMPANY	MANCHASTER TOOL CARBIDE	10.00	CHROMIUM CARBIDE	12012-35-0	5	0.50	S	A/CH@LES	C
14	FELLOWS CORPORATION	HIGH SPEED STEELS AND TUNGSTEN CARBIDES	100.00	CHROMIUM CARBIDE	12012-35-0	5.1	5.10	S	A/CH@LES	C
24	KENNMETAL, INC.	K313, K714, KC732, KS1, KZ313, KZ714, SP313, SP939	150.00	CHROMIUM CARBIDE	12012-35-0	7	10.50	SP	1-3-0 F/A/CH@LES	C
32	SANDVIK COROMANT COMPANY	ALL SANDVIK COROMANT CEMENTED TUNGSTEN	10.00	CHROMIUM CARBIDE	12012-35-0	3	0.30	S	A/CH@LES	C
183	SANDVIK COROMANT COMPANY	ALL SANDVIK COROMANT CERMET GRADES	10.00	CHROMIUM CARBIDE	12012-35-0	2	0.20	S	A/CH@LES	C
		CARCINOGENS / MUTAGENS / TERATOGENS BY CAS #								
11.2	NORTON COMPANY	MICROGRADED ALUNDUM	100.00	TITANIUM DIOXIDE	13463-67-7	2.8	2.80	SP	0-0-0 A@LES	C
12	DETREX CORPORATION	WHITE GEAR MARKING COMPOUND	10.00	TITANIUM DIOXIDE	13463-67-7	45	4.50	PST	A@E	C
14	FELLOWS CORPORATION	HIGH SPEED STEELS AND TUNGSTEN CARBIDES	100.00	TITANIUM DIOXIDE	13463-67-7	91.9	91.90	S	A/CH@LES	C
32	SANDVIK COROMANT COMPANY	ALL SANDVIK COROMANT CEMENTED TUNGSTEN	10.00	TITANIUM DIOXIDE	13463-67-7	23	2.30	S	A/CH@LES	C
40	SANDVIK COROMANT COMPANY	CBN	10.00	TITANIUM DIOXIDE	13463-67-7	23	2.30	S	A/CH@LES	C

COPYRIGHT 2000, VANGUARD ENVIRONMENTAL, INC.

ARROW GEAR COMPANY

CARCINOGENS / MUTAGENS / TERATOGENS (S=SUSPECTED)

MSDS NO.	MANUFACTURER NAME	PRODUCT NAME	MAXIMUM WEIGHT	CHEMICAL NAME	CAS NUMBER	%	CHEMICAL WEIGHT	PHYSICAL STATE	NFPA / FPRACH / GLOES	CARCINOGEN / MUTAGEN / TERATOGEN
41	SANDVIK COROMANT COMPANY	PCD	10.00	TITANIUM DIOXIDE	13463-67-7	23	2.30	S	A/CH@LES	C
49	ITW FLUID PRODUCTS GROUP	YELLOW DXX-526, DLT, DXX-340	72.65	TITANIUM DIOXIDE	13463-67-7	5	3.63	L	F/A@LES	C
113	SINCLAIR MINERAL & CHEMICAL COMPANY	EXOLON, FASTBLAST	1,000.00	TITANIUM DIOXIDE	13463-67-7	4	40.00	SP	A@LE	C
183	SANDVIK COROMANT COMPANY	ALL SANDVIK COROMANT CERMET GRADES	10.00	TITANIUM DIOXIDE	13463-67-7	53	5.30	S	A/CH@LES	C
		CARCINOGENS / MUTAGENS / TERATOGENS BY CAS #								
5	POCO GRAPHITE, INC.	POCO GRAPHITE EDM-3	1.00	CRYSTALLINE SILICA	14808-60-7	1	0.01	S	A@LE	C
11	NORTON COMPANY	ARROWBLAST, TBS	100.00	CRYSTALLINE SILICA	14808-60-7	1	1.00	SP	0-0-0 A@LES	C
11.1	NORTON COMPANY	CRYSTOLON, SILICON CARBIDE	1,000.00	CRYSTALLINE SILICA	14808-60-7	1	10.00	SP	0-0-0 A@LES	C
48	NORTON COMPANY	DIAMOND OR CUBIC BORON NITRIDE	5,000.00	CRYSTALLINE SILICA	14808-60-7	1	50.00	S	A@LES	C
141	DOW CORNING CORPORATION	COW CORNING 2 MOLY POWDER	40.08	CRYSTALLINE SILICA	14808-60-7	0.3	0.12	SP		C
187	AMERICAN COLLOID COMPANY	OIL ABSORBENT	2,000.00	CRYSTALLINE SILICA	14808-60-7	6	120.00	SP	A@L	C
		CARCINOGENS / MUTAGENS / TERATOGENS BY CAS #								
118	MOBIL OIL CORPORATION	MOBIL ALMO 525	10.00	PARAFFIN WAXES AND HYDROCARBON WAXES,	63449-39-8	2.03	0.20	L	0-1-0	SC
143	HANGSTERFER'S LABORATORIES, INC.	HANGSTERFER'S ALDRAW J-1	101.88	PARAFFIN WAXES AND HYDROCARBON WAXES,	63449-39-8	100	101.88	L	1-1-0 A@E	SC
		CARCINOGENS / MUTAGENS / TERATOGENS BY CAS #								
112	POTTERS INDUSTRIES, INC.	BALLOTINI IMPACT BEADS	1,000.00	AMORPHOUS SODIUM / CALCIUM BOROSILICATE	65997-17-3	100	1,000.00	SP	A@LE	SC

TOTAL WEIGHT OF PRODUCT W/CARCINOGEN= 88,579.85 ***CARCINOGEN TOTAL WEIGHT= 14,160.16***

COPYRIGHT 2000 VANGUARD ENVIRONMENTAL, INC

VANGUARD
ENVIRONMENTAL, INC.
ENVIRONMENTAL & SAFETY COMPLIANCE SPECIALISTS

Part 6

SARA 302 (EHS)

Extremely Hazardous Substances

In comparing your site-specific chemical inventory with Section 302 Extremely Hazardous Substances (EHS's) of SARA Title III/EPCRA, we found the chemicals regulated under this subsection of the law present at your facility as displayed in chemical groupings (as opposed to products) in this section of the document book.

These chemicals, even in small quantities or concentrations, have been determined by the EPA to be a risk to both your employees and the community-at-large and represent extreme or severe health and safety hazards. This is an important area to research when preparation is being made to do your Hazard Communication Training (Employee Right-To-Know) under the Hazard Determination Mandate of OSHA's Hazard Communication Standard of 1987 and subsequent amendments.

"Aggregate Total" Ruling

When exceeding Threshold Planning Quantities (TPQ's) as assigned specifically to each of the some 375-odd EHS chemicals, additional reporting requirements are triggered. These calculations can be difficult to determine and track as the "aggregate total rule" applies when a given EHS pervades a company's product line, thereby existing in several products in varying amounts and concentrations. Care must be taken in accounting for each chemical constituent so as to report its aggregate total to EPA agencies.

Any company which inventories an EHS above its TPQ must report it to appropriate EPA agencies at local and state levels. The state will expedite the report on to the EPA Regional Office having jurisdiction over the facility. The facility is also subject to the

19-Jan-01

SECTION 302 EHS CHEMICALS REPORT

SECTION 302 EHS REPORT: ARROW GEAR COMPANY

ID	MSDS NO.	MANUFACTURER NAME	PRODUCT NAME	MAXIMUM WEIGHT	CHEMICAL NAME	%	CHEMICAL WEIGHT	CAS NUMBER	PHYSICAL STATE	EHS-TPQ
	EHS CHEMICAL GROUP BY CAS #									
231	65	THE TOLBER DIVISION	MICCROSTOP	7.93	PROPYLENE OXIDE	7	0.56	75-56-9	L	10000
					EHS CHEMICAL AGGREGATE =		0.56			
	EHS CHEMICAL GROUP BY CAS #									
49	14	FELLOWS CORPORATION	HIGH SPEED STEELS AND TUNGSTEN	100.00	VANADIUM PENTOXIDE	6.5	6.50	1314-62-1	S	100
					EHS CHEMICAL AGGREGATE =		6.50			
	EHS CHEMICAL GROUP BY CAS #									
277	89	LAROCHE INDUSTRIES, INC.	AMMONIA	450.00	AMMONIA	99.5	447.75	7664-41-7	L	500
					EHS CHEMICAL AGGREGATE =		447.75			
	EHS CHEMICAL GROUP BY CAS #									
184	48	NORTON COMPANY	DIAMOND OR CUBIC BORON NITRIDE	5,000.00	PHOSPHORUS	1	50.00	7723-14-0	S	100
479	170	VARIOUS	CARBON STEEL - HR & CR LEADED STEEL	10,600.00	PHOSPHORUS	1	106.00	7723-14-0	S	100
511	173	VARIOUS	STAINLESS STEEL	5,700.00	PHOSPHORUS	2	114.00	7723-14-0	S	100
					EHS CHEMICAL AGGREGATE =		270.00			
	EHS CHEMICAL GROUP BY CAS #									
370	118	MOBIL OIL CORPORATION	MOBIL ALMO 525	10.00	CHLORINE	0.9	0.09	7782-50-5	L	100
438	155	MOBIL OIL CORPORATION	MOBILMET NU	14,764.57	CHLORINE	0.8	118.12	7782-50-5	L	100
447	159	MOBIL OIL CORPORATION	MOBILUX EP 023	75.33	CHLORINE	0.63	0.47	7782-50-5	GEL	100
					EHS CHEMICAL AGGREGATE =		118.68			

COPYRIGHT 2000 VANGUARD ENVIRONMENTAL, INC.

SECTION 302 EHS REPORT: ARROW GEAR COMPANY

ID	MSDS NO.	MANUFACTURER NAME	PRODUCT NAME	MAXIMUM WEIGHT	CHEMICAL NAME	%	CHEMICAL WEIGHT	CAS NUMBER	PHYSICAL STATE	EHS-TPQ
		PRODUCT AGGREGATE WEIGHT=		36,707.83	EHS COMPONENT TOTAL =		843.49			

VANGUARD
ENVIRONMENTAL, INC.
ENVIRONMENTAL & SAFETY COMPLIANCE SPECIALISTS

Part 7

Section 304
Comprehensive Environmental Response, Compensation, and Liability Act (and Amendments)

Chemical Spills and Releases

Section 304 of SARA Title III is an outgrowth of the original Superfund Law of 1980. It is now known as CERCLA, the Comprehensive Environmental Response, Compensation, and Liability Act (and Amendments). The number of chemicals subject to this Section of the Act has grown from the original 721 to approximately 775. If you ever have an emergency release of a subject chemical, you will want to turn directly to the emergency procedure on the following page which is also provided for purposes of posting in the front pocket of this book. We don't want anything to keep you from being able to find the proper procedure if such an event occurs.

Incidentally, the U.S. EPA modified Reportable Quantities (RQ's) of 202 chemicals in this section going into the 1997 Compliance Year. However, a part of Vanguard's's service and continuous improvement/legislative updating incorporated these changes for all clients.

The chemicals on the data table that follows are representative of those Section 304 chemicals in your facility. Under Section 304 CERCLA of SARA Title III, you have a reportable release if:

1. Your facility uses, stores, or produces a hazardous chemical; and

2. The amount of chemical lost exceeds its Reportable Quantity (RQ).

EMERGENCY PROCEDURE

FOR CERCLA ACCIDENTAL CHEMICAL RELEASE OR SPILL

IMPORTANT!!!

Should there occur an accidental release or spill of any chemical(s) listed in Part 7 at or above its Reportable Quantity (RQ) that cannot be contained within the facility,

IMMEDIATELY TELEPHONE THE NATIONAL RESPONSE CENTER !!!

☞ 1 (800) 424-8802 ☜

BE PREPARED TO PROVIDE THE FOLLOWING INFORMATION

(Personnel at the Center will record your answers to the following questions via computer)

1. Name of facility (complete company and branch identification).
2. Facility phone number (including area code).
3. Address of facility (including zip code, if site is remote include township, range, & location information).
4. Who spilled chemical (person's name)?
5. Source and cause [example = tank valve leak caused by forklift accident].
6. Time and date of spill (identify AM or PM for time).
7. Location of Spill. (May be different from address of facility).
8. County of spill. (County in which spill occurred).
9. What chemical(s) was spilled? (identify by chemical name).
10. Quantity of chemical spill (how much was spilled in POUNDS, your chemicals listed in Part 2 have their weight shown in pounds).
11. Was any waterway affected?
12. What remedial action was taken?
13. Was there any injury, evacuation, or damages?
14. Was the State Emergency Response Commission (SERC) notified?

Please refer to Part 7 of Your Document Book for State Emergency Notification Information

When the Shipping Paper is Unavailable, or the Emergency Response Telephone Numbers Have Not Been Listed, call the Chemical Transportation Emergency Center (CHEMTREC):

1 (800) 424-9300

Provided Courtesy of Vanguard Environmental, Inc.

CERCLA SPILL REPORTING AGENCIES AND PHONE NUMBERS

ID	STATE	EMERGENCY NUMBERS	CONTACT NAME	SECTION 304 SPILL REPORTING AGENCY	DEPARTMENT OR DIVISION
1	ALABAMA	(800) 843-0699 (205) 242-4378	E. John Williford	Alabama Department of Environmental Management	*Field Operations Division*
2	ALASKA	(800) 478-9300 (907) 465-5220	Camille Stephens	Alaska Department of Environmental Conservation	
3	ARIZONA	(602) 257-2330 (602) 223-2212	Ethel DeMarr	Arizona Emergency Response Commission	*Division of Emergency Services*
4	ARKANSAS	(800) 322-4012 (501) 374-1201	John Ward	Arkansas Department of Pollution Control and Ecology	*Emergency Response Coordinator*
5	CALIFORNIA	(800) 852-7550 (916) 262-1621	Fred Lercari	Governor's Office of Emergency Services (CEPRC/LEPC)	*Section 304*
6	COLORADO	(303) 756-4455 (303) 692-3434	Pam Harley Winifred Bromley	Colorado Emergency Planning Commission	*Pam Harley*
7	CONNECTICUT	(203) 566-3338 (203) 566-4685	Sue Vaughn	Connecticut Emergency Response Commission	*Department of Environmental Protection/Waste Management*
8	DELAWARE	(800) 662-8802 (302) 739-5072	Joseph Wessels	Department of Public Safety	*Division of Emergency Planning and Operations*
9	DISTRICT OF COLUMBIA	(202) 727-6161	Pamela Thurber	Office of Emergency Preparedness	
10	FLORIDA	(904) 488-1320 (904) 487-4918	Robert Nave	Department of Community Affairs	*Division of Emergency Management*
11	GEORGIA	(800) 241-4113 (404) 656-4863	Dr. Bert Langley	Environmental Protection Division	*Department of Natural Resources*
12	HAWAII	(808) 586-4249		Office of Hazard Evaluation and Emergency Response	*Hawaii Department of Health*
13	IDAHO	(800) 632-8000 (208) 327-7422	Margaret Ballard	Idaho Emergency Response Commission	
14	ILLINOIS	(800) 782-7860 (217) 782-7860	Oran Robinson	Hazardous Materials Program	*Illinois Management Agency*
15	INDIANA	(317) 241-4336	Ken Rogers	Indiana Emergency Response Commission	
16	IOWA	(515) 281-8883 (515) 281-3231	L. Don Peddy	Emergency Response Division	*Department of Natural Resources*
17	KANSAS	(785) 296-3176	Sandy Johnson	Division of Emergency Preparedness	
18	KENTUCKY	(502) 564-7815	Lucille Orlando	Kentucky Emergency Response Commission	*Disaster and Emergency Services Division*
19	LOUISIANA	(504) 925-6595	Louisiana State Police	Louisiana Emergency Response Commission	*Transportation and Environmental Safety Section/Right-to-Know Unit*
20	MAINE	(800) 452-4664 (207) 624-7000	Rayna Leibowitz	Emergency Response Commission/ Emergency Management Agency	*Department of Defense and Veteran Services*
21	MARYLAND	(410) 631-3800 (410) 333-2950	SARA	Department of the Environment	*Toxic Registries Division*

ID	STATE	EMERGENCY NUMBERS	CONTACT NAME	SECTION 304 SPILL REPORTING AGENCY	DEPARTMENT OR DIVISION
22	MASSACHUSETTS	(617) 566-4500 (617) 727-7035	Mike Feeney	Bureau of Environmental Health Assessment	*Emergency Response/R-T-K Unit*
23	MICHIGAN	(800) 292-4706 (517) 373-7660	Kent Kanagy	Emergency Planning and Community Right-to-Know Commission	*Michigan Department of Natural Resources/Environmental Response Division.*
24	MINNESOTA	(800) 422-0798	Steve Tomlyanovich	State Emergency Response Commission	
25	MISSISSIPPI	(800) 222-6362 (601) 352-9100	John David Burns	Mississippi Emergency Response Commission	
26	MISSOURI	(314) 526-3901		Missouri Department of Public Safety	*Division of Fire Safety*
27	MONTANA	(406) 444-6911 (406) 444-3948	Tom Ellerhoff	Department of Health and Environmental Science	
28	NEBRASKA	(402) 471-2186 (402) 471-4545	John Steinauer	Department of Environmental Quality	
29	NEVADA	(702) 687-5300 (702) 687-4240	Bob Andrews	State Emergency Response Commission	*Division of Emergency Management*
30	NEW HAMPSHIRE	(800) 346-4009 (603) 271-3636	Leland Kimball	Emergency Response Commission	*New Hampshire Office of Emergency Management*
31	NEW JERSEY	(609) 292-7172 (609) 633-2168	Stan Delikat	New Jersey Department of Environmental Protection and Energy	*Emergency Response Unit*
32	NEW MEXICO	(505) 827-9223 (505) 827-9223	Max Johnson	Emergency Management Bureau	*Department of Public Safety*
33	NEW YORK	(800) 457-7362 (518) 457-2200	William J. Miner	New York Department of Environmental Conservation	
34	NORTH CAROLINA	(800) 662-7965 (518) 457-2200	Emily Kilpatrick	North Carolina Emergency Response Commission	
35	NORTH DAKOTA	(800) 472-2121 (701) 224-3300	Doug Friez	State Emergency Response Commission	
36	OHIO	(800) 282-9378 (614) 224-0946	Ken Shultz	Ohio Environmental Protection Agency	*State Emergency Response Commission*
37	OKLAHOMA	(800) 522-0206 (405) 271-4468	Monty Elder	Department of Environmental Quality	
38	OREGON	(800) 452-0311 (503) 378-6377	Dennis Walthall	State Emergency Response Commission	*State Fire Marshal/Hazard Communication System*
39	PENNSYLVANIA	(717) 783-8150	Robert Broiles	Pennsylvania Emergency Management Council	*Pennsylvania Emergency Management Council*
40	RHODE ISLAND	(401) 274-7745	John Alcott	Rhode Island Emergency Management Agency	
41	SOUTH CAROLINA	(803) 253-6488 (803) 935-6336	Michael Juras	EPCRA Reporting Point	
42	SOUTH DAKOTA	(605) 773-3231	Lee Ann Smith	South Dakota Department of Environment and Natural Resources	*Division of Environmental Regulation*
43	TENNESSEE	(800) 258-3300 (800) 262-3300	Danny Newton	Tennessee Emergency Management Agency	
44	TEXAS	(512) 463-7727 (512) 908-1876	David Barker	Texas Water Commission	*Emergency Response Unit*

ID	STATE	EMERGENCY NUMBERS	CONTACT NAME	SECTION 304 SPILL REPORTING AGENCY	DEPARTMENT OR DIVISION
45	UTAH	(801) 536-4123	Neil Taylor	Division of Environmental Response and Remediation	
46	VERMONT	(800) 641-5005 (802) 244-8721	Ray McCandless	Department of Health	*Emergency Management Division*
47	VIRGINIA	(800) 468-8892 (804) 323-2300	Cathy Harris	SARA Title III Program	*Virginia Department of Waste Management*
48	WASHINGTON	(800) 258-5990	Idell Hanson	State Emergency Response Commission	*Department of Community Development, Emergency Management Division*
49	WEST VIRGINIA	(304) 558-5380	Carl L. Bradford	Director of the Office of Emergency Services	
50	WISCONSIN	(608) 266-3232	Bill Lalley	State Emergency Response Board	*Facility Reporting Section*
51	WYOMING	(307) 777-7781 (307) 777-7937	Joe Daly	Department of Environmental Quality	*State Emergency Response Commission*

Here are the action steps to follow should your facility have such an event:

1. Look up the **product** you've released and calculate how many pounds you've lost.

2. Multiply the **pounds lost** by the **percentage weight** of each **chemical constituent** within the product that also shows up on the following 304 list.

3. If the resultant loss in pounds meets or exceeds the chemical(s) Reportable Quantity (RQ), turn directly to the previous page and follow the prescribed Emergency Procedure.

REMEMBER, THERE IS NO PENALTY FOR HAVING AN ACCIDENTAL RELEASE, BUT A PENALTY IS LIKELY IF THE EMERGENCY PROCEDURE IS NOT FOLLOWED, THUS ALLOWING AN EMERGENCY RELEASE TO GO UNREPORTED.

The government's philosophy on reporting accidental releases is referred to as the "One Hour-Five Day" rule. That is, you must report an accidental release by telephone within one hour of your knowledge of the release, and then follow up in writing within five days.

Releases Not Reportable Under Section 304

1. Any release which results in exposure to persons only within the boundaries of your facility. Note: any release affecting your employees may well be an OSHA-reportable incident, and many state laws now require immediate reporting of any toxic or other chemical release which "requires or may require" emergency response by public safety personnel;

2. Any release which is a Federally permitted release under CERCLA Section 101 (10); and

3. Any release which CERCLA 103 (f) defines as "continuous," except for "statistically significant increases" or any chemical exempt from CERCLA Emergency Release Reporting.

Other Required Notices for an Emergency Release:

1. The owner/operator of your facility must immediately file a verbal notification report with the National Response Center. Within the first hour, you must also make a verbal report to the emergency coordinator of any local emergency planning committee (LEPC) in areas likely to be affected by the release and the state emergency response commission (SERC) of any state likely to be affected by the release. If there is no LEPC, then you must notify the Fire Department. It is our strong recommendation that you not notify anyone other than aforementioned agencies. Do not call OSHA, an agency outside the jurisdiction of this EPA law. Do not call the media.

2. To the extent known at the time of the report, and so long as you do not delay emergency response results, your initial verbal notice must include the following information:

   - the chemical name / identity of any substance involved in the release;
   - an indication of whether the chemical is an EHS;
   - an estimate of the quantity released into the environment;
   - the time and duration of the release;
   - the medium or media (air, soil, water) into which the release occurred;
   - any known or anticipated acute or chronic health risks associated with the emergency and, where appropriate, advise about medical attention needed for exposed individuals;
   - proper precautions to take as a result of the release, including evacuation, unless the community emergency agency already has this information in their plan; and
   - the names and telephone numbers of the person(s) to be contacted for further information.

3. Within 5 days, you must provide a written follow-up emergency notice, setting forth and updating your previous information on the release, and adding additional pertinent information regarding:

   - the actions your company took to respond to, and contain the release;
   - any known or anticipated acute or chronic health risks associated with the release; and
   - where appropriate, advise about medical attention necessary for exposed individuals.

Exceptions to the Requirements

If there is a transportation related release from your facility, you may meet the requirements of Section 304 by providing the same required information to the 9-1-1 emergency phone number, giving the release report to the Operator. Transportation-related release is defined as a release or spill wherein the stored substance is being transported under active shipping papers and has not yet reached the ultimate consignee.

The Spill Prevention, Control and Countermeasure Plan (SPCC - 40 CFR 112)

The EPA requires the Spill Prevention, Control, and Countermeasure Plan (SPCC) as a spill response procedure to prevent the discharge of chemicals, fuels, and all oil-related products to U.S. water tables, aquifers, streams, reservoirs, and rivers which would eventually convey the pollutants to navigable waters. The plan implemented by identifying potential spills and establishing equipment and procedures to prevent the occurrence of a spill and to provide immediate response and notification should a spill occur. The obvious purpose of the SPCC is to prevent the loss of life (human or otherwise), property, and release of hazardous substances to the environment.

A harmful spill, in terms of quantity, is defined by the U.S. Environmental Protection Agency (EPA) as a discharge which violates applicable water quality standards and/or one which causes a sheen, film or discoloration of the surface of the water or adjoining banks and shorelines, including discharges that may cause a sludge or emulsion deposit beneath the surface of the water or upon adjoining banks and shorelines.

The SPCC is required for fixed facilities which store chemicals, fuels, or oil-related products under the following conditions:

- The product is stored above ground at 660 gallons or more in a single container or at a total capacity of more than 1,320 gallons; or
- The product is stored underground at capacities in excess of 42,000 gallons; and
- It would be reasonable to expect that the product would be discharged into U.S. waters were a spill to occur.

The plan covers three basic functions:

- Practices devoted to the prevention of spills;
- Plans for containment should a spill occur; and
- Plans for removal, cleanup, and disposal of the spilled material.

19-Jan-01

SECTION 304 CERCLA REPORT

SECTION 304 CERCLA REPORT: ARROW GEAR COMPANY

ID	MSDS NO.	PRODUCT NAME	MAXIMUM WEIGHT	CHEMICAL NAME	%	CHEMICAL WEIGHT	CAS NUMBER	PHYSCIAL STATE	CONTAINER	CERCLA RQ	SPCC
	304 CHEMICAL BY NAME										
315	102	MAYWOOD ACRYL LACQUER THINNER	136.96	ACETONE	21	28.76	67-64-1	L	STEEL DRUM	5000	
440	157	MOBILTEMP SHC 32	50.00	ACETONE	5	2.50	67-64-1	GEL	CARTRIDGE	5000	
				AGGREGATE WEIGHT FOR 304 CHEMICALS =		***31.26***					
	304 CHEMICAL BY NAME										
283	94	PERCHEM 1140	6,558.04	ALIPHATIC PETROLEUM DISTILLATES	100	6,558.04	64742-47-8	L	AST		SPCC
284	95	PERKOTE 30-353-AG	6,985.61	ALIPHATIC PETROLEUM DISTILLATES	55	3,842.09	64742-47-8	L	AST		SPCC
				AGGREGATE WEIGHT FOR 304 CHEMICALS =		***10,400.13***					
	304 CHEMICAL BY NAME										
474	170	CARBON STEEL - HR & CR LEADED STEEL	10,600.00	ALUMINUM	1	106.00	7429-90-5	S	RAW		SPCC
488	172	ALUMINUM ALLOYS, ALUMINUM ALLOYS	7,200.00	ALUMINUM	99.7	7,178.40	7429-90-5	S	RAW		SPCC
				AGGREGATE WEIGHT FOR 304 CHEMICALS =		***7,284.40***					
	304 CHEMICAL BY NAME										
169	48	DIAMOND OR CUBIC BORON NITRIDE GRINDING WHEELS	5,000.00	ALUMINUM OXIDE	81	4,050.00	1344-28-1	S	RAW		SPCC
				AGGREGATE WEIGHT FOR 304 CHEMICALS =		***4,050.00***					
	304 CHEMICAL BY NAME										
277	89	AMMONIA	450.00	AMMONIA	99.5	447.75	7664-41-7	L	CYLINDER	100	
				AGGREGATE WEIGHT FOR 304 CHEMICALS =		***447.75***					

COPYRIGHT 2000, VANGUARD ENVIRONMENTAL, INC.

1. 4,409 LBS (660 GAL) + L + AST
2. 8,818 LBS (1,320 GAL) + L + 2 AST's
3. 280,593 LBS (42,000 GAL) + L + UST

} = SPCC

SECTION 304 CERCLA REPORT: ARROW GEAR COMPANY

ID	MSDS NO.	PRODUCT NAME	MAXIMUM WEIGHT	CHEMICAL NAME	%	CHEMICAL WEIGHT	CAS NUMBER	PHYSCIAL STATE	CONTAINER	CERCLA RQ	SPCC
	304 CHEMICAL BY NAME										
128	35	METEX FA COPPER STRIPPER	4,000.00	AMMONIUM HYDROXIDE	25	1,000.00	1336-21-6	L	POLY DRUM	1000	
				AGGREGATE WEIGHT FOR 304 CHEMICALS =		*1,000.00*					
	304 CHEMICAL BY NAME										
90	28	BLASOCUT 2000 UNIVERSAL	8,150.58	ANIONIC EMULSIFIERS	45	3,667.76	61790-44-1	L	STEEL DRUM		SPCC
				AGGREGATE WEIGHT FOR 304 CHEMICALS =		*3,667.76*					
	304 CHEMICAL BY NAME										
240	69	COPPER BERYLLIUM WROUGHT ALLOYS	168.00	BERYLLIUM	2	3.36	7440-41-7	S	RAW	10	
486	171	COPPER BERYLLIUM WROUGHT ALLOY	275.00	BERYLLIUM	2	5.50	7440-41-7	S	RAW	10	
				AGGREGATE WEIGHT FOR 304 CHEMICALS =		*8.86*					
	304 CHEMICAL BY NAME										
475	170	CARBON STEEL - HR & CR LEADED STEEL	10,600.00	BISMUTH	1	106.00	7440-69-9	S	RAW		SPCC
				AGGREGATE WEIGHT FOR 304 CHEMICALS =		*106.00*					
	304 CHEMICAL BY NAME										
175	48	DIAMOND OR CUBIC BORON NITRIDE GRINDING WHEELS	5,000.00	BORON NITRIDE	5	250.00	10043-11-5	S	RAW		SPCC
				AGGREGATE WEIGHT FOR 304 CHEMICALS =		*250.00*					
	304 CHEMICAL BY NAME										
185	49	YELLOW DXX-526, DLT, DXX-340	72.65	BUTYL ACETATE	50	36.33	123-86-4	L	BOTTLE	5000	
197	51	STEEL BLUE; DX-100	70.15	BUTYL ACETATE	50	35.07	123-86-4	L	GLASS BOTTLE	5000	
203	52	STEEL RED; DX-986, DX-296; RED DL	70.15	BUTYL ACETATE	50	35.07	123-86-4	L	GLASS BOTTLE	5000	
260	81	CORROSION VARNISH	24.00	BUTYL ACETATE	24	5.76	123-86-4	L	CAN	5000	

COPYRIGHT 2000, VANGUARD ENVIRONMENTAL, INC.

1. 4,409 LBS (660 GAL) + L + AST
2. 8,818 LBS (1,320 GAL) + L + 2 AST's
3. 280,593 LBS (42,000 GAL) + L + UST
} *= SPCC*

SECTION 304 CERCLA REPORT: ARROW GEAR COMPANY

ID	MSDS NO.	PRODUCT NAME	MAXIMUM WEIGHT	CHEMICAL NAME	%	CHEMICAL WEIGHT	CAS NUMBER	PHYSCIAL STATE	CONTAINER	CERCLA RQ	SPCC
263	82	THINNER	20.40	BUTYL ACETATE	25	5.10	123-86-4	L	CAN	5000	
320	102	MAYWOOD ACRYL LACQUER THINNER	136.96	BUTYL ACETATE	5	6.85	123-86-4	L	STEEL DRUM	5000	
524	180	POLYURETHANE CATALYST	8.85	BUTYL ACETATE	20	1.77	123-86-4	L	CAN	5000	
				AGGREGATE WEIGHT FOR 304 CHEMICALS =		*125.95*					
	304 CHEMICAL BY NAME										
186	49	YELLOW DXX-526, DLT, DXX-340	72.65	BUTYL ALCOHOL	30	21.80	71-36-3	L	BOTTLE	5000	
199	51	STEEL BLUE; DX-100	70.15	BUTYL ALCOHOL	5	3.51	71-36-3	L	GLASS BOTTLE	5000	
206	52	STEEL RED; DX-986, DX-296; RED DL	70.15	BUTYL ALCOHOL	5	3.51	71-36-3	L	GLASS BOTTLE	5000	
261	81	CORROSION VARNISH	24.00	BUTYL ALCOHOL	20	4.80	71-36-3	L	CAN	5000	
269	83	DAG 154	826.75	BUTYL ALCOHOL	5	41.34	71-36-3	L	STEEL DRUM	5000	
346	110	AMS-3100~YELLOW ZINC CHROMATE PRIMER REV G	38.80	BUTYL ALCOHOL	15	5.82	71-36-3	L	CAN	5000	
				AGGREGATE WEIGHT FOR 304 CHEMICALS =		*80.77*					
	304 CHEMICAL BY NAME										
327	104	OSTALLOY 158	30.00	CADMIUM	10.1	3.03	7440-43-9	S	RAW	10	
331	105	SILVER-COPPER-CADMIUM-ZINC BRAZING ALLOYS	10.00	CADMIUM	24	2.40	7440-43-9	S	RAW	10	
				AGGREGATE WEIGHT FOR 304 CHEMICALS =		*5.43*					
	304 CHEMICAL BY NAME										
472	170	CARBON STEEL - HR & CR LEADED STEEL	10,600.00	CARBON	2	212.00	7440-44-0	S	RAW		SPCC
507	173	STAINLESS STEEL	5,700.00	CARBON	2	114.00	7440-44-0	S	RAW		SPCC
				AGGREGATE WEIGHT FOR 304 CHEMICALS =		*326.00*					

COPYRIGHT 2000, VANGUARD ENVIRONMENTAL, INC.

1. 4,409 LBS (660 GAL) + L + AST
2. 8,818 LBS (1,320 GAL) + L + 2 AST's
3. 280,593 LBS (42,000 GAL) + L + UST
} = SPCC

SECTION 304 CERCLA REPORT: ARROW GEAR COMPANY

ID	MSDS NO.	PRODUCT NAME	MAXIMUM WEIGHT	CHEMICAL NAME	%	CHEMICAL WEIGHT	CAS NUMBER	PHYSCIAL STATE	CONTAINER	CERCLA RQ	SPCC
	304 CHEMICAL BY NAME										
91	28	BLASOCUT 2000 UNIVERSAL	8,150.58	CASTOR OIL, ETHOXYLATED	45	3,667.76	61791-12-6	L	STEEL DRUM		SPCC
				AGGREGATE WEIGHT FOR 304 CHEMICALS =		***3,667.76***					
	304 CHEMICAL BY NAME										
370	118	MOBIL ALMO 525	10.00	CHLORINE	0.9	0.09	7782-50-5	L	POLY JUG	10	
438	155	MOBILMET NU	14,764.57	CHLORINE	0.8	118.12	7782-50-5	L	STEEL DRUM	10	SPCC
447	159	MOBILUX EP 023	75.33	CHLORINE	0.63	0.47	7782-50-5	GEL	POLY DRUM	10	
				AGGREGATE WEIGHT FOR 304 CHEMICALS =		***118.68***					
	304 CHEMICAL BY NAME										
93	28	BLASOCUT 2000 UNIVERSAL	8,150.58	CHLOROALKANES	15	1,222.59	61788-76-9	L	STEEL DRUM		SPCC
437	155	MOBILMET NU	14,764.57	CHLOROALKANES	1.9	280.53	61788-76-9	L	STEEL DRUM		SPCC
				AGGREGATE WEIGHT FOR 304 CHEMICALS =		***1,503.11***					
	304 CHEMICAL BY NAME										
22	10	MANCHASTER TOOL CARBIDE	10.00	CHROMIUM	5	0.50	7440-47-3	S	RAW	5000	
51	14	HIGH SPEED STEELS AND TUNGSTEN CARBIDES	100.00	CHROMIUM	4.25	4.25	7440-47-3	S	RAW	5000	
111	32	ALL SANDVIK COROMANT CEMENTED TUNGSTEN	10.00	CHROMIUM	3	0.30	7440-47-3	S	RAW	5000	
143	40	CBN	10.00	CHROMIUM	2	0.20	7440-47-3	S	RAW	5000	
152	41	PCD	10.00	CHROMIUM	2	0.20	7440-47-3	S	RAW	5000	
189	49	YELLOW DXX-526, DLT, DXX-340	[illegible]	CHROMIUM	5	3.63	7440-47-3	L	BOTTLE	5000	
498	172	ALUMINUM ALLOYS, ALUMINUM ALLOYS	7,200.00	CHROMIUM	0.5	36.00	7440-47-3	S	RAW	5000	SPCC

COPYRIGHT 2000, VANGUARD ENVIRONMENTAL, INC.

1. *4,409 LBS (660 GAL) + L + AST*
2. *8,818 LBS (1,320 GAL) + L + 2 AST's*
3. *280,593 LBS (42,000 GAL) + L + UST*

} = *SPCC*

SECTION 304 CERCLA REPORT: ARROW GEAR COMPANY

ID	MSDS NO.	PRODUCT NAME	MAXIMUM WEIGHT	CHEMICAL NAME	%	CHEMICAL WEIGHT	CAS NUMBER	PHYSCIAL STATE	CONTAINER	CERCLA RQ	SPCC
501	173	STAINLESS STEEL	5,700.00	CHROMIUM	30	1,710.00	7440-47-3	S	RAW	5000	SPCC
533	183	ALL SANDVIK COROMANT CERMET GRADES	10.00	CHROMIUM	3	0.30	7440-47-3	S	RAW	5000	
				AGGREGATE WEIGHT FOR 304 CHEMICALS =		***1,755.38***					
304 CHEMICAL BY NAME											
172	48	DIAMOND OR CUBIC BORON NITRIDE GRINDING WHEELS	5,000.00	COBALT	60	3,000.00	7440-48-4	S	RAW		SPCC
492	172	ALUMINUM ALLOYS, ALUMINUM ALLOYS	7,200.00	COBALT	2	144.00	7440-48-4	S	RAW		SPCC
508	173	STAINLESS STEEL	5,700.00	COBALT	2	114.00	7440-48-4	S	RAW		SPCC
				AGGREGATE WEIGHT FOR 304 CHEMICALS =		***3,258.00***					
304 CHEMICAL BY NAME											
133	39	MOLYKOTE® 1000 PASTE	10.00	COPPER	7	0.70	7440-50-8	PST	TUBE	5000	
166	48	DIAMOND OR CUBIC BORON NITRIDE GRINDING WHEELS	5,000.00	COPPER	85	4,250.00	7440-50-8	S	RAW	5000	SPCC
237	69	COPPER BERYLLIUM WROUGHT ALLOYS	168.00	COPPER	92.8	155.90	7440-50-8	S	RAW	5000	
254	79	DEGUSSA 5600 FOIL (MB565)	10.00	COPPER	100	10.00	7440-50-8	S	RAW	5000	
309	101	SUNNEN HONING STONES	100.00	COPPER	5	5.00	7440-50-8	S	BOX	5000	
329	105	SILVER-COPPER-CADMIUM-ZINC BRAZING ALLOYS	10.00	COPPER	45	4.50	7440-50-8	S	RAW	5000	
483	171	COPPER BERYLLIUM WROUGHT ALLOY	275.00	COPPER	99	272.25	7440-50-8	S	RAW	5000	
489	172	ALUMINUM ALLOYS, ALUMINUM ALLOYS	7,200.00	COPPER	10	720.00	7440-50-8	S	RAW	5000	SPCC
503	173	STAINLESS STEEL	5,700.00	COPPER	6	342.00	7440-50-8	S	RAW	5000	SPCC
				AGGREGATE WEIGHT FOR 304 CHEMICALS =		***5,760.35***					

COPYRIGHT 2000, VANGUARD ENVIRONMENTAL, INC.

1. 4,409 LBS (660 GAL) + L + AST
2. 8,818 LBS (1,320 GAL) + L + 2 AST's
3. 280,593 LBS (42,000 GAL) + L + UST
} ***= SPCC***

SECTION 304 CERCLA REPORT: ARROW GEAR COMPANY

ID	MSDS NO.	PRODUCT NAME	MAXIMUM WEIGHT	CHEMICAL NAME	%	CHEMICAL WEIGHT	CAS NUMBER	PHYSCIAL STATE	CONTAINER	CERCLA RQ	SPCC
	304 CHEMICAL BY NAME										
97	28	BLASOCUT 2000 UNIVERSAL	8,150.58	CORROSION AND FUNGI INHIBITORS MIXTURE	1	81.51		L	STEEL DRUM		SPCC
				AGGREGATE WEIGHT FOR 304 CHEMICALS =		**81.51**					
	304 CHEMICAL BY NAME										
182	48	DIAMOND OR CUBIC BORON NITRIDE GRINDING WHEELS	5,000.00	CRYSTALLINE SILICA	1	50.00	14808-60-7	S	RAW		SPCC
				AGGREGATE WEIGHT FOR 304 CHEMICALS =		**50.00**					
	304 CHEMICAL BY NAME										
176	48	DIAMOND OR CUBIC BORON NITRIDE GRINDING WHEELS	5,000.00	DIAMOND	5	250.00	7782-40-3	S	RAW		SPCC
				AGGREGATE WEIGHT FOR 304 CHEMICALS =		**250.00**					
	304 CHEMICAL BY NAME										
522	179	RUSTAREST 53216	1,001.28	DIETHANOLAMINE	5	50.06	111-42-2	L	STEEL DRUM	100	
				AGGREGATE WEIGHT FOR 304 CHEMICALS =		**50.06**					
	304 CHEMICAL BY NAME										
222	61	HOUGHTO-QUENCH G	25,721.08	DISTILLATES HYDROTREATED LIGHT PARAFFIN	60	15,432.65	64742-55-8	L	STEEL DRUM		SPCC
				AGGREGATE WEIGHT FOR 304 CHEMICALS =		**15,432.65**					
	304 CHEMICAL BY NAME										
89	28	BLASOCUT 2000 UNIVERSAL	8,150.58	DISTILLATES, PETROLEUM, HYDROTREATED HEAVY NAPHTHENIC	65	5,297.87	64742-52-5	L	STEEL DRUM		SPCC
				AGGREGATE WEIGHT FOR 304 CHEMICALS =		**5,297.87**					
	304 CHEMICAL BY NAME										
285	95	PERKOTE 30-353-AG	6,985.61	DISTILLATES, PETROLEUM, HYDROTREATED LIGHT NAPHTHENIC	25	1,746.40	64742-53-6	L	AST		SPCC
				AGGREGATE WEIGHT FOR 304 CHEMICALS =		**1,746.40**					

COPYRIGHT 2000, VANGUARD ENVIRONMENTAL, INC.

1. 4,409 LBS (660 GAL) + L + AST
2. 8,818 LBS (1,320 GAL) + L + 2 AST's
3. 280,593 LBS (42,000 GAL) + L + UST

} - SPCC

SECTION 304 CERCLA REPORT: ARROW GEAR COMPANY

ID	MSDS NO.	PRODUCT NAME	MAXIMUM WEIGHT	CHEMICAL NAME	%	CHEMICAL WEIGHT	CAS NUMBER	PHYSCIAL STATE	CONTAINER	CERCLA RQ	SPCC
	304 CHEMICAL BY NAME										
190	49	YELLOW DXX-526, DLT, DXX-340	72.65	ETHYL ACETATE	5	3.63	141-78-6	L	BOTTLE	5000	
				AGGREGATE WEIGHT FOR 304 CHEMICALS =		***3.63***					
	304 CHEMICAL BY NAME										
334	106	73X WHITE MARKING INK	10.86	ETHYLENE GLYCOL	9	0.98	107-21-1	L	CAN	5000	
337	107	73X BLACK MARKING INK	8.35	ETHYLENE GLYCOL	13	1.09	107-21-1	L	CAN	5000	
				AGGREGATE WEIGHT FOR 304 CHEMICALS =		***2.06***					
	304 CHEMICAL BY NAME										
94	28	BLASOCUT 2000 UNIVERSAL	8,150.58	FATTY ACIDS, VEGETABLE-OIL	5	407.53	61788-66-7	L	STEEL DRUM		SPCC
				AGGREGATE WEIGHT FOR 304 CHEMICALS =		***407.53***					
	304 CHEMICAL BY NAME										
177	48	DIAMOND OR CUBIC BORON NITRIDE GRINDING WHEELS	5,000.00	FUSED SILICA	5	250.00	60676-86-0	S	RAW		SPCC
				AGGREGATE WEIGHT FOR 304 CHEMICALS =		***250.00***					
	304 CHEMICAL BY NAME										
174	48	DIAMOND OR CUBIC BORON NITRIDE GRINDING WHEELS	5,000.00	GRAPHITE	20	1,000.00	7782-42-5	S	RAW		SPCC
				AGGREGATE WEIGHT FOR 304 CHEMICALS =		***1,000.00***					
	304 CHEMICAL BY NAME										
526	180	POLYURETHANE CATALYST	8.85	HEXAMETHYLENE-1,6-DIISOCYANATE	10	0.89	822-06-0	L	CAN	100	
				AGGREGATE WEIGHT FOR 304 CHEMICALS =		***0.89***					
	304 CHEMICAL BY NAME										
224	61	HOUGHTO-QUENCH G	25,721.08	HYDROCARBON OILS	10	2,572.11	8020-83-5	L	STEEL DRUM		SPCC
				AGGREGATE WEIGHT FOR 304 CHEMICALS =		***2,572.11***					

COPYRIGHT 2000, VANGUARD ENVIRONMENTAL, INC.

1. 4,409 LBS (660 GAL) + L + AST
2. 8,818 LBS (1,320 GAL) + L + 2 AST's
3. 280,593 LBS (42,000 GAL) + L + UST
} *= SPCC*

SECTION 304 CERCLA REPORT: ARROW GEAR COMPANY

ID	MSDS NO.	PRODUCT NAME	MAXIMUM WEIGHT	CHEMICAL NAME	%	CHEMICAL WEIGHT	CAS NUMBER	PHYSCIAL STATE	CONTAINER	CERCLA RQ	SPCC
	304 CHEMICAL BY NAME										
288	97	PERLUBE RO-68	22,059.17	HYDROTREATED HEAVY PARAFFINIC DISTILLATE	100	22,059.17	64742-54-7	L	STEEL DRUM		SPCC
				AGGREGATE WEIGHT FOR 304 CHEMICALS =		**22,059.17**					
	304 CHEMICAL BY NAME										
180	48	DIAMOND OR CUBIC BORON NITRIDE GRINDING WHEELS	5,000.00	IRON	3	150.00	7439-89-6	S	RAW		SPCC
471	170	CARBON STEEL - HR & CR LEADED STEEL	10,600.00	IRON	99	10,494.00	7439-89-6	S	RAW		SPCC
493	172	ALUMINUM ALLOYS, ALUMINUM ALLOYS	7,200.00	IRON	2	144.00	7439-89-6	S	RAW		SPCC
500	173	STAINLESS STEEL	5,700.00	IRON	88	5,016.00	7439-89-6	S	RAW		SPCC
				AGGREGATE WEIGHT FOR 304 CHEMICALS =		**15,804.00**					
	304 CHEMICAL BY NAME										
319	102	MAYWOOD ACRYL LACQUER THINNER	136.96	ISOBUTYL ACETATE	6	8.22	110-19-0	L	STEEL DRUM	5000	
				AGGREGATE WEIGHT FOR 304 CHEMICALS =		**8.22**					
	304 CHEMICAL BY NAME										
347	110	AMS-3100~YELLOW ZINC CHROMATE PRIMER REV G	38.80	ISOBUTYL ALCOHOL	10	3.88	78-83-1	L	CAN	5000	
				AGGREGATE WEIGHT FOR 304 CHEMICALS =		**3.88**					
	304 CHEMICAL BY NAME										
381	126	MOBILMET ALPHA	14,447.23	LARD, OIL, ME ESTERS, SULFURIZED	15	2,167.08	68440-40-4	L	STEEL DRUM		SPCC
				AGGREGATE WEIGHT FOR 304 CHEMICALS =		**2,167.08**					
	304 CHEMICAL BY NAME										
192	49	YELLOW DXX-526, DLT, DXX-340	72.65	LEAD	5	3.63	7439-92-1	L	BOTTLE	10	
325	104	OSTALLOY 158	30.00	LEAD	27.3	8.19	7439-92-1	S	RAW	10	

COPYRIGHT 2000, VANGUARD ENVIRONMENTAL, INC.

1. 4,409 LBS (660 GAL) + L + AST
2. 8,818 LBS (1,320 GAL) + L + 2 AST's
3. 280,593 LBS (42,000 GAL) + L + UST

} = SPCC

SECTION 304 CERCLA REPORT: ARROW GEAR COMPANY

ID	MSDS NO.	PRODUCT NAME	MAXIMUM WEIGHT	CHEMICAL NAME	%	CHEMICAL WEIGHT	CAS NUMBER	PHYSCIAL STATE	CONTAINER	CERCLA RQ	SPCC
476	170	CARBON STEEL - HR & CR LEADED STEEL	10,600.00	LEAD	1	106.00	7439-92-1	S	RAW	10	SPCC
497	172	ALUMINUM ALLOYS, ALUMINUM ALLOYS	7,200.00	LEAD	1	72.00	7439-92-1	S	RAW	10	SPCC
			AGGREGATE WEIGHT FOR 304 CHEMICALS =			***189.82***					
	304 CHEMICAL BY NAME										
477	170	CARBON STEEL - HR & CR LEADED STEEL	10,600.00	LEAD CARBON MIXTURE	1	106.00		S	RAW		SPCC
			AGGREGATE WEIGHT FOR 304 CHEMICALS =			***106.00***					
	304 CHEMICAL BY NAME										
490	172	ALUMINUM ALLOYS, ALUMINUM ALLOYS	7,200.00	MAGNESIUM	10	720.00	7439-95-4	S	RAW		SPCC
			AGGREGATE WEIGHT FOR 304 CHEMICALS =			***720.00***					
	304 CHEMICAL BY NAME										
181	48	DIAMOND OR CUBIC BORON NITRIDE GRINDING WHEELS	5,000.00	MANGANESE	3	150.00	7439-96-5	S	RAW		SPCC
473	170	CARBON STEEL - HR & CR LEADED STEEL	10,600.00	MANGANESE	2	212.00	7439-96-5	S	RAW		SPCC
494	172	ALUMINUM ALLOYS, ALUMINUM ALLOYS	7,200.00	MANGANESE	2	144.00	7439-96-5	S	RAW		SPCC
504	173	STAINLESS STEEL	5,700.00	MANGANESE	6	342.00	7439-96-5	S	RAW		SPCC
			AGGREGATE WEIGHT FOR 304 CHEMICALS =			***848.00***					
	304 CHEMICAL BY NAME										
272	86	METHANOL	1,828.03	METHYL ALCOHOL	99.85	1,825.29	67-56-1	L	STEEL DRUM	5000	
316	102	MAYWOOD ACRYL LACQUER THINNER	136.96	METHYL ALCOHOL	21	28.76	67-56-1	L	STEEL DRUM	5000	
			AGGREGATE WEIGHT FOR 304 CHEMICALS =			***1,854.05***					
	304 CHEMICAL BY NAME										
230	65	MICCROSTOP	7.93	METHYL ETHYL KETONE	75	5.95	78-93-3	L	CAN	5000	

COPYRIGHT 2000, VANGUARD ENVIRONMENTAL, INC.

1. ***4,409 LBS (660 GAL) + L + AST***
2. ***8,818 LBS (1,320 GAL) + L + 2 AST's***
3. ***280,593 LBS (42,000 GAL) + L + UST***

} = *SPCC*

SECTION 304 CERCLA REPORT: ARROW GEAR COMPANY

ID	MSDS NO.	PRODUCT NAME	MAXIMUM WEIGHT	CHEMICAL NAME	%	CHEMICAL WEIGHT	CAS NUMBER	PHYSCIAL STATE	CONTAINER	CERCLA RQ	SPCC
317	102	MAYWOOD ACRYL LACQUER THINNER	136.96	METHYL ETHYL KETONE	9	12.33	78-93-3	L	STEEL DRUM	5000	
				AGGREGATE WEIGHT FOR 304 CHEMICALS =		***18.28***					
304 CHEMICAL BY NAME											
250	76	INSTAPAK® COMPONENT "A"	828.42	METHYLENEBIS(PHENYLISOCYANATE)	45	372.79	101-68-8	L	STEEL DRUM	5000	
				AGGREGATE WEIGHT FOR 304 CHEMICALS =		***372.79***					
304 CHEMICAL BY NAME											
183	48	DIAMOND OR CUBIC BORON NITRIDE GRINDING WHEELS	5,000.00	MOLYBDENUM	1	50.00	7439-98-7	S	RAW		SPCC
505	173	STAINLESS STEEL	5,700.00	MOLYBDENUM	6	342.00	7439-98-7	S	RAW		SPCC
				AGGREGATE WEIGHT FOR 304 CHEMICALS =		***392.00***					
304 CHEMICAL BY NAME											
12	7	NICKEL PLATED ABRASIVE PRODUCTS	10.00	NICKEL	100	10.00	7440-02-0	S	RAW	100	
14	9	SAF-T-EZE NICKEL PREMIUM ANTI-SEIZE	5.00	NICKEL	100	5.00	7440-02-0	GEL	CAN	100	
44	14	HIGH SPEED STEELS AND TUNGSTEN CARBIDES	100.00	NICKEL	91.9	91.90	7440-02-0	S	RAW	100	
146	40	CBN	10.00	NICKEL	0.35	0.04	7440-02-0	S	RAW	100	
168	48	DIAMOND OR CUBIC BORON NITRIDE GRINDING WHEELS	5,000.00	NICKEL	82	4,100.00	7440-02-0	S	RAW	100	SPCC
238	69	COPPER BERYLLIUM WROUGHT ALLOYS	168.00	NICKEL	22	36.96	7440-02-0	S	RAW	100	
485	171	COPPER BERYLLIUM WROUGHT ALLOY	275.00	NICKEL	2.2	6.05	7440-02-0	S	RAW	100	
499	172	ALUMINUM ALLOYS, ALUMINUM ALLOYS	7,200.00	NICKEL	0.5	36.00	7440-02-0	S	RAW	100	SPCC
502	173	STAINLESS STEEL	5,700.00	NICKEL	27	1,539.00	7440-02-0	S	RAW	100	SPCC
531	183	ALL SANDVIK COROMANT CERMET GRADES	10.00	NICKEL	15	1.50	7440-02-0	S	RAW	100	

COPYRIGHT 2000, VANGUARD ENVIRONMENTAL, INC.

1. 4,409 LBS (660 GAL) + L + AST
2. 8,818 LBS (1,320 GAL) + L + 2 AST's
3. 280,593 LBS (42,000 GAL) + L + UST

} = SPCC

SECTION 304 CERCLA REPORT: ARROW GEAR COMPANY

ID	MSDS NO.	PRODUCT NAME	MAXIMUM WEIGHT	CHEMICAL NAME	%	CHEMICAL WEIGHT	CAS NUMBER	PHYSCIAL STATE	CONTAINER	CERCLA RQ	SPCC
				AGGREGATE WEIGHT FOR 304 CHEMICALS =		*5,826.45*					
	304 CHEMICAL BY NAME										
478	170	CARBON STEEL - HR & CR LEADED STEEL	10,600.00	NIOBIUM	1	106.00	7440-03-1	S	RAW		SPCC
509	173	STAINLESS STEEL	5,700.00	NIOBIUM	2	114.00	7440-03-1	S	RAW		SPCC
				AGGREGATE WEIGHT FOR 304 CHEMICALS =		*220.00*					
	304 CHEMICAL BY NAME										
232	66	NITROGEN, REFRIGERATED LIQUID	24,301.41	NITROGEN	100	24,301.41	7727-37-9	L	AST		SPCC
510	173	STAINLESS STEEL	5,700.00	NITROGEN	2	114.00	7727-37-9	S	RAW		SPCC
				AGGREGATE WEIGHT FOR 304 CHEMICALS =		*24,415.41*					
	304 CHEMICAL BY NAME										
98	28	BLASOCUT 2000 UNIVERSAL	8,150.58	ODORANT AND DYE MIXTURE	0.1	8.15		L	STEEL DRUM		SPCC
				AGGREGATE WEIGHT FOR 304 CHEMICALS =		*8.15*					
	304 CHEMICAL BY NAME										
95	28	BLASOCUT 2000 UNIVERSAL	8,150.58	OILS, LARD	5	407.53	8016-28-2	L	STEEL DRUM		SPCC
				AGGREGATE WEIGHT FOR 304 CHEMICALS =		*407.53*					
	304 CHEMICAL BY NAME										
340	108	TURCO VITRO-KLENE	670.00	PENTASODIUM TRIPHOSPHATE	15	100.50	7758-29-4	SP	STEEL DRUM	5000	
				AGGREGATE WEIGHT FOR 304 CHEMICALS =		*100.50*					
	304 CHEMICAL BY NAME										
92	28	BLASOCUT 2000 UNIVERSAL	8,150.58	PETROLEUM SULFONATE	45	3,667.76	68608-26-4	L	STEEL DRUM		SPCC
				AGGREGATE WEIGHT FOR 304 CHEMICALS =		*3,667.76*					

COPYRIGHT 2000, VANGUARD ENVIRONMENTAL, INC.

1. 4,409 LBS (660 GAL) + L + AST
2. 8,818 LBS (1,320 GAL) + L + 2 AST's
3. 280,593 LBS (42,000 GAL) + L + UST
} *= SPCC*

SECTION 304 CERCLA REPORT: ARROW GEAR COMPANY

ID	MSDS NO.	PRODUCT NAME	MAXIMUM WEIGHT	CHEMICAL NAME	%	CHEMICAL WEIGHT	CAS NUMBER	PHYSCIAL STATE	CONTAINER	CERCLA RQ	SPCC
	304 CHEMICAL BY NAME										
178	48	DIAMOND OR CUBIC BORON NITRIDE GRINDING WHEELS	5,000.00	PHENOL, POLYMER WITH FORMALDEHYDE	5	250.00	9003-35-4	S	RAW		SPCC
				AGGREGATE WEIGHT FOR 304 CHEMICALS =		***250.00***					
	304 CHEMICAL BY NAME										
184	48	DIAMOND OR CUBIC BORON NITRIDE GRINDING WHEELS	5,000.00	PHOSPHORUS	1	50.00	7723-14-0	S	RAW	1	SPCC
479	170	CARBON STEEL - HR & CR LEADED STEEL	10,600.00	PHOSPHORUS	1	106.00	7723-14-0	S	RAW	1	SPCC
511	173	STAINLESS STEEL	5,700.00	PHOSPHORUS	2	114.00	7723-14-0	S	RAW	1	SPCC
				AGGREGATE WEIGHT FOR 304 CHEMICALS =		***270.00***					
	304 CHEMICAL BY NAME										
289	98	PERCHEM 1330	1,488.42	POTASSIUM HYDROXIDE	15	223.26	1310-58-3	L	STEEL DRUM	1000	
				AGGREGATE WEIGHT FOR 304 CHEMICALS =		***223.26***					
	304 CHEMICAL BY NAME										
231	65	MICCROSTOP	7.93	PROPYLENE OXIDE	7	0.56	75-56-9	L	CAN	100	
				AGGREGATE WEIGHT FOR 304 CHEMICALS =		***0.56***					
	304 CHEMICAL BY NAME										
380	126	MOBILMET ALPHA	14,447.23	SEVERELY SOLVENT REFINED LIGHT PARAFFINIC DISTILLATE	50	7,223.62	64741-89-5	L	STEEL DRUM		SPCC
439	156	MOBILMET UPSILON	14,196.70	SEVERELY SOLVENT REFINED LIGHT PARAFFINIC DISTILLATE	100	14,196.70	64741-89-5	L	STEEL DRUM		SPCC
				AGGREGATE WEIGHT FOR 304 CHEMICALS =		***21,420.32***					
	304 CHEMICAL BY NAME										
286	95	PERKOTE 30-353-AG	6,985.61	SEVERELY SOLVENT REFINED PETROLEUM DISTILLATES	15	1,047.84	64741-96-4	L	AST		SPCC
				AGGREGATE WEIGHT FOR 304 CHEMICALS =		***1,047.84***					

COPYRIGHT 2000, VANGUARD ENVIRONMENTAL, INC.

1. 4,409 LBS (660 GAL) + L + AST
2. 8,818 LBS (1,320 GAL) + L + 2 AST's
3. 280,593 LBS (42,000 GAL) + L + UST

} = SPCC

SECTION 304 CERCLA REPORT: ARROW GEAR COMPANY

ID	MSDS NO.	PRODUCT NAME	MAXIMUM WEIGHT	CHEMICAL NAME	%	CHEMICAL WEIGHT	CAS NUMBER	PHYSCIAL STATE	CONTAINER	CERCLA RQ	SPCC
				AGGREGATE WEIGHT FOR 304 CHEMICALS =		*290.10*					
	304 CHEMICAL BY NAME										
290	98	PERCHEM 1330	1,488.42	SODIUM PHOSPHATE, TRIBASIC	10	148.84	10101-89-0	L	STEEL DRUM	5000	
				AGGREGATE WEIGHT FOR 304 CHEMICALS =		*148.84*					
	304 CHEMICAL BY NAME										
223	61	HOUGHTO-QUENCH G	25,721.08	SOLVENT REFINED HEAVY PARAFFINIC DISTILLATES	30	7,716.32	64741-88-4	L	STEEL DRUM		SPCC
				AGGREGATE WEIGHT FOR 304 CHEMICALS =		*7,716.32*					
	304 CHEMICAL BY NAME										
96	28	BLASOCUT 2000 UNIVERSAL	8,150.58	STABALIZER MIXTURE	2	163.01		L	STEEL DRUM		SPCC
				AGGREGATE WEIGHT FOR 304 CHEMICALS =		*163.01*					
	304 CHEMICAL BY NAME										
481	170	CARBON STEEL - HR & CR LEADED STEEL	10,600.00	SULFUR	1	106.00	7704-34-9	S	RAW		SPCC
513	173	STAINLESS STEEL	5,700.00	SULFUR	2	114.00	7704-34-9	S	RAW		SPCC
				AGGREGATE WEIGHT FOR 304 CHEMICALS =		*220.00*					
	304 CHEMICAL BY NAME										
173	48	DIAMOND OR CUBIC BORON NITRIDE GRINDING WHEELS	5,000.00	TIN	25	1,250.00	7440-31-5	S	RAW		SPCC
496	172	ALUMINUM ALLOYS, ALUMINUM ALLOYS	7,200.00	TIN	2	144.00	7440-31-5	S	RAW		SPCC
514	173	STAINLESS STEEL	5,700.00	TIN	2	114.00	7440-31-5	S	RAW		SPCC
				AGGREGATE WEIGHT FOR 304 CHEMICALS =		*1,508.00*					
	304 CHEMICAL BY NAME										
506	173	STAINLESS STEEL	5,700.00	TITANIUM	6	342.00	7440-32-6	S	RAW		SPCC

COPYRIGHT 2000, VANGUARD ENVIRONMENTAL, INC.

1. 4,409 LBS (660 GAL) + L + AST
2. 8,818 LBS (1,320 GAL) + L + 2 AST's
3. 280,593 LBS (42,000 GAL) + L + UST
} *= SPCC*

SECTION 304 CERCLA REPORT: ARROW GEAR COMPANY

ID	MSDS NO.	PRODUCT NAME	MAXIMUM WEIGHT	CHEMICAL NAME	%	CHEMICAL WEIGHT	CAS NUMBER	PHYSCIAL STATE	CONTAINER	CERCLA RQ	SPCC
				AGGREGATE WEIGHT FOR 304 CHEMICALS =		342.00					
	304 CHEMICAL BY NAME										
195	49	YELLOW DXX-526, DLT, DXX-340	72.65	TOLUENE	5	3.63	108-88-3	L	BOTTLE	1000	
242	70	TOLUENE	43.09	TOLUENE	100	43.09	108-88-3	L	STEEL DRUM & GLASS BOTTLE	1000	
314	102	MAYWOOD ACRYL LACQUER THINNER	136.96	TOLUENE	25	34.24	108-88-3	L	STEEL DRUM	1000	
349	110	AMS-3100~YELLOW ZINC CHROMATE PRIMER REV G	38.80	TOLUENE	5	1.94	108-88-3	L	CAN	1000	
382	127	MOBIL VELOCITE OIL NO. 10	1,436.37	TOLUENE	0.01	0.14	108-88-3	L	STEEL DRUM	1000	
466	166	MOBIL MULTI-PURPOSE ATF	2,204.66	TOLUENE	0.09	1.98	108-88-3	L	STEEL DRUM	1000	
				AGGREGATE WEIGHT FOR 304 CHEMICALS =		85.03					
	304 CHEMICAL BY NAME										
170	48	DIAMOND OR CUBIC BORON NITRIDE GRINDING WHEELS	5,000.00	TUNGSTEN CARBIDE	75	3,750.00	12070-12-1	S	RAW		SPCC
				AGGREGATE WEIGHT FOR 304 CHEMICALS =		3,750.00					
	304 CHEMICAL BY NAME										
482	170	CARBON STEEL - HR & CR LEADED STEEL	10,600.00	VANADIUM	1	106.00	7440-62-2	S	RAW		SPCC
				AGGREGATE WEIGHT FOR 304 CHEMICALS =		106.00					
	304 CHEMICAL BY NAME										
49	14	HIGH SPEED STEELS AND TUNGSTEN CARBIDES	100.00	VANADIUM PENTOXIDE	6.5	6.50	1314-62-1	S	RAW	1000	
				AGGREGATE WEIGHT FOR 304 CHEMICALS =		6.50					
	304 CHEMICAL BY NAME										
63	18	28Y10LF ORANGE S.D. GLOSS EN	10.00	XYLENE	2	0.20	1330-20-7	L	AEROSOL CAN	100	
67	19	28E9 ANSI 49 MED LT GREY SD GL	50.00	XYLENE	3	1.50	1330-20-7	L	AEROSOL CAN	100	

COPYRIGHT 2000, VANGUARD ENVIRONMENTAL, INC.

1. 4,409 LBS (660 GAL) + L + AST
2. 8,818 LBS (1,320 GAL) + L + 2 AST's
3. 280,593 LBS (42,000 GAL) + L + UST

} - SPCC

SECTION 304 CERCLA REPORT: ARROW GEAR COMPANY

ID	MSDS NO.	PRODUCT NAME	MAXIMUM WEIGHT	CHEMICAL NAME	%	CHEMICAL WEIGHT	CAS NUMBER	PHYSCIAL STATE	CONTAINER	CERCLA RQ	SPCC
156	43	CONDURSAL 0090	20.00	XYLENE	25	5.00	1330-20-7	L	CAN	100	
158	44	CONDURSAL N523	20.00	XYLENE	100	20.00	1330-20-7	PST	CAN	100	
322	102	MAYWOOD ACRYL LACQUER THINNER	136.96	XYLENE	2	2.74	1330-20-7	L	STEEL DRUM	100	
350	110	AMS-3100~YELLOW ZINC CHROMATE PRIMER REV G	38.80	XYLENE	5	1.94	1330-20-7	L	CAN	100	
427	149	MOBILITH AW-2	100.00	XYLENE	0.13	0.13	1330-20-7	GEL	STEEL DRUM	100	
525	180	POLYURETHANE CATALYST	8.85	XYLENE	20	1.77	1330-20-7	L	CAN	100	
				AGGREGATE WEIGHT FOR 304 CHEMICALS =		***33.28***					
304 CHEMICAL BY NAME											
136	39	MOLYKOTE® 1000 PASTE	10.00	ZINC	4	0.40	7440-66-6	PST	TUBE	1000	
257	79	DEGUSSA 5600 FOIL (MB56[illegible]	10.00	ZINC	100	10.00	7440-66-6	S	RAW	1000	
330	105	SILVER-COPPER-CADMIUM-ZINC BRAZING ALLOYS	10.00	ZINC	30	3.00	7440-66-6	S	RAW	1000	
372	118	MOBIL ALMO 525	10.00	ZINC	0.09	0.01	7440-66-6	L	POLY JUG	1000	
379	125	MOBIL DTE 11M	400.05	ZINC	0.1	0.40	7440-66-6	L	STEEL DRUM	1000	
392	132	MOBIL DTE 26	2,297.17	ZINC	0.1	22.30	7440-66-6	L	STEEL DRUM	1000	SPCC
394	133	MOBIL DTE 25	7,390.64	ZINC	0.1	7.39	7440-66-6	L	STEEL DRUM	1000	SPCC
426	149	MOBILITH AW-2	100.00	ZINC	0.15	0.15	7440-66-6	GEL	STEEL DRUM	1000	
448	159	MOBILUX EP 023	75.33	ZINC	0.22	0.17	7440-66-6	GEL	POLY DRUM	1000	
491	172	ALUMINUM ALLOYS, ALUMINUM ALLOYS	200.00	ZINC	10	720.00	7440-66-6	S	RAW	1000	SPCC
520	177	MOBIL DTE 13M	146.48	ZINC	0.1	0.15	7440-66-6	L	STEEL DRUM	1000	

COPYRIGHT 2000, VANGUARD ENVIRONMENTAL, INC.

1. 4,409 LBS (660 GAL) + L + AST
2. 8,818 LBS (1,320 GAL) + L + 2 AST's
3. 280,593 LBS (42,000 GAL) + L + UST

} = SPCC

SECTION 304 CERCLA REPORT: ARROW GEAR COMPANY

ID	MSDS NO.	PRODUCT NAME	MAXIMUM WEIGHT	CHEMICAL NAME	%	CHEMICAL WEIGHT	CAS NUMBER	PHYSCIAL STATE	CONTAINER	CERCLA RQ	SPCC
			AGGREGATE WEIGHT FOR 304 CHEMICALS =			763.96					
	304 CHEMICAL BY NAME										
391	132	MOBIL DTE 26	22,297.17	ZINC DIALKYLDITHIOPHOSPHATE	0.67	149.39	68649-42-3	L	STEEL DRUM		SPCC
393	133	MOBIL DTE 25	7,390.64	ZINC DIALKYLDITHIOPHOSPHATE	0.67	49.52	68649-42-3	L	STEEL DRUM		SPCC
			AGGREGATE WEIGHT FOR 304 CHEMICALS =			198.91					

COPYRIGHT 2000, VANGUARD ENVIRONMENTAL, INC.

1. 4,409 LBS (660 GAL) + L + AST
2. 8,818 LBS (1,320 GAL) + L + 2 AST's
3. 280,593 LBS (42,000 GAL) + L + UST

} = SPCC

VANGUARD
ENVIRONMENTAL, INC.
ENVIRONMENTAL & SAFETY COMPLIANCE SPECIALISTS

Part 8

SARA 311-312 Report
Hazard Communication: Workplace Chemical List

Hundreds of Thousands of Chemicals to Report

Section 311 of SARA Title III requires that state and local agencies receive from your facility either your MSDS's or a Chemical Inventory List (CIL) representing each hazardous chemical present at your facility above the specified reporting thresholds. The experience of the past seven years has shown that agencies prefer to have the CIL to agency specifications rather than a stack of MSDS's. Federal regulations require that the CIL include the chemical or common name of each chemical as identified on each MSDS. When reporting mixtures, Section 311 gives the facility the option of reporting by listing reportable chemical mixtures or by listing only the reportable components of mixtures. Vanguard's approach is to list the chemical mixtures *along* with their hazardous components. Reportability of Section 302 EHS Chemicals is determined via an aggregate total, as required by the EPA, whereas non-EHS chemicals are triggered on a product by product threshold determination.

Under Section 312, we prepare Tier II's to reflect those chemicals or mixtures that are used, stored, processed, or manufactured which exceed the Federally-mandated threshold of 10,000 pounds.

Vanguard's Chemical Inventory Analysis continues to track every chemical in every product you use. Therefore, we can easily and quickly bring your facility into compliance with any new regulations imposed by Federal, state, or local agencies.

19-Jan-01 [redacted] **SARA 311 HAZCOM REPORT** Reporting Year: 2000

(Inclusive of 302 & 312 chemicals exceeding thresholds as regulated under their respective subsections)

SARA 311 HAZCOM REPORT: ARROW GEAR COMPANY

CHEM ID	MSDS NO.	MANUFACTURERS NAME	PRODUCT NAME	MAXIMUM WEIGHT	CHEMICAL NAME	%	CHEMICAL WEIGHT	CAS NUMBER	CARCINOGEN MUTAGEN TERATOGEN	NFPA 704/HMIS/ FPRACH/GLOES	CONTAINER	PHYSICAL STATE	AREA
166	48	NORTON COMPANY	DIAMOND OR CUBIC BORON NITRIDE	5,000.00	COPPER	85	4,250.00	7440-50-8		A@LES	RAW	S	D, I, & P
167	48	NORTON COMPANY	DIAMOND OR CUBIC BORON NITRIDE	5,000.00	SILVER	85	4,250.00	7440-22-4		A@LES	RAW	S	D, I, & P
168	48	NORTON COMPANY	DIAMOND OR CUBIC BORON NITRIDE	5,000.00	NICKEL	82	4,100.00	7440-02-0	SC	A@LES	RAW	S	D, I, & P
169	48	NORTON COMPANY	DIAMOND OR CUBIC BORON NITRIDE	5,000.00	ALUMINUM OXIDE	81	4,050.00	1344-28-1		A@LES	RAW	S	D, I, & P
170	48	NORTON COMPANY	DIAMOND OR CUBIC BORON NITRIDE	5,000.00	TUNGSTEN CARBIDE	75	3,750.00	12070-12-1		A@LES	RAW	S	D, I, & P
171	48	NORTON COMPANY	DIAMOND OR CUBIC BORON NITRIDE	5,000.00	SILICON CARBIDE	73	3,650.00	409-21-2		A@LES	RAW	S	D, I, & P
172	48	NORTON COMPANY	DIAMOND OR CUBIC BORON NITRIDE	5,000.00	COBALT	60	3,000.00	7440-48-4	C	A@LES	RAW	S	D, I, & P
173	48	NORTON COMPANY	DIAMOND OR CUBIC BORON NITRIDE	5,000.00	TIN	25	1,250.00	7440-31-5		A@LES	RAW	S	D, I, & P
174	48	NORTON COMPANY	DIAMOND OR CUBIC BORON NITRIDE	5,000.00	GRAPHITE	20	1,000.00	7782-42-5		A@LES	RAW	S	D, I, & P
175	48	NORTON COMPANY	DIAMOND OR CUBIC BORON NITRIDE	5,000.00	BORON NITRIDE	5	250.00	10043-11-5		A@LES	RAW	S	D, I, & P
176	48	NORTON COMPANY	DIAMOND OR CUBIC BORON NITRIDE	5,000.00	DIAMOND	5	250.00	7782-40-3		A@LES	RAW	S	D, I, & P
177	48	NORTON COMPANY	DIAMOND OR CUBIC BORON NITRIDE	5,000.00	FUSED SILICA	5	250.00	60676-86-0		A@LES	RAW	S	D, I, & P
178	48	NORTON COMPANY	DIAMOND OR CUBIC BORON NITRIDE	5,000.00	PHENOL, POLYMER WITH FORMALDEHYDE	5	250.00	9003-35-4		A@LES	RAW	S	D, I, & P
179	48	NORTON COMPANY	DIAMOND OR CUBIC BORON NITRIDE	5,000.00	SILICON	5	250.00	7440-21-3		A@LES	RAW	S	D, I, & P
180	48	NORTON COMPANY	DIAMOND OR CUBIC BORON NITRIDE	5,000.00	IRON	3	150.00	7439-89-6		A@LES	RAW	S	D, I, & P
181	48	NORTON COMPANY	DIAMOND OR CUBIC BORON NITRIDE	5,000.00	MANGANESE	3	150.00	7439-96-5		A@LES	RAW	S	D, I, & P
182	48	NORTON COMPANY	DIAMOND OR CUBIC BORON NITRIDE	5,000.00	CRYSTALLINE SILICA	1	50.00	14808-60-7	C	A@LES	RAW	S	D, I, & P

[redacted]

C= Carcinogen T= Teratogen M= Mutagen S+_= Suspect

F= Flammable P= Pressure R= Reactive A= Acute CH= Chronic

G= Gene L= Lung O= Organs E= Eyes S= Skin

S= Solid L= Liquid G= Gas SP= Solid Particle PST= Paste

SARA 311 HAZCOM REPORT - ARROW GEAR COMPANY

CHEM. ID	MFG. NO.	MANUFACTURER'S NAME	PRODUCT NAME	MAXIMUM WEIGHT	CHEMICAL NAME	%	CHEMICAL WEIGHT	CAS NUMBER	CARCINOGEN MUTAGEN TERATOGEN	NFPA 704/HMIS/ FPRACH/GLOES	CONTAINER	PHYSICAL STATE	AREA
183	48	NORTON COMPANY	DIAMOND OR CUBIC BORON NITRIDE	5,000.00	MOLYBDENUM	1	50.00	7439-98-7		A@LES	RAW	S	D, L & P
184	48	NORTON COMPANY	DIAMOND OR CUBIC BORON NITRIDE	5,000.00	PHOSPHORUS	1	50.00	7723-14-0		A@LES	RAW	S	D, L & P
222	61	HOUGHTON INTERNATIONAL, INC.	HOUGHTO-QUENCH G	25,721.08	DISTILLATES HYDROTREATED LIGHT	60	15,432.65	64742-55-8		1-1-0 A@LES	STEEL DRUM	L	G & J
223	61	HOUGHTON INTERNATIONAL, INC.	HOUGHTO-QUENCH G	25,721.08	SOLVENT REFINED HEAVY PARAFFINIC DISTILLATES	30	7,716.32	64741-88-4		1-1-0 A@LES	STEEL DRUM	L	G & J
224	61	HOUGHTON INTERNATIONAL, INC.	HOUGHTO-QUENCH G	25,721.08	HYDROCARBON OILS	10	2,572.11	8020-83-5		1-1-0 A@LES	STEEL DRUM	L	G & J
232	66	AGA GAS, INC.	NITROGEN, REFRIGERATED LIQUID	24,301.41	NITROGEN	100	24,301.41	7727-37-9		P/A@L	AST	L	I
288	97	PERKINS PRODUCTS, INC.	PERLUBE RO-68	22,059.17	HYDROTREATED HEAVY PARAFFINIC DISTILLATE	100	22,059.17	64742-54-7		1-1-0 A@LS	STEEL DRUM	L	I, J & O
380	126	MOBIL OIL CORPORATION	MOBILMET ALPHA	14,447.23	SEVERELY SOLVENT REFINED LIGHT PARAFFINIC	50	7,223.62	64741-89-5		0-1-0	STEEL DRUM	L	J
381	126	MOBIL OIL CORPORATION	MOBILMET ALPHA	14,447.23	LARD, OIL, ME ESTERS, SULFURIZED	15	2,167.08	68440-40-4		0-1-0	STEEL DRUM	L	J
437	155	MOBIL OIL CORPORATION	MOBILMET NU	14,764.57	CHLOROALKANES	1.9	280.53	61788-76-9		0-1-0	STEEL DRUM	L	J
438	155	MOBIL OIL CORPORATION	MOBILMET NU	14,764.57	CHLORINE	0.8	118.12	7782-50-5		0-1-0	STEEL DRUM	L	J
439	156	MOBIL OIL CORPORATION	MOBILMET UPSILON	14,196.70	SEVERELY SOLVENT REFINED LIGHT PARAFFINIC	100	14,196.70	64741-89-5		0-1-0 CH@S	STEEL DRUM	L	J
471	170	VARIOUS	CARBON STEEL - HR & CR LEADED STEEL	10,600.00	IRON	99	10,494.00	7439-89-6		A/CH@LES	RAW	S	F & J
472	170	VARIOUS	CARBON STEEL - HR & CR LEADED STEEL	10,600.00	CARBON	2	212.00	7440-44-0		A/CH@LES	RAW	S	F & J
473	170	VARIOUS	CARBON STEEL - HR & CR LEADED STEEL	10,600.00	MANGANESE	2	212.00	7439-96-5		A/CH@LES	RAW	S	F & J
474	170	VARIOUS	CARBON STEEL - HR & CR LEADED STEEL	10,600.00	ALUMINUM	1	106.00	7429-90-5		A/CH@LES	RAW	S	F & J
475	170	VARIOUS	CARBON STEEL - HR & CR LEADED STEEL	10,600.00	BISMUTH	1	106.00	7440-69-9		A/CH@LES	RAW	S	F & J
476	170	VARIOUS	CARBON STEEL - HR & CR LEADED STEEL	10,600.00	LEAD	1	106.00	7439-92-1	SC	A/CH@LES	RAW	S	F & J
477	170	VARIOUS	CARBON STEEL - HR & CR LEADED STEEL	10,600.00	LEAD CARBON MIXTURE	1	106.00			A/CH@LES	RAW	S	F & J
478	170	VARIOUS	CARBON STEEL - HR & CR LEADED STEEL	10,600.00	NIOBIUM	1	106.00	7440-03-1		A/CH@LES	RAW	S	F & J

HAZARD COMMUNICATION CHEMICAL INVENTORY LIST
COPYRIGHT 2000 VANGUARD ENVIRONMENTAL INC.
TULSA, OK

C= Carcinogen, T= Teratogen, M= Mutagen, S+_= Suspect
F= Flammable, P= Pressure, R= Reactive, A= Acute, CH= Chronic
G= Gene, L= Lung, O= Organs, E= Eyes, S= Skin
S= Solid, L= Liquid, G= Gas, SP= Solid Particle, PST= Paste

SARA 311/312 HAZCOM REPORT - ARROW GEAR COMPANY

CHEM ID	MSDS NO.	MANUFACTURERS NAME	PRODUCT NAME	MAXIMUM WEIGHT	CHEMICAL NAME	%	CHEMICAL WEIGHT	CAS NUMBER	CARCINOGEN MUTAGEN TERATOGEN	NFPA 704/HMIS/ FPRACH/GLOES	CONTAINER	PHYSICAL STATE	AREA
479	170	VARIOUS	CARBON STEEL - HR & CR LEADED STEEL	10,600.00	PHOSPHORUS	1	106.00	7723-14-0		A/CH@LES	RAW	S	F & J
480	170	VARIOUS	CARBON STEEL - HR & CR LEADED STEEL	10,600.00	SILICON	1	106.00	7440-21-3		A/CH@LES	RAW	S	F & J
481	170	VARIOUS	CARBON STEEL - HR & CR LEADED STEEL	10,600.00	SULFUR	1	106.00	7704-34-9		A/CH@LES	RAW	S	F & J
482	170	VARIOUS	CARBON STEEL - HR & CR LEADED STEEL	10,600.00	VANADIUM	1	106.00	7440-62-2		A/CH@LES	RAW	S	F & J
500	173	VARIOUS	STAINLESS STEEL	5,700.00	IRON	88	5,016.00	7439-89-6		A/CH@LES	RAW	S	F & J
501	173	VARIOUS	STAINLESS STEEL	5,700.00	CHROMIUM	30	1,710.00	7440-47-3	C	A/CH@LES	RAW	S	F & J
502	173	VARIOUS	STAINLESS STEEL	5,700.00	NICKEL	27	1,539.00	7440-02-0	SC	A/CH@LES	RAW	S	F & J
503	173	VARIOUS	STAINLESS STEEL	5,700.00	COPPER	6	342.00	7440-50-8		A/CH@LES	RAW	S	F & J
504	173	VARIOUS	STAINLESS STEEL	5,700.00	MANGANESE	6	342.00	7439-96-5		A/CH@LES	RAW	S	F & J
505	173	VARIOUS	STAINLESS STEEL	5,700.00	MOLYBDENUM	6	342.00	7439-98-7		A/CH@LES	RAW	S	F & J
506	173	VARIOUS	STAINLESS STEEL	5,700.00	TITANIUM	6	342.00	7440-32-6		A/CH@LES	RAW	S	F & J
507	173	VARIOUS	STAINLESS STEEL	5,700.00	CARBON	2	114.00	7440-44-0		A/CH@LES	RAW	S	F & J
508	173	VARIOUS	STAINLESS STEEL	5,700.00	COBALT	2	114.00	7440-48-4	C	A/CH@LES	RAW	S	F & J
509	173	VARIOUS	STAINLESS STEEL	5,700.00	NIOBIUM	2	114.00	7440-03-1		A/CH@LES	RAW	S	F & J
510	173	VARIOUS	STAINLESS STEEL	5,700.00	NITROGEN	2	114.00	7727-37-9		A/CH@LES	RAW	S	F & J
511	173	VARIOUS	STAINLESS STEEL	5,700.00	PHOSPHORUS	2	114.00	7723-14-0		A/CH@LES	RAW	S	F & J
512	173	VARIOUS	STAINLESS STEEL	5,700.00	SILICON	2	114.00	7440-21-3		A/CH@LES	RAW	S	F & J
513	173	VARIOUS	STAINLESS STEEL	5,700.00	SULFUR	2	114.00	7704-34-9		A/CH@LES	RAW	S	F & J
514	173	VARIOUS	STAINLESS STEEL	5,700.00	TIN	2	114.00	7440-31-5		A/CH@LES	RAW	S	F & J

TOTAL CUMULATIVE HAZARD WEIGHT = 149,484.70

HAZARD COMMUNICATION CHEMICAL INVENTORY LIST

COPYRIGHT 2000, VANGUARD ENVIRONMENTAL, INC.

TULSA, OK

C= Carcinogen
T= Teratogen
M= Mutagen
S+_= Suspect

F= Flammable
P= Pressure
R= Reactive
A= Acute
CH= Chronic

G= Gene
L= Lung
O= Organs
E= Eyes
S= Skin

S= Solid
L= Liquid
G= Gas
SP= Solid Particle
PST= Paste

SARA 311 HAZCOM REPORT: ARROW GEAR COMPANY

CHEM ID	MSDS NO.	MANUFACTURERS NAME	PRODUCT NAME	MAXIMUM WEIGHT	CHEMICAL NAME	%	CHEMICAL WEIGHT	CAS NUMBER	CARCINOGEN MUTAGEN TERATOGEN	NFPA 704/HMIS/ FPRACH/GLOES	CONTAINER	PHYSICAL STATE	AREA

HAZCOM COMMUNICATION CHEMICAL INVENTOR LIST
COPYRIGHT 2000 VANGUARD ENVIRONMENTAL INC.
TULSA OK

C= Carcinogen
T= Teratogen
M= Mutagen
S+_= Suspect

F= Flammable
P= Pressure
R= Reactive
A= Acute
CH= Chronic

G= Gene
L= Lung
O= Organs
E= Eyes
S= Skin

S= Solid
L= Liquid
G= Gas
SP= Solid Particle
PST= Paste

OSHA HAZARD COMMUNICATION / CHEMICAL INVENTORY LIST

29 CFR 1919.1200 (e)(1)(I), OSHA's Hazard Communication Standard, requires that employers have a list of hazardous chemicals known to be present in the workplace, and that the list be available to employees as a part of the facility's written HazCom Program. Vanguard's OSHA Hazard Communication/Chemical Inventory List has been developed specifically to fulfill these requirements.

This report summarizes the key data elements for each product in your chemical inventory. OSHA's Hazard Determination information is conveyed *via* Vanguard's FPRACH/GLOES system, whereby each chemical is classified according to the EPA's five hazard categories. Other hazard information such as carcinogenicity, mutagenicity, and teratogenicity are also provided for the entire inventory.

Although the Federal Community Right-To-Know Laws do not require the submission of an entire chemical inventory listing, it is sometimes required and/or requested at the local or state level. This OSHA Hazard Communication/Chemical Inventory List can also be used for such purposes, and proves to be most useful if accompanied with a facility layout (attached).

19-Jan-01

OSHA HAZCOM WORKPLACE CHEMICAL LIST

OSHA HAZCOM: ARROW GEAR COMPANY

CHEM ID	MSDS NO.	MANUFACTURER NAME	PRODUCT NAME	MAXIMUM WEIGHT	CHEMICAL NAME	%	CHEMICAL WEIGHT	CAS NUMBER	CARCINOGEN MUTAGEN TERATOGEN	NFPA 704/HMIS/ FPRACH/GLOES	CONTAINER	PHYSICAL STATE	AREA
1	1	ROYAL LUBRICANTS COMPANY, INC	AEROSHELL FLUID 5LA	17.16	DISTILLATES, PETROLEUM, HYDROTREATED LIGHT NAPHTHENIC	60	22.30	64742-53-6		1-1-0 A@LES	CAN	L	O
2	1	ROYAL LUBRICANTS COMPANY, INC	AEROSHELL FLUID 5LA	17.16	HYDROTREATED HEAVY PARAFFINIC DISTILLATE	60	22.30	64742-54-7		1-1-0 A@LES	CAN	L	O
3	1	ROYAL LUBRICANTS COMPANY, INC	AEROSHELL FLUID 5LA	17.16	SULFURIZED ISOBUTYLENE	5	1.86	68511-50-2		1-1-0 A@LES	CAN	L	O
4	1	ROYAL LUBRICANTS COMPANY, INC	AEROSHELL FLUID 5LA	17.16	ADDITIVES MIXTURE	2	0.74			1-1-0 A@LES	CAN	L	O
5	2	CALGON CORPORATION	SW-3	50.00	SODIUM HYDROXIDE	80	40.00	1310-73-2		R/A@LES	BOX	SP	C
6	3	T J MARTIN COMPANY	ROTARY CUTTING TOOLS	10.00	TUNGSTEN CARBIDE	97	9.70	12070-12-1		A/CH@LES	RAW	S	D
7	3	T J MARTIN COMPANY	ROTARY CUTTING TOOLS	10.00	COBALT	25	2.50	7440-48-4	C	A/CH@LES	RAW	S	D
8	3	T J MARTIN COMPANY	ROTARY CUTTING TOOLS	10.00	TANTALUM CARBIDE	12	1.20	12070-06-3		A/CH@LES	RAW	S	D
9	4	E I DUPONT DE NEMOURS & COMPANY, INC	DELRIN(R) ACETAL RESIN	100.00	RESIN MIXTURE	100	100.00			A@LES	RAW	SP	A, D, F & I
10	5	POCO GRAPHITE, INC	POCO GRAPHITE EDM-3	1.00	GRAPHITE	100	1.00	7782-42-5		A@LE	GLASS BOTTLE	S	F
11	5	POCO GRAPHITE, INC	POCO GRAPHITE EDM-3	1.00	CRYSTALLINE SILICA	1	0.01	14808-60-7	C	A@LE	GLASS BOTTLE	S	F
12	7	T J MARTIN COMPANY	NICKEL PLATED ABRASIVE PRODUCTS	10.00	NICKEL	100	10.00	7440-02-0	SC	3-0-1 A/CH@LES	RAW	S	D
13	9	SAF-T-EZE DIV., STL COMPOUND CORPORATION	SAF-T-EZE NICKEL PREMIUM ANTI-SEIZE	5.00	ALUMINUM	100	5.00	7429-90-5		A@ES	CAN	GEL	E & G
14	9	SAF-T-EZE DIV., STL COMPOUND CORPORATION	SAF-T-EZE NICKEL PREMIUM ANTI-SEIZE	5.00	NICKEL	100	5.00	7440-02-0	SC	A@ES	CAN	GEL	E & G
15	10	MANCHASTER TOOL COMPANY	MANCHASTER TOOL CARBIDE	10.00	TUNGSTEN CARBIDE	97.7	9.77	12070-12-1		A/CH@LES	RAW	S	D
16	10	MANCHASTER TOOL COMPANY	MANCHASTER TOOL CARBIDE	10.00	TANTALUM CARBIDE	56.4	5.64	12070-06-3		A/CH@LES	RAW	S	D
17	10	MANCHASTER TOOL COMPANY	MANCHASTER TOOL CARBIDE	10.00	COBALT	26	2.60	7440-48-4	C	A/CH@LES	RAW	S	D
18	10	MANCHASTER TOOL COMPANY	MANCHASTER TOOL CARBIDE	10.00	TANTALUM NIOBIUM CARBIDE MIXTURE	20	2.00			A/CH@LES	RAW	S	D

COPYRIGHT 2000, VANGUARD ENVIRONMENTAL, INC.
TULSA, OK

C= Carcinogen, T= Teratogen, M= Mutagen, S+__= Suspect
F= Flammable, P= Pressure, R= Reactive, A= Acute, CH= Chronic
G= Gene, L= Lung, O= Organs, E= Eyes, S= Skin
S= Solid, L= Liquid, G= Gas, SP= Solid Particle, PST= Paste

OSHA HAZCOM ARROW GEAR COMPANY

CHEM ID	MSDS NO.	MANUFACTURER NAME	PRODUCT NAME	MAXIMUM WEIGHT	CHEMICAL NAME	%	CHEMICAL WEIGHT	CAS NUMBER	CARCINOGEN MUTAGEN TERATOGEN	NFPA 704/HMIS/ FPRACH/GLOES	CONTAINER	PHYSICAL STATE	AREA
19	10	MANCHASTER TOOL COMPANY	MANCHASTER TOOL CARBIDE	10.00	TITANIUM CARBIDE	20	2.00	12070-08-5		A/CH@LES	RAW	S	D
20	10	MANCHASTER TOOL COMPANY	MANCHASTER TOOL CARBIDE	10.00	NIOBIUM CARBIDE	15	1.50	12011-99-3		A/CH@LES	RAW	S	D
21	10	MANCHASTER TOOL COMPANY	MANCHASTER TOOL CARBIDE	10.00	HAFNIUM CARBIDE	6	0.60	12069-85-1		A/CH@LES	RAW	S	D
22	10	MANCHASTER TOOL COMPANY	MANCHASTER TOOL CARBIDE	10.00	CHROMIUM	5	0.50	7440-47-3	C	A/CH@LES	RAW	S	D
23	10	MANCHASTER TOOL COMPANY	MANCHASTER TOOL CARBIDE	10.00	CHROMIUM CARBIDE	5	0.50	12012-35-0	C	A/CH@LES	RAW	S	D
24	10	MANCHASTER TOOL COMPANY	MANCHASTER TOOL CARBIDE	10.00	MOLYBDENUM	5	0.50	7439-98-7		A/CH@LES	RAW	S	D
25	10	MANCHASTER TOOL COMPANY	MANCHASTER TOOL CARBIDE	10.00	MOLYBDENUM CARBIDE (MOC)	5	0.50	12011-97-1		A/CH@LES	RAW	S	D
26	11	NORTON COMPANY	ARROWBLAST, TBS	100.00	ALUMINUM OXIDE	90	90.00	1344-28-1		0-0-0 A@LES	RAW	SP	D
27	11	NORTON COMPANY	ARROWBLAST, TBS	100.00	SILICON CARBIDE	5	5.00	409-21-2		0-0-0 A@LES	RAW	SP	D
28	11	NORTON COMPANY	ARROWBLAST, TBS	100.00	VITREOUS CERAMIC MIXTURE	5	5.00			0-0-0 A@LES	RAW	SP	D
29	11	NORTON COMPANY	ARROWBLAST, TBS	100.00	CRYSTALLINE SILICA	1	1.00	14808-60-7	C	0-0-0 A@LES	RAW	SP	D
30	11.1	NORTON COMPANY	CRYSTOLON, SILICON CARBIDE	1,000.00	SILICON CARBIDE	98	980.00	409-21-2		0-0-0 A@LES	RAW	SP	D
31	11.1	NORTON COMPANY	CRYSTOLON, SILICON CARBIDE	1,000.00	CRYSTALLINE SILICA	1	10.00	14808-60-7	C	0-0-0 A@LES	RAW	SP	D
32	11.2	NORTON COMPANY	MICROGRADED ALUNDUM	100.00	ALUMINUM OXIDE	96.3	96.30	1344-28-1		0-0-0 A@LES	RAW	SP	D
33	11.2	NORTON COMPANY	MICROGRADED ALUNDUM	100.00	TITANIUM DIOXIDE	2.8	2.80	13463-67-7	C	0-0-0 A@LES	RAW	SP	D
34	11.2	NORTON COMPANY	MICROGRADED ALUNDUM	100.00	IMPURITIES MIXTURE	1.5	1.50			0-0-0 A@LES	RAW	SP	D
35	12	DETREX CORPORATION	WHITE GEAR MARKING COMPOUND	10.00	CALCIUM	50	5.00	7440-70-2		A@E	TUBE	PST	I
36	12	DETREX CORPORATION	WHITE GEAR MARKING COMPOUND	10.00	TITANIUM DIOXIDE	45	4.50	13463-67-7	C	A@E	TUBE	PST	I
37	12	DETREX CORPORATION	WHITE GEAR MARKING COMPOUND	10.00	NONIONIC SURFACTANT	5	0.50	68154-97-2		A@E	TUBE	PST	I
38	13	TEXACO LUBRICANTS COMPANY	00482 TRANSULTEX A	4,087.36	DISTILLATES, PETROLEUM, HYDROTREATED LIGHT NAPHTHENIC	94.66	3,869.09	64742-53-6		0-1-0 A@LES	STEEL DRUM	L	I & K

COPYRIGHT 2000 VANGUARD ENVIRONMENTAL INC.

C= Carcinogen
T= Teratogen
M= Mutagen
S+__= Suspect

F= Flammable
P= Pressure
R= Reactive
A= Acute
CH= Chronic

G= Gene
L= Lung
O= Organs
E= Eyes
S= Skin

S= Solid
L= Liquid
G= Gas
SP= Solid Particle
PST= Paste

OSHA HAZCOM: ARROW GEAR COMPANY

CHEM ID	MSDS NO.	MANUFACTURER NAME	PRODUCT NAME	MAXIMUM WEIGHT	CHEMICAL NAME	%	CHEMICAL WEIGHT	CAS NUMBER	CARCINOGEN MUTAGEN TERATOGEN	NFPA 704/HMIS/ FPRACI/GLOES	CONTAINER	PHYSICAL STATE	AREA
39	13	TEXACO LUBRICANTS COMPANY	00482 TRANSULTEX A	4,087.36	OILS, LARD	10.99	449.20	8016-28-2		0-1-0 A@LES	STEEL DRUM	L	J & K
40	13	TEXACO LUBRICANTS COMPANY	00482 TRANSULTEX A	4,087.36	OLEFIN MIXTURE	10.99	449.20			0-1-0 A@LES	STEEL DRUM	L	J & K
41	13	TEXACO LUBRICANTS COMPANY	00482 TRANSULTEX A	4,087.36	CHLORINATED ALKENE POLYMER	2.99	122.21	68410-99-1		0-1-0 A@LES	STEEL DRUM	L	J & K
42	14	FELLOWS CORPORATION	HIGH SPEED STEELS AND TUNGSTEN CARBIDES	100.00	COBALT	97	97.00	7440-48-4	C	A/CH@LES	RAW	S	L & M
43	14	FELLOWS CORPORATION	HIGH SPEED STEELS AND TUNGSTEN CARBIDES	100.00	IRON OXIDE	91.9	91.90	1309-37-1		A/CH@LES	RAW	S	L & M
44	14	FELLOWS CORPORATION	HIGH SPEED STEELS AND TUNGSTEN CARBIDES	100.00	NICKEL	91.9	91.90	7440-02-0	SC	A/CH@LES	RAW	S	L & M
45	14	FELLOWS CORPORATION	HIGH SPEED STEELS AND TUNGSTEN CARBIDES	100.00	TITANIUM DIOXIDE	91.9	91.90	13463-67-7	C	A/CH@LES	RAW	S	L & M
46	14	FELLOWS CORPORATION	HIGH SPEED STEELS AND TUNGSTEN CARBIDES	100.00	TANTALUM	50	50.00	7440-25-7		A/CH@LES	RAW	S	L & M
47	14	FELLOWS CORPORATION	HIGH SPEED STEELS AND TUNGSTEN CARBIDES	100.00	TUNGSTEN	30	30.00	7440-33-7		A/CH@LES	RAW	S	L & M
48	14	FELLOWS CORPORATION	HIGH SPEED STEELS AND TUNGSTEN CARBIDES	100.00	MOLYBDENUM	10.5	10.50	7439-98-7		A/CH@LES	RAW	S	L & M
49	14	FELLOWS CORPORATION	HIGH SPEED STEELS AND TUNGSTEN CARBIDES	100.00	VANADIUM PENTOXIDE	6.5	6.50	1314-62-1		A/CH@LES	RAW	S	L & M
50	14	FELLOWS CORPORATION	HIGH SPEED STEELS AND TUNGSTEN CARBIDES	100.00	CHROMIUM CARBIDE	5.1	5.10	12012-35-0	C	A/CH@LES	RAW	S	L & M
51	14	FELLOWS CORPORATION	HIGH SPEED STEELS AND TUNGSTEN CARBIDES	100.00	CHROMIUM	4.25	4.25	7440-47-3	C	A/CH@LES	RAW	S	L & M
52	14	FELLOWS CORPORATION	HIGH SPEED STEELS AND TUNGSTEN CARBIDES	100.00	CARBON BLACK	2.3	2.30	1333-86-4	C	A/CH@LES	RAW	S	L & M
53	14	FELLOWS CORPORATION	HIGH SPEED STEELS AND TUNGSTEN CARBIDES	100.00	MANGANESE	0.8	0.80	7439-96-5		A/CH@LES	RAW	S	L & M
54	14	FELLOWS CORPORATION	HIGH SPEED STEELS AND TUNGSTEN CARBIDES	100.00	SILICON	0.4	0.40	7440-21-3		A/CH@LES	RAW	S	L & M
55	15	KOEBEL METALLURGICAL SERVICES, INC	KOEBEL SUPER CATALYST	500.00	ALUMINA	95	475.00	1344-72-1		A@LES	RAW	S	G
56	15	KOEBEL METALLURGICAL SERVICES, INC	KOEBEL SUPER CATALYST	500.00	NICKEL OXIDE	10	50.00	1313-99-1	SC	A@LES	RAW	S	G
57	16	CHAS F L'HOMMEDIEU & SONS COMPANY	LUMP PUMIC STONE	100.00	NATURAL MINERAL AGGREGATE MIXTURE	100	100.00				BOX	S	B
58	17	DOW CORNING CORPORATION	SILASTIC® 732 RTV SEALANT - CLEAR	10.00	ACETOXYSILANE	5	0.50	6876-41-1		1-1-1 A@LES	TUBE	PST	I

COPYRIGHT 2000, VANGUARD ENVIRONMENTAL, INC
TULSA, OK

C= Carcinogen
T= Teratogen
M= Mutagen
S+__= Suspect

F= Flammable
P= Pressure
R= Reactive
A= Acute
CH= Chronic

G= Gene
L= Lung
O= Organs
E= Eyes
S= Skin

S= Solid
L= Liquid
G= Gas
SP= Solid Particle
PST= Paste

OSHA HAZCOM: ARROW GEAR COMPANY

CHEM ID	MSDS NO.	MANUFACTURER NAME	PRODUCT NAME	MAXIMUM WEIGHT	CHEMICAL NAME	%	CHEMICAL WEIGHT	CAS NUMBER	CARCINOGEN MUTAGEN TERATOGEN	NFPA 704/HMIS/ FPRACH/GLOES	CONTAINER	PHYSICAL STATE	AREA
59	18	CARBIT PAINT COMPANY	28Y10LF ORANGE S D GLOSS EN	10.00	LIGHT ALIPHATIC SOLVENT NAPHTHA	40	4.00	64742-89-8		2-3-0 F/P/A/CH@LOES	AEROSOL CAN	L	C, F & N
60	18	CARBIT PAINT COMPANY	28Y10LF ORANGE S D GLOSS EN	10.00	STODDARD SOLVENT	10	1.00	8052-41-3		2-3-0 F/P/A/CH@LOES	AEROSOL CAN	L	C, F & N
61	18	CARBIT PAINT COMPANY	28Y10LF ORANGE S D GLOSS EN	10.00	2-NAPHTHALENOL, 1-[(2,4-DINITROPHENYL)AZO]-	5	0.50	3468-63-1		2-3-0 F/P/A/CH@LOES	AEROSOL CAN	L	C, F & N
62	18	CARBIT PAINT COMPANY	28Y10LF ORANGE S D GLOSS EN	10.00	BUTANAMIDE, 2,2'-[(3,3'-DICHLORO[1,1'-BIPHENYL]-4,4'-DIYL)BIS(AZO)]BIS[N-(2,4-	5	0.50	5102-83-0		2-3-0 F/P/A/CH@LOES	AEROSOL CAN	L	C, F & N
63	18	CARBIT PAINT COMPANY	28Y10LF ORANGE S D GLOSS EN	10.00	XYLENE	2	0.20	1330-20-7		2-3-0 F/P/A/CH@LOES	AEROSOL CAN	L	C, F & N
64	18	CARBIT PAINT COMPANY	28Y10LF ORANGE S D GLOSS EN	10.00	2-BUTANONE OXIME	0.13	0.01	96-29-7		2-3-0 F/P/A/CH@LOES	AEROSOL CAN	L	C, F & N
65	19	CARBIT PAINT COMPANY	28E9 ANSI 49 MED LT GREY SD GL	50.00	LIGHT ALIPHATIC SOLVENT NAPHTHA	40	20.00	64742-89-8		2-3-0 F/P/A/CH@LOES	AEROSOL CAN	L	C, F & N
66	19	CARBIT PAINT COMPANY	28E9 ANSI 49 MED LT GREY SD GL	50.00	STODDARD SOLVENT	5	2.50	8052-41-3		2-3-0 F/P/A/CH@LOES	AEROSOL CAN	L	C, F & N
67	19	CARBIT PAINT COMPANY	28E9 ANSI 49 MED LT GREY SD GL	50.00	XYLENE	3	1.50	1330-20-7		2-3-0 F/P/A/CH@LOES	AEROSOL CAN	L	C, F & N
68	19	CARBIT PAINT COMPANY	28E9 ANSI 49 MED LT GREY SD GL	50.00	2-BUTANONE OXIME	0.17	0.09	96-29-7		2-3-0 F/P/A/CH@LOES	AEROSOL CAN	L	C, F & N
69	20	AMOCO OIL COMPANY	RYKON PREMIUM GREASE NO 2	50.00	HYDROTREATED HEAVY PARAFFINIC DISTILLATE	100	50.00	64742-54-7		0-1-0	STEEL DRUM	GEL	E
70	20	AMOCO OIL COMPANY	RYKON PREMIUM GREASE NO 2	50.00	SOLVENT REFINED HEAVY PARAFFINIC DISTILLATES	100	50.00	64741-88-4		0-1-0	STEEL DRUM	GEL	E
71	21	PETROLANE	PETROLANE PROPANE	750.00	PROPANE	97	727.50	74-98-6		1-4-0 F/P/A@LES	STEEL CYLINDER	G	E, G & O
72	21	PETROLANE	PETROLANE PROPANE	750.00	ETHANE	6	45.00	74-84-0		1-4-0 F/P/A@LES	STEEL CYLINDER	G	E, G & O
73	21	PETROLANE	PETROLANE PROPANE	750.00	PROPYLENE	5	37.50	115-07-1		1-4-0 F/P/A@LES	STEEL CYLINDER	G	E, G & O
74	21	PETROLANE	PETROLANE PROPANE	750.00	BUTANE	2.5	18.75	106-97-8		1-4-0 F/P/A@LES	STEEL CYLINDER	G	E, G & O
75	22	KENNMETAL, INC	TUNGSTEN CARBIDE WITH COBALT BINDER	100.00	TUNGSTEN CARBIDE	97.7	97.70	12070-12-1		2-3-0 F/A/CH@LES	RAW	S	D
76	22	KENNMETAL, INC	TUNGSTEN CARBIDE WITH COBALT BINDER	100.00	COBALT	25	25.00	7440-48-4	C	2-3-0 F/A/CH@LES	RAW	S	D
77	22	KENNMETAL, INC	TUNGSTEN CARBIDE WITH COBALT BINDER	100.00	TANTALUM CARBIDE	15	15.00	12070-06-3		2-3-0 F/A/CH@LES	RAW	S	D
78	22	KENNMETAL, INC	TUNGSTEN CARBIDE WITH COBALT BINDER	100.00	TITANIUM CARBIDE	15	15.00	12070-08-5		2-3-0 F/A/CH@LES	RAW	S	D

COPYRIGHT 2000, VANGUARD ENVIRONMENTAL INC.
TULSA, OK

C= Carcinogen
T= Teratogen
M= Mutagen
S+__= Suspect

F= Flammable
P= Pressure
R= Reactive
A= Acute
CH= Chronic

G= Gene
L= Lung
O= Organs
E= Eyes
S= Skin

S= Solid
L= Liquid
G= Gas
SP= Solid Particle
PST= Paste

OSHA HAZCOM: ARROW GEAR COMPANY

CHEM ID	MSDS NO.	MANUFACTURER NAME	PRODUCT NAME	MAXIMUM WEIGHT	CHEMICAL NAME	%	CHEMICAL WEIGHT	CAS NUMBER	CARCINOGEN MUTAGEN TERATOGEN	NFPA 704/HMIS/ FPRACH/GLOES	CONTAINER	PHYSICAL STATE	AREA
79	22	KENNMETAL, INC	TUNGSTEN CARBIDE WITH COBALT BINDER	100.00	NIOBIUM CARBIDE	5	5.00	12069-94-2		2-3-0 F/A/CH@LES	RAW	S	D
80	24	KENNMETAL, INC	K313, K714, KC732, KS1, KZ313, KZ714, SP313, SP939	150.00	TUNGSTEN CARBIDE	95.9	143.85	12070-12-1		1-3-0 F/A/CH@LES	RAW	SP	D
81	24	KENNMETAL, INC	K313, K714, KC732, KS1, KZ313, KZ714, SP313, SP939	150.00	COBALT	10	15.00	7440-48-4	C	1-3-0 F/A/CH@LES	RAW	SP	D
82	24	KENNMETAL, INC	K313, K714, KC732, KS1, KZ313, KZ714, SP313, SP939	150.00	CHROMIUM CARBIDE	7	10.50	12012-35-0	C	1-3-0 F/A/CH@LES	RAW	SP	D
83	24	KENNMETAL, INC	K313, K714, KC732, KS1, KZ313, KZ714, SP313, SP939	150.00	NIOBIUM CARBIDE	5	7.50	12069-94-2		1-3-0 F/A/CH@LES	RAW	SP	D
84	24	KENNMETAL, INC	K313, K714, KC732, KS1, KZ313, KZ714, SP313, SP939	150.00	TANTALUM CARBIDE	5	7.50	12070-06-3		1-3-0 F/A/CH@LES	RAW	SP	D
85	24	KENNMETAL, INC	K313, K714, KC732, KS1, KZ313, KZ714, SP313, SP939	150.00	TITANIUM CARBIDE	5	7.50	12070-08-5		1-3-0 F/A/CH@LES	RAW	SP	D
86	25	KENNMETAL, INC	KYON 2000, KYON 2100, KYON 3000, KYON 3400, KENNMETAL SAILON	50.00	METALLIC OXYNITRIDE MIXTURE	100	50.00			A@E	RAW	SP	D
87	26	KENNMETAL, INC	K090	50.00	ALUMINUM OXIDE	95	47.50	1344-28-1		A/CH@LES	RAW	SP	D
88	26	KENNMETAL, INC	K090	50.00	TITANIUM CARBIDE	40	20.00	12070-08-5		A/CH@LES	RAW	SP	D
89	28	BLASER SWISSLUBE, INC	BLASOCUT 2000 UNIVERSAL	8,150.58	DISTILLATES, PETROLEUM, HYDROTREATED HEAVY NAPHTHENIC	65	5,297.87	64742-52-5		1-1-0	STEEL DRUM	L	PLANT WIDE
90	28	BLASER SWISSLUBE, INC	BLASOCUT 2000 UNIVERSAL	8,150.58	ANIONIC EMULSIFIERS	45	3,667.76	61790-44-1		1-1-0	STEEL DRUM	L	PLANT WIDE
91	28	BLASER SWISSLUBE, INC	BLASOCUT 2000 UNIVERSAL	8,150.58	CASTOR OIL, ETHOXYLATED	45	3,667.76	61791-12-6		1-1-0	STEEL DRUM	L	PLANT WIDE
92	28	BLASER SWISSLUBE, INC	BLASOCUT 2000 UNIVERSAL	8,150.58	PETROLEUM SULFONATE	45	3,667.76	68608-26-4		1-1-0	STEEL DRUM	L	PLANT WIDE
93	28	BLASER SWISSLUBE, INC	BLASOCUT 2000 UNIVERSAL	8,150.58	CHLOROALKANES	15	1,222.59	61788-76-9		1-1-0	STEEL DRUM	L	PLANT WIDE
94	28	BLASER SWISSLUBE, INC	BLASOCUT 2000 UNIVERSAL	8,150.58	FATTY ACIDS, VEGETABLE-OIL	5	407.53	61788-66-7		1-1-0	STEEL DRUM	L	PLANT WIDE
95	28	BLASER SWISSLUBE, INC	BLASOCUT 2000 UNIVERSAL	8,150.58	OILS, LARD	5	407.53	8016-28-2		1-1-0	STEEL DRUM	L	PLANT WIDE
96	28	BLASER SWISSLUBE, INC	BLASOCUT 2000 UNIVERSAL	8,150.58	STABALIZER MIXTURE	2	163.01			1-1-0	STEEL DRUM	L	PLANT WIDE
97	28	BLASER SWISSLUBE, INC	BLASOCUT 2000 UNIVERSAL	8,150.58	CORROSION AND FUNGI INHIBITORS MIXTURE	1	81.51			1-1-0	STEEL DRUM	L	PLANT WIDE
98	28	BLASER SWISSLUBE, INC	BLASOCUT 2000 UNIVERSAL	8,150.58	ODORANT AND DYE MIXTURE	0.1	8.15			1-1-0	STEEL DRUM	L	PLANT WIDE

OSHA HAZARD COMMUNICATION CHEMICAL INVENTORY LIST,
COPYRIGHT 2000, VANGUARD ENVIRONMENTAL, INC
TULSA, OK.

C= Carcinogen
T= Teratogen
M= Mutagen
S+__= Suspect

F= Flammable
P= Pressure
R= Reactive
A= Acute
CH= Chronic

G= Gene
L= Lung
O= Organs
E= Eyes
S= Skin

S= Solid
L= Liquid
G= Gas
SP= Solid Particle
PST= Paste

OSHA/HAZCOM: ARROW GEAR COMPANY

CHEM ID	MSDS NO.	MANUFACTURER NAME	PRODUCT NAME	MAXIMUM WEIGHT	CHEMICAL NAME	%	CHEMICAL WEIGHT	CAS NUMBER	CARCINOGEN MUTAGEN TERATOGEN	NFPA 704/HMIS/ FPRACH/GLOES	CONTAINER	PHYSICAL STATE	AREA
99	29	BLASER SWISSLUBE, INC	BLASOCUT GRINDEX	439.55	HYDROTREATED HEAVY NAPHTHENIC OIL	70	307.69	61742-52-6		0-1-0	STEEL DRUM	L	F & P
100	29	BLASER SWISSLUBE, INC	BLASOCUT GRINDEX	439.55	ANIONIC EMULSIFIERS	40	175.82	61790-44-1		0-1-0	STEEL DRUM	L	F & P
101	29	BLASER SWISSLUBE, INC	BLASOCUT GRINDEX	439.55	CASTOR OIL, ETHOXYLATED	40	175.82	61791-12-6		0-1-0	STEEL DRUM	L	F & P
102	29	BLASER SWISSLUBE, INC	BLASOCUT GRINDEX	439.55	PETROLEUM SULFONATE	40	175.82	68608-26-4		0-1-0	STEEL DRUM	L	F & P
103	29	BLASER SWISSLUBE, INC	BLASOCUT GRINDEX	439.55	FATTY ACIDS, VEGETABLE-OIL	7	30.77	61788-66-7		0-1-0	STEEL DRUM	L	F & P
104	29	BLASER SWISSLUBE, INC	BLASOCUT GRINDEX	439.55	STABALIZER MIXTURE	2	8.79			0-1-0	STEEL DRUM	L	F & P
105	29	BLASER SWISSLUBE, INC	BLASOCUT GRINDEX	439.55	CORROSION AND FUNGI INHIBITORS MIXTURE	1	4.40			0-1-0	STEEL DRUM	L	F & P
106	29	BLASER SWISSLUBE, INC	BLASOCUT GRINDEX	439.55	ODORANT AND DYE MIXTURE	0.1	0.44			0-1-0	STEEL DRUM	L	F & P
107	32	SANDVIK COROMANT COMPANY	ALL SANDVIK COROMANT CEMENTED TUNGSTEN CARBIDE GRADES	10.00	TUNGSTEN CARBIDE	94	9.40	12070-12-1		A/CH@LES	RAW	S	D
108	32	SANDVIK COROMANT COMPANY	ALL SANDVIK COROMANT CEMENTED TUNGSTEN CARBIDE GRADES	10.00	TITANIUM DIOXIDE	23	2.30	13463-67-7	C	A/CH@LES	RAW	S	D
109	32	SANDVIK COROMANT COMPANY	ALL SANDVIK COROMANT CEMENTED TUNGSTEN CARBIDE GRADES	10.00	COBALT	16	1.60	7440-48-4	C	A/CH@LES	RAW	S	D
110	32	SANDVIK COROMANT COMPANY	ALL SANDVIK COROMANT CEMENTED TUNGSTEN CARBIDE GRADES	10.00	TANTALUM CARBIDE	15	1.50	12070-06-3		A/CH@LES	RAW	S	D
111	32	SANDVIK COROMANT COMPANY	ALL SANDVIK COROMANT CEMENTED TUNGSTEN CARBIDE GRADES	10.00	CHROMIUM	3	0.30	7440-47-3	C	A/CH@LES	RAW	S	D
112	32	SANDVIK COROMANT COMPANY	ALL SANDVIK COROMANT CEMENTED TUNGSTEN CARBIDE GRADES	10.00	CHROMIUM CARBIDE	3	0.30	12012-35-0	C	A/CH@LES	RAW	S	D
113	32	SANDVIK COROMANT COMPANY	ALL SANDVIK COROMANT CEMENTED TUNGSTEN CARBIDE GRADES	10.00	ALUMINUM OXIDE	2	0.20	1344-28-1		A/CH@LES	RAW	S	D
114	32	SANDVIK COROMANT COMPANY	ALL SANDVIK COROMANT CEMENTED TUNGSTEN CARBIDE GRADES	10.00	BORON OXIDE	2	0.20	1303-86-2		A/CH@LES	RAW	S	D
115	32	SANDVIK COROMANT COMPANY	ALL SANDVIK COROMANT CEMENTED TUNGSTEN CARBIDE GRADES	10.00	MOLYBDENUM	2	0.20	7439-98-7		A/CH@LES	RAW	S	D
116	32	SANDVIK COROMANT COMPANY	ALL SANDVIK COROMANT CEMENTED TUNGSTEN CARBIDE GRADES	10.00	ZIRCONIUM	2	0.20	7440-67-7		A/CH@LES	RAW	S	D
117	33	PAGE-WILSON CORPORATION	PRESSED RUBBER WHEEL	10.00	FIBERGLASS MESH MIXTURE	90	9.00				RAW	S	B
118	33	PAGE-WILSON CORPORATION	PRESSED RUBBER WHEEL	10.00	ALUMINUM OXIDE	1	0.10	1344-28-1			RAW	S	B

COPYRIGHT 2000 VANGUARD ENVIRONMENTAL, INC.

C= Carcinogen
T= Teratogen
M= Mutagen
S+__= Suspect

F= Flammable
P= Pressure
R= Reactive
A= Acute
CH= Chronic

G= Gene
L= Lung
O= Organs
E= Eyes
S= Skin

S= Solid
L= Liquid
G= Gas
SP= Solid Particle
PST= Paste

OSHA HAZCOM: ARROW GEAR COMPANY

CHEM ID	MSDS NO.	MANUFACTURER NAME	PRODUCT NAME	MAXIMUM WEIGHT	CHEMICAL NAME	%	CHEMICAL WEIGHT	CAS NUMBER	CARCINOGEN MUTAGEN TERATOGEN	NFPA 704/HMIS/ FPRACH/GLOES	CONTAINER	PHYSICAL STATE	AREA
119	33	PAGE-WILSON CORPORATION	PRESSED RUBBER WHEEL	10.00	ALUMINUM POTASSIUM FLUORIDE	1	0.10	60304-36-1			RAW	S	B
120	33	PAGE-WILSON CORPORATION	PRESSED RUBBER WHEEL	10.00	CALCIUM OXIDE	1	0.10	1305-78-8			RAW	S	B
121	33	PAGE-WILSON CORPORATION	PRESSED RUBBER WHEEL	10.00	CRYOLITE	1	0.10	15096-52-3			RAW	S	B
122	33	PAGE-WILSON CORPORATION	PRESSED RUBBER WHEEL	10.00	IRON DISULFIDE	1	0.10	12068-85-8			RAW	S	B
123	33	PAGE-WILSON CORPORATION	PRESSED RUBBER WHEEL	10.00	IRON OXIDE	1	0.10	1309-37-1			RAW	S	B
124	33	PAGE-WILSON CORPORATION	PRESSED RUBBER WHEEL	10.00	NATURAL RUBBER MIXTURE	1	0.10				RAW	S	B
125	33	PAGE-WILSON CORPORATION	PRESSED RUBBER WHEEL	10.00	SILICON CARBIDE	1	0.10	409-21-2			RAW	S	B
126	33	PAGE-WILSON CORPORATION	PRESSED RUBBER WHEEL	10.00	SULFUR	1	0.10	7704-34-9			RAW	S	B
127	34	THERMAL CERAMICS, INC	REFRACTORY CERAMIC FIBER PRODUCT	100.00	ALUMINOSILICATE FIBER	100	100.00	142844-00-6		1-0-0 A/CH@LES	RAW	S	G
128	35	MACDERMID, INC	METEX FA COPPER STRIPPER	4,000.00	AMMONIUM HYDROXIDE	25	1,000.00	1336-21-6		2-0-0 A@LES	POLY DRUM	L	C
129	39	SANDVIK COROMANT COMPANY	MOLYKOTE® 1000 PASTE	10.00	DISTILLATES, PETROLEUM, SOLVENT-DEWAXED HEAVY PARAFFINIC	48	4.80	64742-65-0		A/CH@LOES	TUBE	PST	D
130	39	SANDVIK COROMANT COMPANY	MOLYKOTE® 1000 PASTE	10.00	DISTILLATES, PETROLEUM, SOLVENT-DEWAXED LIGHT PARAFFINIC	48	4.80	64742-56-9		A/CH@LOES	TUBE	PST	D
131	39	SANDVIK COROMANT COMPANY	MOLYKOTE® 1000 PASTE	10.00	CALCIUM FLUORIDE	19	1.90	7789-75-5		A/CH@LOES	TUBE	PST	D
132	39	SANDVIK COROMANT COMPANY	MOLYKOTE® 1000 PASTE	10.00	GRAPHITE	10	1.00	7782-42-5		A/CH@LOES	TUBE	PST	D
133	39	SANDVIK COROMANT COMPANY	MOLYKOTE® 1000 PASTE	10.00	COPPER	7	0.70	7440-50-8		A/CH@LOES	TUBE	PST	D
134	39	SANDVIK COROMANT COMPANY	MOLYKOTE® 1000 PASTE	10.00	POLYISOBUTYLENE	5	0.50	9003-27-4		A/CH@LOES	TUBE	PST	D
135	39	SANDVIK COROMANT COMPANY	MOLYKOTE® 1000 PASTE	10.00	DISODIUM SEBACATE	4	0.40	17265-14-4		A/CH@LOES	TUBE	PST	D
136	39	SANDVIK COROMANT COMPANY	MOLYKOTE® 1000 PASTE	10.00	ZINC	4	0.40	7440-66-6		A/CH@LOES	TUBE	PST	D
137	39	SANDVIK COROMANT COMPANY	MOLYKOTE® 1000 PASTE	10.00	SILICON DIOXIDE	3	0.30	7631-86-9	SC	A/CH@LOES	TUBE	PST	D
138	40	SANDVIK COROMANT COMPANY	CBN	10.00	TUNGSTEN CARBIDE	97	9.70	12070-12-1		A/CH@LES	RAW	S	D

COPYRIGHT 2006 VANGUARD ENVIRONMENTAL, INC.

C= Carcinogen
T= Teratogen
M= Mutagen
S+_= Suspect

F= Flammable
P= Pressure
R= Reactive
A= Acute
CH= Chronic

G= Gene
L= Lung
O= Organs
E= Eyes
S= Skin

S= Solid
L= Liquid
G= Gas
SP= Solid Particle
PST= Paste

OSHA HAZCOM ARROW GEAR COMPANY

CHEM ID	MSDS NO.	MANUFACTURER NAME	PRODUCT NAME	MAXIMUM WEIGHT	CHEMICAL NAME	%	CHEMICAL WEIGHT	CAS NUMBER	CARCINOGEN MUTAGEN TERATOGEN	NFPA 704/HMIS/ FPRACH/GLOES	CONTAINER	PHYSICAL STATE	AREA
139	40	SANDVIK COROMANT COMPANY	CBN	10.00	TITANIUM DIOXIDE	23	2.30	13463-67-7	C	A/CH@LES	RAW	S	D
140	40	SANDVIK COROMANT COMPANY	CBN	10.00	COBALT	15	1.50	7440-48-4	C	A/CH@LES	RAW	S	D
141	40	SANDVIK COROMANT COMPANY	CBN	10.00	ALUMINUM OXIDE	2	0.20	1344-28-1		A/CH@LES	RAW	S	D
142	40	SANDVIK COROMANT COMPANY	CBN	10.00	BORON OXIDE	2	0.20	1303-86-2		A/CH@LES	RAW	S	D
143	40	SANDVIK COROMANT COMPANY	CBN	10.00	CHROMIUM	2	0.20	7440-47-3	C	A/CH@LES	RAW	S	D
144	40	SANDVIK COROMANT COMPANY	CBN	10.00	MOLYBDENUM	2	0.20	7439-98-7		A/CH@LES	RAW	S	D
145	40	SANDVIK COROMANT COMPANY	CBN	10.00	ZIRCONIUM	2	0.20	7440-67-7		A/CH@LES	RAW	S	D
146	40	SANDVIK COROMANT COMPANY	CBN	10.00	NICKEL	0.35	0.04	7440-02-0	SC	A/CH@LES	RAW	S	D
147	41	SANDVIK COROMANT COMPANY	PCD	10.00	TUNGSTEN CARBIDE	88	8.80	12070-12-1		A/CH@LES	RAW	S	D
148	41	SANDVIK COROMANT COMPANY	PCD	10.00	COBALT	23	2.30	7440-48-4	C	A/CH@LES	RAW	S	D
149	41	SANDVIK COROMANT COMPANY	PCD	10.00	TITANIUM DIOXIDE	23	2.30	13463-67-7	C	A/CH@LES	RAW	S	D
150	41	SANDVIK COROMANT COMPANY	PCD	10.00	ALUMINUM OXIDE	2	0.20	1344-28-1		A/CH@LES	RAW	S	D
151	41	SANDVIK COROMANT COMPANY	PCD	10.00	BORON OXIDE	2	0.20	1303-86-2		A/CH@LES	RAW	S	D
152	41	SANDVIK COROMANT COMPANY	PCD	10.00	CHROMIUM	2	0.20	7440-47-3	C	A/CH@LES	RAW	S	D
153	41	SANDVIK COROMANT COMPANY	PCD	10.00	MOLYBDENUM	2	0.20	7439-98-7		A/CH@LES	RAW	S	D
154	41	SANDVIK COROMANT COMPANY	PCD	10.00	ZIRCONIUM	2	0.20	7440-67-7		A/CH@LES	RAW	S	D
155	43	ERICH NUSSLE OHG	CONDURSAL 0090	20.00	BORON OXIDE	50	10.00	1303-86-2		F/A@LES	CAN	L	C
156	43	ERICH NUSSLE OHG	CONDURSAL 0090	20.00	XYLENE	25	5.00	1330-20-7		F/A@LES	CAN	L	C
157	44	ERICH NUSSLE OHG	CONDURSAL N523	20.00	CHROMIUM OXIDE	100	20.00	1308-38-9	C	F/A@LES	CAN	PST	C
158	44	ERICH NUSSLE OHG	CONDURSAL N523	20.00	XYLENE	100	20.00	1330-20-7		F/A@LES	CAN	PST	C

COPYRIGHT 2000 VANGUARD ENVIRONMENTAL, INC.
TULSA, OK.

C= Carcinogen
T= Teratogen
M= Mutagen
S+__= Suspect

F= Flammable
P= Pressure
R= Reactive
A= Acute
CH= Chronic

G= Gene
L= Lung
O= Organs
E= Eyes
S= Skin

S= Solid
L= Liquid
G= Gas
SP= Solid Particle
PST= Paste

OSHA HAZCOM: ARROW GEAR COMPANY

CHEM ID	MSDS NO.	MANUFACTURER NAME	PRODUCT NAME	MAXIMUM WEIGHT	CHEMICAL NAME	%	CHEMICAL WEIGHT	CAS NUMBER	CARCINOGEN MUTAGEN TERATOGEN	NFPA 704/HMIS/ FPRACH/GLOES	CONTAINER	PHYSICAL STATE	AREA
159	45	PERKINS PRODUCTS INC	PERCHEM 1345 CS	465.05	EDTA TETRASODIUM SALT	5	23.25	64-02-8		1-0-0 A/a LES	STEEL DRUM	L	N
160	45	PERKINS PRODUCTS INC	PERCHEM 1345 CS	465.05	ETHOXYLATED PHENYL PHOSPHATE	1	4.65	39464-70-5		1-0-0 A/a LES	STEEL DRUM	L	N
161	46	ERICH NUSSLE OHG	CONDURSAL 710	100.00	METALLIC OXIDE MIXTURE	100	100.00			A/a LES	CAN	PST	C
162	46	ERICH NUSSLE OHG	CONDURSAL 710	100.00	SILICATE MIXTURE	100	100.00			A/a LES	CAN	PST	C
163	46	ERICH NUSSLE OHG	CONDURSAL 710	100.00	SODIUM SILICATE	100	100.00	1344-09-8	SC	A/a LES	CAN	PST	C
164	47	NEW PIG CORPORATION	ORIGINAL PIG® ABSORBENT SOCKS	200.00	POLY(OXYETHYLENEOXYTEREPHTHALOYL)	4.5	9.00	25038-59-9		A/a LE	BOX	SP	D
165	47	NEW PIG CORPORATION	ORIGINAL PIG® ABSORBENT SOCKS	200.00	POLYPROPYLENE	0.5	1.00	9003-07-0		A/a LE	BOX	SP	D
166	48	NORTON COMPANY	DIAMOND OR CUBIC BORON NITRIDE GRINDING WHEELS	5,000.00	COPPER	85	4,250.00	7440-50-8		A/a LES	RAW	S	D, I & P
167	48	NORTON COMPANY	DIAMOND OR CUBIC BORON NITRIDE GRINDING WHEELS	5,000.00	SILVER	85	4,250.00	7440-22-4		A/a LES	RAW	S	D, I & P
168	48	NORTON COMPANY	DIAMOND OR CUBIC BORON NITRIDE GRINDING WHEELS	5,000.00	NICKEL	82	4,100.00	7440-02-0	SC	A/a LES	RAW	S	D, I & P
169	48	NORTON COMPANY	DIAMOND OR CUBIC BORON NITRIDE GRINDING WHEELS	5,000.00	ALUMINUM OXIDE	81	4,050.00	1344-28-1		A/a LES	RAW	S	D, I & P
170	48	NORTON COMPANY	DIAMOND OR CUBIC BORON NITRIDE GRINDING WHEELS	5,000.00	TUNGSTEN CARBIDE	75	3,750.00	12070-12-1		A/a LES	RAW	S	D, I & P
171	48	NORTON COMPANY	DIAMOND OR CUBIC BORON NITRIDE GRINDING WHEELS	5,000.00	SILICON CARBIDE	73	3,650.00	409-21-2		A/a LES	RAW	S	D, I & P
172	48	NORTON COMPANY	DIAMOND OR CUBIC BORON NITRIDE GRINDING WHEELS	5,000.00	COBALT	60	3,000.00	7440-48-4	C	A/a LES	RAW	S	D, I & P
173	48	NORTON COMPANY	DIAMOND OR CUBIC BORON NITRIDE GRINDING WHEELS	5,000.00	TIN	25	1,250.00	7440-31-5		A/a LES	RAW	S	D, I & P
174	48	NORTON COMPANY	DIAMOND OR CUBIC BORON NITRIDE GRINDING WHEELS	5,000.00	GRAPHITE	20	1,000.00	7782-42-5		A/a LES	RAW	S	D, I & P
175	48	NORTON COMPANY	DIAMOND OR CUBIC BORON NITRIDE GRINDING WHEELS	5,000.00	BORON NITRIDE	5	250.00	10043-11-5		A/a LES	RAW	S	D, I & P
176	48	NORTON COMPANY	DIAMOND OR CUBIC BORON NITRIDE GRINDING WHEELS	5,000.00	DIAMOND	5	250.00	7782-40-3		A/a LES	RAW	S	D, I & P
177	48	NORTON COMPANY	DIAMOND OR CUBIC BORON NITRIDE GRINDING WHEELS	5,000.00	FUSED SILICA	5	250.00	60676-86-0		A/a LES	RAW	S	D, I & P
178	48	NORTON COMPANY	DIAMOND OR CUBIC BORON NITRIDE GRINDING WHEELS	5,000.00	PHENOL, POLYMER WITH FORMALDEHYDE	5	250.00	9003-35-4		A/a LES	RAW	S	D, I & P

HAZARD COMMUNICATION CHEMICAL INVENTORY LIST
COPYRIGHT 2000, VANGUARD ENVIRONMENTAL, INC.
TULSA, OK.

C= Carcinogen
T= Teratogen
M= Mutagen
S+__ = Suspect

F= Flammable
P= Pressure
R= Reactive
A= Acute
CH= Chronic

G= Gene
L= Lung
O= Organs
E= Eyes
S= Skin

S= Solid
L= Liquid
G= Gas
SP= Solid Particle
PST= Paste

OSHA HAZCOM: ARROW GEAR COMPANY

CHEM ID	MSDS NO.	MANUFACTURER NAME	PRODUCT NAME	MAXIMUM WEIGHT	CHEMICAL NAME	%	CHEMICAL WEIGHT	CAS NUMBER	CARCINOGEN MUTAGEN TERATOGEN	NFPA 704/HMIS/ FPRACH/GLOES	CONTAINER	PHYSICAL STATE	AREA
179	48	NORTON COMPANY	DIAMOND OR CUBIC BORON NITRIDE GRINDING WHEELS	5,000.00	SILICON	5	250.00	7440-21-3		A@LES	RAW	S	D I & P
180	48	NORTON COMPANY	DIAMOND OR CUBIC BORON NITRIDE GRINDING WHEELS	5,000.00	IRON	3	150.00	7439-89-6		A@LES	RAW	S	D I & P
181	48	NORTON COMPANY	DIAMOND OR CUBIC BORON NITRIDE GRINDING WHEELS	5,000.00	MANGANESE	3	150.00	7439-96-5		A@LES	RAW	S	D I & P
182	48	NORTON COMPANY	DIAMOND OR CUBIC BORON NITRIDE GRINDING WHEELS	5,000.00	CRYSTALLINE SILICA	1	50.00	14808-60-7	C	A@LES	RAW	S	D I & P
183	48	NORTON COMPANY	DIAMOND OR CUBIC BORON NITRIDE GRINDING WHEELS	5,000.00	MOLYBDENUM	1	50.00	7439-98-7		A@LES	RAW	S	D I & P
184	48	NORTON COMPANY	DIAMOND OR CUBIC BORON NITRIDE GRINDING WHEELS	5,000.00	PHOSPHORUS	1	50.00	7723-14-0		A@LES	RAW	S	D I & P
185	49	ITW FLUID PRODUCTS GROUP	YELLOW DXX-526, DLT, DXX-140	72.65	BUTYL ACETATE	50	36.33	123-86-4		F/A@LES	BOTTLE	L	R
186	49	ITW FLUID PRODUCTS GROUP	YELLOW DXX-526, DLT, DXX-140	72.65	BUTYL ALCOHOL	30	21.80	71-36-3		F/A@LES	BOTTLE	L	R
187	49	ITW FLUID PRODUCTS GROUP	YELLOW DXX-526, DLT, DXX-140	72.65	ETHYL ALCOHOL	30	21.80	64-17-5	C, ST	F/A@LES	BOTTLE	L	R
188	49	ITW FLUID PRODUCTS GROUP	YELLOW DXX-526, DLT, DXX-140	72.65	NITROCELLULOSE	10	7.27	9004-70-0		F/A@LES	BOTTLE	L	R
189	49	ITW FLUID PRODUCTS GROUP	YELLOW DXX-526, DLT, DXX-140	72.65	CHROMIUM	5	3.63	7440-47-3	C	F/A@LES	BOTTLE	L	R
190	49	ITW FLUID PRODUCTS GROUP	YELLOW DXX-526, DLT, DXX-140	72.65	ETHYL ACETATE	5	3.63	141-78-6		F/A@LES	BOTTLE	L	R
191	49	ITW FLUID PRODUCTS GROUP	YELLOW DXX-526, DLT, DXX-140	72.65	ISOPROPYL ALCOHOL	5	3.63	67-63-0		F/A@LES	BOTTLE	L	R
192	49	ITW FLUID PRODUCTS GROUP	YELLOW DXX-526, DLT, DXX-140	72.65	LEAD	5	3.63	7439-92-1	SC	F/A@LES	BOTTLE	L	R
193	49	ITW FLUID PRODUCTS GROUP	YELLOW DXX-526, DLT, DXX-140	72.65	PROPYL ACETATE	5	3.63	109-60-4		F/A@LES	BOTTLE	L	R
194	49	ITW FLUID PRODUCTS GROUP	YELLOW DXX-526, DLT, DXX-140	72.65	TITANIUM DIOXIDE	5	3.63	13463-67-7	C	F/A@LES	BOTTLE	L	R
195	49	ITW FLUID PRODUCTS GROUP	YELLOW DXX-526, DLT, DXX-140	72.65	TOLUENE	5	3.63	108-88-3	T	F/A@LES	BOTTLE	L	R
196	50	ITW FLUID PRODUCTS GROUP	HI-SPOT BLUE #107	5.00	MARKING MIXTURE	100	5.00			A@LES	TUBE	PST	I & R
197	51	ITW FLUID PRODUCTS GROUP	STEEL BLUE, DX-100	70.15	BUTYL ACETATE	50	35.07	123-86-4		F/A@LES	GLASS BOTTLE	L	I & R
198	51	ITW FLUID PRODUCTS GROUP	STEEL BLUE, DX-100	70.15	ETHYL ALCOHOL	50	35.07	64-17-5	C, ST	F/A@LES	GLASS BOTTLE	L	I & R

HAZARD COMMUNICATION CHEMICAL INVENTORY LIST
COPYRIGHT 2000, VANGUARD ENVIRONMENTAL, INC.
TULSA, OK.

C= Carcinogen
T= Teratogen
M= Mutagen
S+__= Suspect

F= Flammable
P= Pressure
R= Reactive
A= Acute
CH= Chronic

G= Gene
L= Lung
O= Organs
E= Eyes
S= Skin

S= Solid
L= Liquid
G= Gas
SP= Solid Particle
PST= Paste

OSHA HAZCOM: ARROW GEAR COMPANY

CHEM ID	MSDS NO.	MANUFACTURER NAME	PRODUCT NAME	MAXIMUM WEIGHT	CHEMICAL NAME	%	CHEMICAL WEIGHT	CAS NUMBER	CARCINOGEN MUTAGEN TERATOGEN	NFPA 704/HMIS/ FPRACH/GLOES	CONTAINER	PHYSICAL STATE	AREA
199	51	ITW FLUID PRODUCTS GROUP	STEEL BLUE, DX-100	70 15	BUTYL ALCOHOL	5	3 51	71-36-3		F/A@LES	GLASS BOTTLE	L	E & R
200	51	ITW FLUID PRODUCTS GROUP	STEEL BLUE, DX-100	70 15	ISOPROPYL ALCOHOL	5	3 51	67-63-0		F/A@LES	GLASS BOTTLE	L	E & R
201	51	ITW FLUID PRODUCTS GROUP	STEEL BLUE, DX-100	70 15	NITROCELLULOSE	5	3.51	9004-70-0		F/A@LES	GLASS BOTTLE	L	E & R
202	51	ITW FLUID PRODUCTS GROUP	STEEL BLUE, DX-100	70 15	PROPYL ACETATE	5	3 51	109-60-4		F/A@LES	GLASS BOTTLE	L	E & R
203	52	ITW FLUID PRODUCTS GROUP	STEEL RED, DX-986, DX-296, RED DL	70 15	BUTYL ACETATE	50	35 07	123-86-4		F/A@LES	GLASS BOTTLE	L	E & R
204	52	ITW FLUID PRODUCTS GROUP	STEEL RED, DX-986, DX-296, RED DL	70 15	ETHYL ALCOHOL	50	35.07	64-17-5	C, ST	F/A@LES	GLASS BOTTLE	L	E & R
205	52	ITW FLUID PRODUCTS GROUP	STEEL RED, DX-986, DX-296, RED DL	70 15	2-PENTANONE, 4-HYDROXY-4-METHYL-	5	3.51	123-42-2		F/A@LES	GLASS BOTTLE	L	E & R
206	52	ITW FLUID PRODUCTS GROUP	STEEL RED, DX-986, DX-296, RED DL	70 15	BUTYL ALCOHOL	5	3 51	71-36-3		F/A@LES	GLASS BOTTLE	L	E & R
207	52	ITW FLUID PRODUCTS GROUP	STEEL RED, DX-986, DX-296, RED DL	70 15	COBALT	5	3.51	7440-48-4	C	F/A@LES	GLASS BOTTLE	L	E & R
208	52	ITW FLUID PRODUCTS GROUP	STEEL RED, DX-986, DX-296, RED DL	70 15	ISOPROPYL ALCOHOL	5	3 51	67-63-0		F/A@LES	GLASS BOTTLE	L	E & R
209	52	ITW FLUID PRODUCTS GROUP	STEEL RED, DX-986, DX-296, RED DL	70 15	NITROCELLULOSE	5	3 51	9004-70-0		F/A@LES	GLASS BOTTLE	L	E & R
210	52	ITW FLUID PRODUCTS GROUP	STEEL RED, DX-986, DX-296, RED DL	70 15	PROPYL ACETATE	5	3 51	109-60-4		F/A@LES	GLASS BOTTLE	L	E & R
211	53	SEALED AIR CORPORATION	INSTAPAK® PORT CLEANER	5 00	DIHYDRO-2(3H)-FURANONE	97	4 85	96-48-0		1-2-0 A@LES	GLASS BOTTLE	L	O
212	53	SEALED AIR CORPORATION	INSTAPAK® PORT CLEANER	5 00	CARBON DIOXIDE	3	0.15	124-38-9		1-2-0 A@LES	GLASS BOTTLE	L	O
213	54	SEALED AIR CORPORATION	HOLSTER/INSTAPACKER™ SOLVENT	5 00	TRIPROPYLENE GLYCOL METHYL ETHER	99	4.95	25498-49-1		0-1-0 A@LES	CAN	L	O
214	56	DOW CORNING CORPORATION	MOLYKOTE® G-N PASTE	20 00	ORGANIC GREASE MIXTURE	100	20 00			1-1-0 A@LES	TUBE	PST	D & E
215	57	DOW CORNING CORPORATION	MOLYKOTE® 1000 ANTI-SEIZE LUBRICANT	5 00	LUBRICANT MIXTURE	100	5.00			1-1-0 A@LES	CAN	PST	I
216	58	FRANKLIN OIL CORPORATION	RUST FOIL L-492 SPEC	140 30	DISTILLATES, PETROLEUM, HYDROTREATED HEAVY NAPHTHENIC	100	140 30	64742-52-5		A@LES	STEEL DRUM	L	O
217	58	FRANKLIN OIL CORPORATION	RUST FOIL L-492 SPEC	140 30	STODDARD SOLVENT	100	140 30	8052-41-3		A@LES	STEEL DRUM	L	O
218	59	FRANKLIN OIL CORPORATION	RUST FOIL 2675	111 86	DISTILLATES, PETROLEUM, HYDROTREATED LIGHT NAPHTHENIC	100	111 86	64742-53-6		A@LES	POLY DRUM	L	O

HAZARD COMMUNICATION CHEMICAL INVENTORY LIST
COPYRIGHT 2000, VANGUARD ENVIRONMENTAL, INC.
TULSA, OK

C= Carcinogen
T= Teratogen
M= Mutagen
S+__= Suspect

F= Flammable
P= Pressure
R= Reactive
A= Acute
CH= Chronic

G= Gene
L= Lung
O= Organs
E= Eyes
S= Skin

S= Solid
L= Liquid
G= Gas
SP= Solid Particle
PST= Paste

OSHA HAZCOM: ARROW GEAR COMPANY

CHEM ID	MSDS NO.	MANUFACTURER NAME	PRODUCT NAME	MAXIMUM WEIGHT	CHEMICAL NAME	%	CHEMICAL WEIGHT	CAS NUMBER	CARCINOGEN MUTAGEN TERATOGEN	NFPA 704/HMIS/ FPRACH/GLOES	CONTAINER	PHYSICAL STATE	AREA
219	60	REFRACTORY PRODUCTS COMPANY	RPC 2100 RPC 2300	100 00	ALUMINOSILICATE	95	95 00	12183-80-1		1-0-0 A@LES	RAW	S	G
220	60	REFRACTORY PRODUCTS COMPANY	RPC2100 RPC 2300	100 00	SILICON DIOXIDE	65	65 00	7631-86-9	SC	1-0-0 A@LES	RAW	S	G
221	60	REFRACTORY PRODUCTS COMPANY	RPC 2100 RPC 2300	100 00	CRISTOBALITE	60	60 00	14464-46-1		1-0-0 A@LES	RAW	S	G
222	61	HOUGHTON INTERNATIONAL INC	HOUGHTO-QUENCH G	25,721 08	DISTILLATES HYDROTREATED LIGHT PARAFFIN	60	15,432 65	64742-55-8		1-1-0 A@LES	STEEL DRUM	L	G & I
223	61	HOUGHTON INTERNATIONAL, INC	HOUGHTO-QUENCH G	25,721 08	SOLVENT REFINED HEAVY PARAFFINIC DISTILLATES	30	7,716 32	64741-88-4		1-1-0 A@LES	STEEL DRUM	L	G & I
224	61	HOUGHTON INTERNATIONAL, INC	HOUGHTO-QUENCH G	25,721 08	HYDROCARBON OILS	10	2,572 11	8020-83-5		1-1-0 A@LES	STEEL DRUM	L	G & I
225	62	SUNSHINE MAKERS, INC	SIMPLE GREEN (OIL DISPERSANT)	12 00	2-BUTOXYETHANOL	2	0.24	111-76-2			GLASS BOTTLE	L	F
226	63	NORTON COMPANY	VITRIFIED BONDED-ABRASIVE PRODUCTS	100 00	ALUMINUM OXIDE	96	96.00	1344-28-1		1-0-0 A@LES	RAW	S	D, P & U
227	63	NORTON COMPANY	VITRIFIED BONDED-ABRASIVE PRODUCTS	100 00	SILICON CARBIDE	96	96.00	409-21-2		1-0-0 A@LES	RAW	S	D, P & U
228	63	NORTON COMPANY	VITRIFIED BONDED-ABRASIVE PRODUCTS	100 00	SULFUR	41	41.00	7704-34-9		1-0-0 A@LES	RAW	S	D, P & U
229	63	NORTON COMPANY	VITRIFIED BONDED-ABRASIVE PRODUCTS	100 00	GLASS BOND MIXTURE	30	30.00			1-0-0 A@LES	RAW	S	D, P & U
230	65	THE TOLBER DIVISION	MICCROSTOP	7 91	METHYL ETHYL KETONE	75	5.95	78-93-3		3-3-0 F/A@LES	CAN	L	C
231	65	THE TOLBER DIVISION	MICCROSTOP	7 91	PROPYLENE OXIDE	7	0.56	75-56-9	SC	3-3-0 F/A@LES	CAN	L	C
232	66	AGA GAS, INC	NITROGEN, REFRIGERATED LIQUID	24,301 41	NITROGEN	100	24,301.41	7727-37-9		P/A@L	AST	L	I
233	67	VAN WATERS & ROGERS, INC	CAUSTIC SODA ANHYDROUS (ALL GRADES)	50 00	SODIUM HYDROXIDE	98 2	49.10	1310-73-2		3-0-2 R/A@LES	BAG	S	C
234	67	VAN WATERS & ROGERS, INC	CAUSTIC SODA ANHYDROUS (ALL GRADES)	50 00	SODIUM CHLORIDE	1 2	0.60	7647-14-5		3-0-2 R/A@LES	BAG	S	C
235	67	VAN WATERS & ROGERS, INC	CAUSTIC SODA ANHYDROUS (ALL GRADES)	50 00	SODIUM CARBONATE	1	0 50	497-19-8		3-0-2 R/A@LES	BAG	S	C
236	68	VAN WATERS & ROGERS, INC	SODIUM CARBONATE	50 00	SODIUM CARBONATE	99 8	49 90	497-19-8		2-0-0 A@LES	GLASS BOTTLE	SP	C
237	69	BRUSH WELLMAN ENGINEERING MATERIALS	COPPER BERYLLIUM WROUGHT ALLOYS	168 00	COPPER	92 8	155.90	7440-50-8		A/CH@LES	RAW	S	I
238	69	BRUSH WELLMAN ENGINEERING MATERIALS	COPPER BERYLLIUM WROUGHT ALLOYS	168 00	NICKEL	22	36.96	7440-02-0	SC	A/CH@LES	RAW	S	I

COPYRIGHT 2000, VANGUARD ENVIRONMENTAL, INC.
TULSA, OK

O= Carcinogen
T= Teratogen
M= Mutagen
S+__ = Suspect

F= Flammable
P= Pressure
R= Reactive
A= Acute
CH= Chronic

G= Gene
L= Lung
O= Organs
E= Eyes
S= Skin

S= Solid
L= Liquid
G= Gas
SP= Solid Particle
PST= Paste

OSHA HAZCOM: ARROW GEAR COMPANY

CHEM ID	MSDS NO.	MANUFACTURER NAME	PRODUCT NAME	MAXIMUM WEIGHT	CHEMICAL NAME	%	CHEMICAL WEIGHT	CAS NUMBER	CARCINOGEN MUTAGEN TERATOGEN	NFPA 704/HMIS/ FPRACH/GLOES	CONTAINER	PHYSICAL STATE	AREA
239	69	BRUSH WELLMAN ENGINEERING MATERIALS	COPPER BERYLLIUM WROUGHT ALLOYS	168.00	COBALT	2.7	4.54	7440-48-4	C	A/CH@LES	RAW	S	I
240	69	BRUSH WELLMAN ENGINEERING MATERIALS	COPPER BERYLLIUM WROUGHT ALLOYS	168.00	BERYLLIUM	2	3.36	7440-41-7	SC	A/CH@LES	RAW	S	I
241	69	BRUSH WELLMAN ENGINEERING MATERIALS	COPPER BERYLLIUM WROUGHT ALLOYS	168.00	ZIRCONIUM	0.3	0.50	7440-67-7		A/CH@LES	RAW	S	I
242	70	MALLINCKRODT BAKER, INC	TOLUENE	43.09	TOLUENE	100	43.09	108-88-3	T	2-3-0 F/A/CH@LOES	STEEL DRUM & GLASS BOTTLE	L	C
243	71	MAN-GILL CHEMICAL	POWER STRIP 720	2,820.97	ETHYLENE GLYCOL PHENYL ETHER	90	2,538.87	122-99-6		2-1-0 A@LES	POLY DRUM & AST	L	C
244	72	MONROE FLUID TECHNOLOGY	COOL TOOL	417.97	COOL TOOL MIXTURE	100	417.97			1-1-0 A@LES	STEEL DRUM	L	A & B
245	73	EVANS MANUFACTURING, INC	PEEL COAT - TYPE I	200.00	ETHYLCELLULOSE MIXTURE	100	200.00				BOX	S	O
246	74	DETREX CORPORATION	DETREX YELLOW GEAR MARKING COMPOUND	75.16	DISTILLATES, PETROLEUM, STRAIGHT-RUN MIDDLE	30	22.55	64741-44-2		A@ES	CAN	PST	V
247	75	SEALED AIR CORPORATION	INSTAPAK® -40W COMPONENT "B"	701.48	GLYCEROL	7	49.10	56-81-5		2-1-0 A@LES	STEEL DRUM	L	O
248	75	SEALED AIR CORPORATION	INSTAPAK® -40W COMPONENT "B"	701.48	AMINE CATALYST MIXTURE	3	21.04			2-1-0 A@LES	STEEL DRUM	L	O
249	76	SEALED AIR CORPORATION	INSTAPAK® COMPONENT "A"	828.42	(Z,Z)-9,12-OCTADECADIENOIC ACID, DIMER, POLYMER WITH 3,3'-[OXYBIS(2,1-	100	828.42	9016-87-9		2-1-0 A@LES	STEEL DRUM	L	O
250	76	SEALED AIR CORPORATION	INSTAPAK® COMPONENT "A"	828.42	METHYLENEBISPHENYLISOCYANATE)	45	372.79	101-68-8		2-1-0 A@LES	STEEL DRUM	L	O
251	77	ULTRAMATIC EQUIPMENT COMPANY	LR-600-S	16.70	ISOPROPYL ALCOHOL	1	0.17	67-63-0		A@LES	POLY JUG	L	B
252	77	ULTRAMATIC EQUIPMENT COMPANY	LR-600-S	16.70	ETHANOLAMINE	0.0001	0.00	141-43-5		A@LES	POLY JUG	L	B
253	78	CORAL INTERNATIONAL	CORFILM 14	376.63	FLASH NAPHTHA	20	75.33	64742-88-7		1-2-0 F/A@LES	STEEL DRUM	L	O
254	79	DEGUSSA CORPORATION	DEGUSSA 5600 FOIL (MB565)	10.00	COPPER	100	10.00	7440-50-8		A/CH@LES	RAW	S	F
255	79	DEGUSSA CORPORATION	DEGUSSA 5600 FOIL (MB565)	10.00	SILVER	100	10.00	7440-22-4		A/CH@LES	RAW	S	I
256	79	DEGUSSA CORPORATION	DEGUSSA 5600 FOIL (MB565)	10.00	TIN	100	10.00	7440-31-5		A/CH@LES	RAW	S	F
257	79	DEGUSSA CORPORATION	DEGUSSA 5600 FOIL (MB565)	10.00	ZINC	100	10.00	7440-66-6		A/CH@LES	RAW	S	F
258	80	ROYAL LUBRICANTS COMPANY, INC	ROYCO 885	15.53	LUBRICATING OIL MIXTURE	100	15.53			A@ES	CAN	L	O

COPYRIGHT 2000 VANGUARD ENVIRONMENTAL, INC.
TULSA, OK

C= Carcinogen, T= Teratogen, M= Mutagen, S+__= Suspect
F= Flammable, P= Pressure, R= Reactive, A= Acute, CH= Chronic
G= Gene, L= Lung, O= Organs, E= Eyes, S= Skin
S= Solid, L= Liquid, G= Gas, SP= Solid Particle, PST= Paste

OSHA HAZCOM: ARROW GEAR COMPANY

CHEM ID	MSDS NO.	MANUFACTURER NAME	PRODUCT NAME	MAXIMUM WEIGHT	CHEMICAL NAME	%	CHEMICAL WEIGHT	CAS NUMBER	CARCINOGEN MUTAGEN TERATOGEN	NFPA 704/HMIS/ FPRACH/GLOES	CONTAINER	PHYSICAL STATE	AREA
259	81	STANCHEM, INC	CORROSION VARNISH	24.00	ETHYL ALCOHOL	26	6.24	64-17-5	C, S1	F/A@LES	CAN	L	C & G
260	81	STANCHEM, INC	CORROSION VARNISH	24.00	BUTYL ACETATE	24	5.76	123-86-4		F/A@LES	CAN	L	C & G
261	81	STANCHEM, INC	CORROSION VARNISH	24.00	BUTYL ALCOHOL	20	4.80	71-36-3		F/A@LES	CAN	L	C & G
262	82	STANCHEM, INC	THINNER	20.40	1-PENTANOL	58	11.83	71-41-0		F/A@LES	CAN	L	C & H
263	82	STANCHEM, INC	THINNER	20.40	BUTYL ACETATE	25	5.10	123-86-4		F/A@LES	CAN	L	C & H
264	82	STANCHEM, INC	THINNER	20.40	ETHYL ALCOHOL	17	3.47	64-17-5	C, S1	F/A@LES	CAN	L	C & H
265	83	ACHESON COLLOIDS COMPANY	DAG 154	826.75	ISOPROPYL ALCOHOL	50	413.37	67-63-0		F/A@LES	STEEL DRUM	L	J N & O
266	83	ACHESON COLLOIDS COMPANY	DAG 154	826.75	GRAPHITE	20	165.35	7782-42-5		F/A@LES	STEEL DRUM	L	J N & O
267	83	ACHESON COLLOIDS COMPANY	DAG 154	826.75	1-METHOXY-2-PROPANOL	5	41.34	107-98-2		F/A@LES	STEEL DRUM	L	J N & O
268	83	ACHESON COLLOIDS COMPANY	DAG 154	826.75	2-METHYL-2,4-PENTANEDIOL	5	41.34	107-41-5		F/A@LES	STEEL DRUM	L	J N & O
269	83	ACHESON COLLOIDS COMPANY	DAG 154	826.75	BUTYL ALCOHOL	5	41.34	71-36-3		F/A@LES	STEEL DRUM	L	J N & O
270	83	ACHESON COLLOIDS COMPANY	DAG 154	826.75	THICKENER MIXTURE	5	41.34			F/A@LES	STEEL DRUM	L	J N & O
271	85	SHELL OIL COMPANY	ISOPROPYL ALCOHOL	1,811.96	ISOPROPYL ALCOHOL	100	1,811.96	67-63-0		1-3-0 F/A@LES	STEEL DRUM	L	C & J
272	86	METHANEX CORPORATION	METHANOL	1,828.03	METHYL ALCOHOL	99.85	1,825.29	67-56-1		1-3-0 F/A/CH@LES	STEEL DRUM	L	C & J
273	87	BOC GASSES	ARGOSHIELD GAS #50A, #75 AND #75A	3.34	ARGON	75	2.50	7440-37-1		0-0-0 P/A@L	STEEL CYLINDER	G	F
274	87	BOC GASSES	ARGOSHIELD GAS #50A, #75 AND #75A	3.34	HELIUM	75	2.50	7440-59-7		0-0-0 P/A@L	STEEL CYLINDER	G	E
275	88	BOC GASSES	ARGOSHIELD #25C	33.35	ARGON	95	31.68	7440-37-1		1-0-0 P/A@L	STEEL CYLINDER	G	F
276	88	BOC GASSES	ARGOSHIELD #25C	33.35	CARBON DIOXIDE	85	28.34	124-38-9		1-0-0 P/A@L	STEEL CYLINDER	G	F
277	89	LAROCHE INDUSTRIES, INC.	AMMONIA	450.00	AMMONIA	99.5	447.75	7664-41-7		3-1-0 A@LES	CYLINDER	L	C & H
278	89	LAROCHE INDUSTRIES, INC	AMMONIA	450.00	OIL MIXTURE	0.1	0.45			3-1-0 A@LES	CYLINDER	L	C & H

COPYRIGHT 2008 VANGUARD ENVIRONMENTAL, INC.
TULSA, OK

C= Carcinogen
T= Teratogen
M= Mutagen
S+__= Suspect

F= Flammable
P= Pressure
R= Reactive
A= Acute
CH= Chronic

G= Gene
L= Lung
O= Organs
E= Eyes
S= Skin

S= Solid
L= Liquid
G= Gas
SP= Solid Particle
PST= Paste

OSHA HAZCOM: ARROW GEAR COMPANY

CHEM ID	MSDS NO.	MANUFACTURER NAME	PRODUCT NAME	MAXIMUM WEIGHT	CHEMICAL NAME	%	CHEMICAL WEIGHT	CAS NUMBER	CARCINOGEN MUTAGEN TERATOGEN	NFPA 704/HMIS/ FPRACH/GLOES	CONTAINER	PHYSICAL STATE	AREA
279	90	PURITAN-BENNETT CORPORATION	ARGON	33.35	ARGON	95	31.68	7440-37-1		P A/a I	STEEL CYLINDER	G	I
280	92	PURITAN BENNETT CORPORATION	GASEOUS OXYGEN	160.26	OXYGEN	99.5	159.46	7782-44-7		P A/a I	STEEL CYLINDER	G	I & G
281	93	PERKINS PRODUCTS, INC	PERKUT 955	401.16	HYDROTREATED HEAVY PARAFFINIC DISTILLATE	95	381.10	64742-54-7		1-1-0 A/a LS	STEEL DRUM	L	O & P
282	93	PERKINS PRODUCTS, INC	PERKUT 955	401.16	DI-TERT-NONYL POLYSULFIDES	10	40.12	68425-16-4		1-1-0 A/a LS	STEEL DRUM	L	O & P
283	94	PERKINS PRODUCTS, INC	PERCHEM 1140	6,558.04	ALIPHATIC PETROLEUM DISTILLATES	100	6,558.04	64742-47-8		1-2-0 F/A/a LES	AST	L	PLANT WIDE
284	95	PERKINS PRODUCTS, INC	PERKOTE 30-353-AG	6,985.61	ALIPHATIC PETROLEUM DISTILLATES	55	3,842.09	64742-47-8		1-2-0 F/A/a LES	AST	L	PLANT WIDE
285	95	PERKINS PRODUCTS, INC	PERKOTE 30-353-AG	6,985.61	DISTILLATES, PETROLEUM, HYDROTREATED LIGHT NAPHTHENIC	25	1,746.40	64742-53-6		1-2-0 F/A/a LES	AST	L	PLANT WIDE
286	95	PERKINS PRODUCTS, INC	PERKOTE 30-353-AG	6,985.61	SEVERELY SOLVENT REFINED PETROLEUM DISTILLATES	15	1,047.84	64741-96-4		1-2-0 F/A/a LES	AST	L	PLANT WIDE
287	96	PERKINS PRODUCTS, INC	PERCHEM 1133	6.68	KEROSINE, PETROLEUM, HYDRODESULFURIZED	100	6.68	64742-81-0		1-2-0 F/A/CH/a LES	CAN	L	B & C
288	97	PERKINS PRODUCTS, INC	PERLUBE RO-68	22,059.17	HYDROTREATED HEAVY PARAFFINIC DISTILLATE	100	22,059.17	64742-54-7		1-1-0 A/a LS	STEEL DRUM	L	I, I & O
289	98	PERKINS PRODUCTS, INC	PERCHEM 1330	1,488.42	POTASSIUM HYDROXIDE	15	223.26	1310-58-3		1-0-0 A/a LES	STEEL DRUM	L	C, I & V
290	98	PERKINS PRODUCTS, INC	PERCHEM 1330	1,488.42	SODIUM PHOSPHATE, TRIBASIC	10	148.84	10101-89-0		1-0-0 A/a LES	STEEL DRUM	L	C, I & V
291	98	PERKINS PRODUCTS, INC	PERCHEM 1330	1,488.42	2,5-FURANDIONE, DIHYDRO-3-(OCTENYL)-	5	74.42	26680-54-6		1-0-0 A/a LES	STEEL DRUM	L	C, I & V
292	98	PERKINS PRODUCTS, INC	PERCHEM 1330	1,488.42	BORIC ACID	5	74.42	10043-35-3		1-0-0 A/a LES	STEEL DRUM	L	C, I & V
293	98	PERKINS PRODUCTS, INC	PERCHEM 1330	1,488.42	EDTA TETRASODIUM SALT	5	74.42	64-02-8		1-0-0 A/a LES	STEEL DRUM	L	C, I & V
294	99	CHICAGO MANUFACTURING AND DISTRIBUTION COMPANY	EXTREME PRESSURE OIL	39.48	PETROLEUM HYDROCARBON	66.24	26.15	64742-49-0		2-1-0 A/a LES	POLY BOTTLE	L	F & N
295	99	CHICAGO MANUFACTURING AND DISTRIBUTION COMPANY	EXTREME PRESSURE OIL	39.48	POLY(OXY-1,2-ETHANEDIYL), ALPHA-(DINONYLPHENYL)-OMEGA-HYDROXY-,PHOSPHATE	21.69	8.56	39464-64-7		2-1-0 A/a LES	POLY BOTTLE	L	F & N
296	99	CHICAGO MANUFACTURING AND DISTRIBUTION COMPANY	EXTREME PRESSURE OIL	39.48	DISTILLATES, PETROLEUM, HYDROTREATED HEAVY NAPHTHENIC	12	4.74	64742-52-5		2-1-0 A/a LES	POLY BOTTLE	L	F & N
297	99	CHICAGO MANUFACTURING AND DISTRIBUTION COMPANY	EXTREME PRESSURE OIL	39.48	FRAGRANCE MIXTURE	0.02	0.01			2-1-0 A/a LES	POLY BOTTLE	L	F & N
298	100	CHICAGO MANUFACTURING AND DISTRIBUTION COMPANY	EXTREME PRESSURE LUBE #3	39.71	PETROLEUM HYDROCARBON	58.99	23.42	64742-49-0		2-1-0 A/a LES	POLY BOTTLE	L	F & N

HAZARD COMMUNICATION CHEMICAL INVENTORY LIST
COPYRIGHT 2000, VANGUARD ENVIRONMENTAL, INC.
TULSA, OK.

C= Carcinogen
T= Teratogen
M= Mutagen
S+__= Suspect

F= Flammable
P= Pressure
R= Reactive
A= Acute
CH= Chronic

G= Gene
L= Lung
O= Organs
E= Eyes
S= Skin

S= Solid
L= Liquid
G= Gas
SP= Solid Particle
PST= Paste

OSHA HAZCOM: ARROW GEAR COMPANY

CHEM ID	MSDS NO.	MANUFACTURER NAME	PRODUCT NAME	MAXIMUM WEIGHT	CHEMICAL NAME	%	CHEMICAL WEIGHT	CAS NUMBER	CARCINOGEN MUTAGEN TERATOGEN	NFPA 704/HMIS/ FPRACH/GLOES	CONTAINER	PHYSICAL STATE	AREA
299	100	CHICAGO MANUFACTURING AND DISTRIBUTION COMPANY	EXTREME PRESSURE LUBE #3	39.71	POLY(OXY-1,2-ETHANEDIYL) ALPHA-(DINONYLPHENYL)-OMEGA-HYDROXY-,PHOSPHATE	21.69	8.61	39464-64-7		2-1-0 A@LES	POLY BOTTLE	L	E & N
300	100	CHICAGO MANUFACTURING AND DISTRIBUTION COMPANY	EXTREME PRESSURE LUBE #3	39.71	MICROCRYSTALLINE WAX	14.3	5.68	63231-60-7		2-1-0 A@LES	POLY BOTTLE	L	E & N
301	100	CHICAGO MANUFACTURING AND DISTRIBUTION COMPANY	EXTREME PRESSURE LUBE #3	39.71	RESIN ACIDS AND ROSIN ACIDS, HYDROGENATED, ESTERS WITH GLYCEROL	5	1.99	65997-13-9		2-1-0 A@LES	POLY BOTTLE	L	E & N
302	100	CHICAGO MANUFACTURING AND DISTRIBUTION COMPANY	EXTREME PRESSURE LUBE #3	39.71	FRAGRANCE MIXTURE	0.02	0.01			2-1-0 A@LES	POLY BOTTLE	L	E & N
303	101	SUNNEN PRODUCTS COMPANY	SUNNEN HONING STONES	100.00	ALUMINUM OXIDE	55	55.00	1344-28-1		1-0-0 A@LES	BOX	S	E P & R
304	101	SUNNEN PRODUCTS COMPANY	SUNNEN HONING STONES	100.00	SILICON CARBIDE	55	55.00	409-21-2		1-0-0 A@LES	BOX	S	E P & R
305	101	SUNNEN PRODUCTS COMPANY	SUNNEN HONING STONES	100.00	FIBROUS GLASS	10	10.00	6599-71-7		1-0-0 A@LES	BOX	S	E P & R
306	101	SUNNEN PRODUCTS COMPANY	SUNNEN HONING STONES	100.00	ALUMINUM	5	5.00	7429-90-5		1-0-0 A@LES	BOX	S	E P & R
307	101	SUNNEN PRODUCTS COMPANY	SUNNEN HONING STONES	100.00	BORON OXIDE	5	5.00	1303-86-2		1-0-0 A@LES	BOX	S	E P & R
308	101	SUNNEN PRODUCTS COMPANY	SUNNEN HONING STONES	100.00	CALCIUM OXIDE	5	5.00	1305-78-8		1-0-0 A@LES	BOX	S	E P & R
309	101	SUNNEN PRODUCTS COMPANY	SUNNEN HONING STONES	100.00	COPPER	5	5.00	7440-50-8		1-0-0 A@LES	BOX	S	E P & R
310	101	SUNNEN PRODUCTS COMPANY	SUNNEN HONING STONES	100.00	FLUORIDE MIXTURE	5	5.00			1-0-0 A@LES	BOX	S	E P & R
311	101	SUNNEN PRODUCTS COMPANY	SUNNEN HONING STONES	100.00	FUSED SILICA	5	5.00	60676-86-0		1-0-0 A@LES	BOX	S	E P & R
312	101	SUNNEN PRODUCTS COMPANY	SUNNEN HONING STONES	100.00	TIN	5	5.00	7440-31-5		1-0-0 A@LES	BOX	S	E P & R
313	101	SUNNEN PRODUCTS COMPANY	SUNNEN HONING STONES	100.00	MANGANESE	1	1.00	7439-96-5		1-0-0 A@LES	BOX	S	E P & R
314	102	MAYWOOD COMPANY	MAYWOOD ACRYL LACQUER THINNER	136.96	TOLUENE	25	34.24	108-88-3	T	2-3-0 F/A/CH@LOES	STEEL DRUM	L	E K & N
315	102	MAYWOOD COMPANY	MAYWOOD ACRYL LACQUER THINNER	136.96	ACETONE	21	28.76	67-64-1	SC	2-3-0 F/A/CH@LOES	STEEL DRUM	L	E K & N
316	102	MAYWOOD COMPANY	MAYWOOD ACRYL LACQUER THINNER	136.96	METHYL ALCOHOL	21	28.76	67-56-1		2-3-0 F/A/CH@LOES	STEEL DRUM	L	E K & N
317	102	MAYWOOD COMPANY	MAYWOOD ACRYL LACQUER THINNER	136.96	METHYL ETHYL KETONE	9	12.33	78-93-3		2-3-0 F/A/CH@LOES	STEEL DRUM	L	E K & N
318	102	MAYWOOD COMPANY	MAYWOOD ACRYL LACQUER THINNER	136.96	LIGHT ALIPHATIC SOLVENT NAPHTHA	7	9.59	64742-89-8		2-3-0 F/A/CH@LOES	STEEL DRUM	L	E K & N

HAZARD COMMUNICATION CHEMICAL INVENTORY LIST
COPYRIGHT 2000, VANGUARD ENVIRONMENTAL INC.
TULSA, OK

C= Carcinogen
T= Teratogen
M= Mutagen
S+__= Suspect

F= Flammable
P= Pressure
R= Reactive
A= Acute
CH= Chronic

G= Gene
L= Lung
O= Organs
E= Eyes
S= Skin

S= Solid
L= Liquid
G= Gas
SP= Solid Particle
PST= Paste

OSHA HAZCOM: ARROW GEAR COMPANY

CHEM ID	MSDS NO.	MANUFACTURER NAME	PRODUCT NAME	MAXIMUM WEIGHT	CHEMICAL NAME	%	CHEMICAL WEIGHT	CAS NUMBER	CARCINOGEN MUTAGEN TERATOGEN	NFPA 704/HMIS/ FPRACH/GLOES	CONTAINER	PHYSICAL STATE	AREA
319	102	MAYWOOD COMPANY	MAYWOOD ACRYL LACQUER THINNER	136.96	ISOBUTYL ACETATE	6	8.22	110-19-0		2-3-0 F A CH@LOES	STEEL DRUM	L	F K & N
320	102	MAYWOOD COMPANY	MAYWOOD ACRYL LACQUER THINNER	136.96	BUTYL ACETATE	5	6.85	123-86-4		2-3-0 F A CH@LOES	STEEL DRUM	L	F K & N
321	102	MAYWOOD COMPANY	MAYWOOD ACRYL LACQUER THINNER	136.96	ETHYL-3-ETHOXYPROPIONATE	3	4.11	763-69-9		2-3-0 F A CH@LOES	STEEL DRUM	L	F K & N
322	102	MAYWOOD COMPANY	MAYWOOD ACRYL LACQUER THINNER	136.96	XYLENE	2	2.74	1330-20-7		2-3-0 F A CH@LOES	STEEL DRUM	L	F K & N
323	103	ULTRACHEM, INC	ASSEMBLY FLUID #1	5.00	DISTILLATES, PETROLEUM, SOLVENT-DEWAXED HEAVY PARAFFINIC	60	3.00	64742-65-0			POLY JUG	L	S
324	103	ULTRACHEM, INC	ASSEMBLY FLUID #1	5.00	HYDROTREATED HEAVY PARAFFINIC DISTILLATE	60	3.00	64742-54-7			POLY JUG	L	S
325	104	ARCONIUM SPECIALTY ALLOYS	OSTALLOY 158	30.00	LEAD	27.3	8.19	7439-92-1	SC	3-0-1 A/CH@LES	RAW	S	Q
326	104	ARCONIUM SPECIALTY ALLOYS	OSTALLOY 158	30.00	TIN	13.1	3.93	7440-31-5		3-0-1 A/CH@LES	RAW	S	Q
327	104	ARCONIUM SPECIALTY ALLOYS	OSTALLOY 158	30.00	CADMIUM	10.1	3.03	7440-43-9	SC	3-0-1 A/CH@LES	RAW	S	Q
328	105	HANDY & HARMAN	SILVER-COPPER-CADMIUM-ZINC BRAZING ALLOYS	10.00	SILVER	50	5.00	7440-22-4		A/CH@LES	RAW	S	F
329	105	HANDY & HARMAN	SILVER-COPPER-CADMIUM-ZINC BRAZING ALLOYS	10.00	COPPER	45	4.50	7440-50-8		A/CH@LES	RAW	S	F
330	105	HANDY & HARMAN	SILVER-COPPER-CADMIUM-ZINC BRAZING ALLOYS	10.00	ZINC	30	3.00	7440-66-6		A/CH@LES	RAW	S	F
331	105	HANDY & HARMAN	SILVER-COPPER-CADMIUM-ZINC BRAZING ALLOYS	10.00	CADMIUM	24	2.40	7440-43-9	SC	A/CH@LES	RAW	S	F
332	106	INDEPENDENT INK, INC	73X WHITE MARKING INK	10.86	ISOPROPYL ALCOHOL	25	2.71	67-63-0		F/A@LES	CAN	L	A
333	106	INDEPENDENT INK, INC	73X WHITE MARKING INK	10.86	PROPRIETARY MIXTURE	22	2.39			F/A@LES	CAN	L	A
334	106	INDEPENDENT INK, INC	73X WHITE MARKING INK	10.86	ETHYLENE GLYCOL	9	0.98	107-21-1		F/A@LES	CAN	L	A
335	107	INDEPENDENT INK, INC	73X BLACK MARKING INK	8.35	ISOPROPYL ALCOHOL	33	2.76	67-63-0		F/A@LES	CAN	L	B
336	107	INDEPENDENT INK, INC	73X BLACK MARKING INK	8.35	PROPRIETARY MIXTURE	31	2.59			F/A@LES	CAN	L	B
337	107	INDEPENDENT INK, INC	73X BLACK MARKING INK	8.35	ETHYLENE GLYCOL	13	1.09	107-21-1		F/A@LES	CAN	L	B
338	108	ELF ATOCHEM NORTH AMERICA	TURCO VITRO-KLENE	670.00	SODIUM METASILICATE	60	402.00	6834-92-0		3-0-0 A@LES	STEEL DRUM	SP	C

COPYRIGHT 2000 VANGUARD ENVIRONMENTAL INC.
TULSA, OK

C= Carcinogen
T= Teratogen
M= Mutagen
S+__= Suspect

F= Flammable
P= Pressure
R= Reactive
A= Acute
CH= Chronic

G= Gene
L= Lung
O= Organs
E= Eyes
S= Skin

S= Solid
L= Liquid
G= Gas
SP= Solid Particle
PST= Paste

OSHA HAZCOM: ARROW GEAR COMPANY

CHEM ID	MSDS NO.	MANUFACTURER NAME	PRODUCT NAME	MAXIMUM WEIGHT	CHEMICAL NAME	%	CHEMICAL WEIGHT	CAS NUMBER	CARCINOGEN MUTAGEN TERATOGEN	NFPA 704/HMIS/ FPRACH/GLOES	CONTAINER	PHYSICAL STATE	AREA
339	108	ELEATOCHEM NORTH AMERICA	TURCO VERO-KLENE	670.00	SODIUM HYDROXIDE	30	201.00	1310-73-2		3-0-0 A/@LES	STEEL DRUM	SP	C
340	108	ELEATOCHEM NORTH AMERICA	TURCO VERO-KLENE	670.00	PENTASODIUM TRIPHOSPHATE	15	100.50	7758-29-4		3-0-0 A/@LES	STEEL DRUM	SP	C
341	109	HOUGHTON INTERNATIONAL, INC	HOUGHTO-QUENCH K	2,229.72	DISTILLATES HYDROTREATED LIGHT PARAFFIN	60	1,337.83	64742-55-8		0-1-0 A/@LES	AST	L	G
342	109	HOUGHTON INTERNATIONAL, INC	HOUGHTO-QUENCH K	2,229.72	DISTILLATES, PETROLEUM, STRAIGHT-RUN MIDDLE	60	1,337.83	64741-44-2		0-1-0 A/@LES	AST	L	G
343	109	HOUGHTON INTERNATIONAL, INC	HOUGHTO QUENCH K	2,229.72	SEVERELY SOLVENT REFINED LIGHT PARAFFINIC DISTILLATE	60	1,337.83	64741-89-5		0-1-0 A/@LES	AST	L	G
344	110	RANDOLPH PRODUCTS COMPANY	AMS-3100 YELLOW ZINC CHROMATE PRIMER REV G PRIMER Z/C	38.80	ZINC POTASSIUM CHROMATE PIGMENT	30	11.64	11103-86-9		3-3-0 F/A/CH/@LOES	CAN	L	S
345	110	RANDOLPH PRODUCTS COMPANY	AMS-3100 YELLOW ZINC CHROMATE PRIMER REV G PRIMER Z/C	38.80	LIGHT ALIPHATIC SOLVENT NAPHTHA	20	7.76	64742-89-8		3-3-0 F/A/CH/@LOES	CAN	L	S
346	110	RANDOLPH PRODUCTS COMPANY	AMS-3100 YELLOW ZINC CHROMATE PRIMER REV G PRIMER Z/C	38.80	BUTYL ALCOHOL	15	5.82	71-36-3		3-3-0 F/A/CH/@LOES	CAN	L	S
347	110	RANDOLPH PRODUCTS COMPANY	AMS-3100 YELLOW ZINC CHROMATE PRIMER REV G PRIMER Z/C	38.80	ISOBUTYL ALCOHOL	10	3.88	78-83-1		3-3-0 F/A/CH/@LOES	CAN	L	S
348	110	RANDOLPH PRODUCTS COMPANY	AMS-3100-YELLOW ZINC CHROMATE PRIMER REV G PRIMER Z/C	38.80	HEPTANE	5	1.94	142-82-5		3-3-0 F/A/CH/@LOES	CAN	L	S
349	110	RANDOLPH PRODUCTS COMPANY	AMS-3100 YELLOW ZINC CHROMATE PRIMER REV G PRIMER Z/C	38.80	TOLUENE	5	1.94	108-88-3	T	3-3-0 F/A/CH/@LOES	CAN	L	S
350	110	RANDOLPH PRODUCTS COMPANY	AMS-3100-YELLOW ZINC CHROMATE PRIMER REV G PRIMER Z/C	38.80	XYLENE	5	1.94	1330-20-7		3-3-0 F/A/CH/@LOES	CAN	L	S
351	111	DEFT, INC	CAT, BMS 10-11U, TY I, CL A, GRD E	18.81	NITROETHANE	30	5.64	79-24-3		3-3-1 F/A/@LES	CAN	L	S
352	112	POTTERS INDUSTRIES, INC	BALLOTINI IMPACT BEADS	1,000.00	ALUMINUM OXIDE	100	1,000.00	1344-28-1		A@LE	BAG	SP	H
353	112	POTTERS INDUSTRIES, INC	BALLOTINI IMPACT BEADS	1,000.00	AMORPHOUS SODIUM / CALCIUM BOROSILICATE	100	1,000.00	65997-17-3	SC	A@LE	BAG	SP	H
354	112	POTTERS INDUSTRIES, INC	BALLOTINI IMPACT BEADS	1,000.00	CALCIUM OXIDE	100	1,000.00	1305-78-8		A/@LE	BAG	SP	H
355	112	POTTERS INDUSTRIES, INC	BALLOTINI IMPACT BEADS	1,000.00	IRON OXIDE	100	1,000.00	1309-37-1		A/@LE	BAG	SP	H
356	112	POTTERS INDUSTRIES, INC	BALLOTINI IMPACT BEADS	1,000.00	MAGNESIUM OXIDE	100	1,000.00	1309-48-4		A/@LE	BAG	SP	H
357	112	POTTERS INDUSTRIES, INC	BALLOTINI IMPACT BEADS	1,000.00	POTASSIUM OXIDE	100	1,000.00	12136-45-7		A/@LE	BAG	SP	H
358	112	POTTERS INDUSTRIES, INC	BALLOTINI IMPACT BEADS	1,000.00	SILICON DIOXIDE	100	1,000.00	7631-86-9	SC	A/@LE	BAG	SP	H

HAZARD COMMUNICATION CHEMICAL INVENTORY LIST
COPYRIGHT 2000, VANGUARD ENVIRONMENTAL, INC.
TULSA, OK

C= Carcinogen
T= Teratogen
M= Mutagen
S+__= Suspect

F= Flammable
P= Pressure
R= Reactive
A= Acute
CH= Chronic

G= Gene
L= Lung
O= Organs
E= Eyes
S= Skin

S= Solid
L= Liquid
G= Gas
SP= Solid Particle
PST= Paste

OSHA HAZCOM: ARROW GEAR COMPANY

CHEM ID	MSDS NO.	MANUFACTURER NAME	PRODUCT NAME	MAXIMUM WEIGHT	CHEMICAL NAME	%	CHEMICAL WEIGHT	CAS NUMBER	CARCINOGEN MUTAGEN TERATOGEN	NFPA 704/HMIS/ FPRACH/GLOES	CONTAINER	PHYSICAL STATE	AREA
359	112	POTTERS INDUSTRIES, INC	BALLOTINI IMPACT BEADS	1,000.00	SODIUM OXIDE	100	1,000.00	1313-59-3		A@LE	BAG	SP	H
360	113	SINCLAIR MINERAL & CHEMICAL COMPANY	EXOLON, FASTBLAST	1,000.00	ALUMINUM OXIDE	100	1,000.00	1344-28-1		A@LE	BAG	SP	H
361	113	SINCLAIR MINERAL & CHEMICAL COMPANY	EXOLON, FASTBLAST	1,000.00	TITANIUM DIOXIDE	4	40.00	13463-67-7	C	A@LE	BAG	SP	H
362	114	ITW DEVCON	DEVCON PLASTIC STEEL LIQUID (B) RESIN	23.38	BISPHENOL A EPICHLOROHYDRIN POLYMER	35	8.18	25068-38-6		2-1-1 A@S	CAN	PST	F
363	115	HOUGHTON INTERNATIONAL, INC	CERFA KLEEN 5390	523.61	CLEANING MIXTURE	100	523.61			0-0-0 A@LES	STEEL DRUM	L	G
364	116	CHEMTOOL, INC	CT 410-AG	423.02	DISTILLATES, PETROLEUM, HYDROTREATED HEAVY NAPHTHENIC	100	423.02	64742-52-5		1-1-0	STEEL DRUM	L	O & P
365	117	NFO TECHNOLOGIES, INC	AIRLINE 10W/NR	38.00	DISTILLATES, PETROLEUM, HYDROTREATED HEAVY NAPHTHENIC	100	38.00	64742-52-5		1-1-0 A@LS	POLY DRUM	L	E & F
366	117	NFO TECHNOLOGIES, INC	AIRLINE 10W/NR	38.00	DISTILLATES, PETROLEUM, HYDROTREATED LIGHT NAPHTHENIC	100	38.00	64742-53-6		1-1-0 A@LS	POLY DRUM	L	E & F
367	118	MOBIL OIL CORPORATION	MOBIL ALMO 525	10.00	DISTILLATES, PETROLEUM, SOLVENT-DEWAXED HEAVY PARAFFINIC	95	9.50	64742-65-0		0-1-0	POLY JUG	L	B & F
368	118	MOBIL OIL CORPORATION	MOBIL ALMO 525	10.00	HYDROTREATED HEAVY PARAFFINIC DISTILLATE	95	9.50	64742-54-7		0-1-0	POLY JUG	L	B & F
369	118	MOBIL OIL CORPORATION	MOBIL ALMO 525	10.00	PARAFFIN WAXES AND HYDROCARBON WAXES, CHLORO	2.03	0.20	63449-39-8	SC	0-1-0	POLY JUG	L	B & F
370	118	MOBIL OIL CORPORATION	MOBIL ALMO 525	10.00	CHLORINE	0.9	0.09	7782-50-5		0-1-0	POLY JUG	L	B & E
371	118	MOBIL OIL CORPORATION	MOBIL ALMO 525	10.00	ZINC DIALKYLDITHIOPHOSPHATE	0.69	0.07	68649-42-3		0-1-0	POLY JUG	L	B & E
372	118	MOBIL OIL CORPORATION	MOBIL ALMO 525	10.00	ZINC	0.09	0.01	7440-66-6		0-1-0	POLY JUG	L	B & F
373	119	ALLIED-KELITE	ISOPREP® 44	250.53	SODIUM CARBONATE	10	25.05	497-19-8		2-0-1 A@LES	FIBER DRUM	SP	C
374	119	ALLIED-KELITE	ISOPREP® 44	250.53	SODIUM METASILICATE	10	25.05	6834-92-0		2-0-1 A@LES	FIBER DRUM	SP	C
375	121	MACDERMID, INC	ARP 2	20.00	SURFACTANT MIXTURE	100	20.00			1-0-0 A@LES	BOX	L	G
376	124	MOBIL OIL CORPORATION	MOBIL VACTRA OIL NO. 3	404.19	PETROLEUM HYDROCARBON	100	404.19	64742-49-0		0-1-0	STEEL DRUM	L	J
377	125	MOBIL OIL CORPORATION	MOBIL DTE 11M	400.05	ZINC DIALKYLDITHIOPHOSPHATE	0.66	2.64	68649-42-3		0-1-0	STEEL DRUM	L	J
378	125	MOBIL OIL CORPORATION	MOBIL DTE 11M	400.05	ZINC ALKENYL CARBOXAMIDE MIXTURE	0.64	2.56			0-1-0	STEEL DRUM	L	J

HAZARD COMMUNICATION CHEMICAL INVENTORY LIST
COPYRIGHT 2000, VANGUARD ENVIRONMENTAL, INC.
TULSA, OK

C= Carcinogen, T= Teratogen, M= Mutagen, S+__= Suspect
F= Flammable, P= Pressure, R= Reactive, A= Acute, CH= Chronic
G= Gene, L= Lung, O= Organs, E= Eyes, S= Skin
S= Solid, L= Liquid, G= Gas, SP= Solid Particle, PST= Paste

OSHA HAZCOM ARROW GEAR COMPANY

CHEM ID	MSDS NO.	MANUFACTURER NAME	PRODUCT NAME	MAXIMUM WEIGHT	CHEMICAL NAME	%	CHEMICAL WEIGHT	CAS NUMBER	CARCINOGEN MUTAGEN TERATOGEN	NFPA 704/HMIS/ FPRACH/GLOES	CONTAINER	PHYSICAL STATE	AREA
379	125	MOBIL OIL CORPORATION	MOBIL DTE 11M	400.05	ZINC	0.1	0.40	7440-66-6		0-1-0	STEEL DRUM	L	I
380	126	MOBIL OIL CORPORATION	MOBILMET ALPHA	14,447.23	SEVERELY SOLVENT REFINED LIGHT PARAFFINIC DISTILLATE	50	7,223.62	61741-89-5		0-1-0	STEEL DRUM	L	I
381	126	MOBIL OIL CORPORATION	MOBILMET ALPHA	14,447.23	LARD, OIL, ME ESTERS, SULFURIZED	15	2,167.08	68440-40-4		0-1-0	STEEL DRUM	L	I
382	127	MOBIL OIL CORPORATION	MOBIL VELOCITE OIL NO 10	1,436.17	TOLUENE	0.01	0.14	108-88-3	T	0-1-0	STEEL DRUM	L	I
383	128	MOBIL OIL CORPORATION	MOBIL VACOULINE OIL 1409	1,484.81	ADDITIVES MIXTURE	100	1,484.81			0-1-0	STEEL DRUM	L	I
384	128	MOBIL OIL CORPORATION	MOBIL VACOULINE OIL 1409	1,484.81	PETROLEUM HYDROCARBON	100	1,484.81	64742-49-0		0-1-0	STEEL DRUM	L	I
385	129	MOBIL OIL CORPORATION	MOBIL VACTRA OIL NO 4	1,489.82	ADDITIVES MIXTURE	100	1,489.82			0-1-0	STEEL DRUM	L	I
386	129	MOBIL OIL CORPORATION	MOBIL VACTRA OIL NO 4	1,489.82	PETROLEUM HYDROCARBON	100	1,489.82	64742-49-0		0-1-0	STEEL DRUM	L	I
387	130	MOBIL OIL CORPORATION	MOBIL VACTRA OIL NO 2	1,468.11	ADDITIVES MIXTURE	100	1,468.11			1-1-0	STEEL DRUM	L	I
388	130	MOBIL OIL CORPORATION	MOBIL VACTRA OIL NO 2	1,468.11	PETROLEUM HYDROCARBON	100	1,468.11	64742-49-0		1-1-0	STEEL DRUM	L	I
389	131	MOBIL OIL CORPORATION	MOBIL DTE OIL LIGHT	399.60	ZINC DIALKYLDITHIOPHOSPHATE	0.07	0.28	68649-42-3		0-1-0	STEEL DRUM	L	I
390	131	MOBIL OIL CORPORATION	MOBIL DTE OIL LIGHT	399.60	PHOSPHORIC ACID, TRIS(METHYLPHENYL) ESTER	0.05	0.20	1330-78-5		0-1-0	STEEL DRUM	L	I
391	132	MOBIL OIL CORPORATION	MOBIL DTE 26	22,297.17	ZINC DIALKYLDITHIOPHOSPHATE	0.67	149.39	68649-42-3		0-1-0	STEEL DRUM	L	I
392	132	MOBIL OIL CORPORATION	MOBIL DTE 26	22,297.17	ZINC	0.1	22.30	7440-66-6		0-1-0	STEEL DRUM	L	I
393	133	MOBIL OIL CORPORATION	MOBIL DTE 25	7,390.64	ZINC DIALKYLDITHIOPHOSPHATE	0.67	49.52	68649-42-3		0-1-0	STEEL DRUM	L	I
394	133	MOBIL OIL CORPORATION	MOBIL DTE 25	7,390.64	ZINC	0.1	7.39	7440-66-6		0-1-0	STEEL DRUM	L	I
395	134	ASHLAND CHEMICAL COMPANY	TECTYL 275	408.78	FLASH NAPHTHA	42	171.69	64742-88-7		1-2-0 F/A@LES	STEEL DRUM	L	S
396	134	ASHLAND CHEMICAL COMPANY	TECTYL 275	408.78	DISTILLATES, PETROLEUM, HYDROTREATED HEAVY NAPHTHENIC	40	163.51	64742-52-5		1-2-0 F/A@LES	STEEL DRUM	L	S
397	134	ASHLAND CHEMICAL COMPANY	TECTYL 275	408.78	2-BUTOXYETHANOL	20	81.76	111-76-2		1-2-0 F/A@LES	STEEL DRUM	L	S
398	135	NEW CASTLE REFRACTORIES COMPANY	SILICON CARBIDE FINES, FRIT, OR CLAY BONDED	100.00	SILICON CARBIDE	91	91.00	409-21-2		A@LES	RAW	S	G

HAZARD COMMUNICATION CHEMICAL INVENTORY LIST
COPYRIGHT 2000, VANGUARD ENVIRONMENTAL, INC.
TULSA, OK

C= Carcinogen
T= Teratogen
M= Mutagen
S+__= Suspect

F= Flammable
P= Pressure,
R= Reactive
A= Acute
CH= Chronic

G= Gene
L= Lung
O= Organs
E= Eyes
S= Skin

S= Solid
L= Liquid
G= Gas
SP= Solid Particle
PST= Paste

OSHA HAZCOM: ARROW GEAR COMPANY

CHEM ID	MSDS NO.	MANUFACTURER NAME	PRODUCT NAME	MAXIMUM WEIGHT	CHEMICAL NAME	%	CHEMICAL WEIGHT	CAS NUMBER	CARCINOGEN MUTAGEN TERATOGEN	NFPA 704/HMIS/ FPRACH/GLOES	CONTAINER	PHYSICAL STATE	AREA
399	135	NEW CASTLE REFRACTORIES COMPANY	SILICON CARBIDE FINES, FRIT OR CLAY BONDED	100 00	SILICON DIOXIDE	15	15 00	7631-86-9	SC	A@LES	RAW	S	G
400	135	NEW CASTLE REFRACTORIES COMPANY	SILICON CARBIDE FINES, FRIT OR CLAY BONDED	100 00	ALUMINUM OXIDE	12	12 00	1344-28-1		A@LES	RAW	S	G
401	136	JAYFLEX DTDP	#89 GEAR MARKING COMPOUND	5 00	DTDP SOLVENT MIXTURE	50	2 50			A@LES	CAN	PST	LU & V
402	136	JAYFLEX DTDP	#89 GEAR MARKING COMPOUND	5 00	PIGMENT MIXTURE	33	1 65			A@LES	CAN	PST	LU & V
403	137	MACDERMID, INC	METEX FB COPPER STRIPPER	6,459 50	SODIUM CHLORITE	10	645 95	7758-19-2		2-1-1 A@LES	POLY DRUM	L	C
404	139	FEL-PRO, INC	CLOVER SILICON CARBIDE GREASE MIX LAPPING COMPOUND	1,300 00	SILICON CARBIDE	40	520 00	409-21-2		0-1-0 A@E	STEEL & POLY DRUM	PST	V
405	139	FEL-PRO, INC	CLOVER SILICON CARBIDE GREASE MIX LAPPING COMPOUND	1,300 00	CARBON BLACK	1	13.00	1333-86-4	C	0-1-0 A@E	STEEL & POLY DRUM	PST	V
406	139	FEL-PRO, INC	CLOVER SILICON CARBIDE GREASE MIX LAPPING COMPOUND	1,300 00	SILICON DIOXIDE	1	13 00	7631-86-9	SC	0-1-0 A@E	STEEL & POLY DRUM	PST	V
407	140	THE STUTZ COMPANY	SC-120, 180, 240, 320, 400-AGHV LAPPING COMPOUNDS	3,000 00	DISTILLATES, PETROLEUM, HYDROTREATED LIGHT NAPHTHENIC	60	1,800 00	64742-53-6		A@LES	STEEL & POLY DRUM	PST	V
408	140	THE STUTZ COMPANY	SC-120, 180, 240, 320, 400-AGHV LAPPING COMPOUNDS	3,000 00	SILICON CARBIDE	40	1,200 00	409-21-2		A@LES	STEEL & POLY DRUM	PST	V
409	141	DOW CORNING CORPORATION	COW CORNING 2 MOLY POWDER	40 08	MOLYBDENUM DISULFIDE	99	39.68	1317-33-5			GLASS BOTTLE	SP	P
410	141	DOW CORNING CORPORATION	COW CORNING 2 MOLY POWDER	40 08	CRYSTALLINE SILICA	0.3	0.12	14808-60-7	C		GLASS BOTTLE	SP	P
411	142	CHAS F THOMMEDIEU & SONS	EMERY CAKE BUFFING COMPOSITION	36 00	ALUMINUM OXIDE	75	27.00	1344-28-1		A@LE	BOX	S	B
412	143	HANGSTERFER'S LABORATORIES, INC	HANGSTERFER'S ALDRAW J-1	101 88	PARAFFIN WAXES AND HYDROCARBON WAXES, CHLORO	100	101.88	63449-39-8	SC	1-1-0 A@E	STEEL DRUM	L	V
413	144	MOBIL OIL CORPORATION	MOBIL VELOCITE OIL NO 3	668 08	DISTILLATES, PETROLEUM, SWEETENED MIDDLE	65	434.25	64741-86-2		0-2-0 F/CH@S	STEEL DRUM	L	J
414	144	MOBIL OIL CORPORATION	MOBIL VELOCITE OIL NO 3	668 08	DISTILLATES, PETROLEUM, SOLVENT-DEWAXED LIGHT PARAFFINIC	45	300 64	64742-56-9		0-2-0 F/CH@S	STEEL DRUM	L	J
415	145	MOBIL OIL CORPORATION	MOBIL VELOCITE OIL NO 6	1,407 98	DISTILLATES, PETROLEUM, SOLVENT-DEWAXED LIGHT PARAFFINIC	80	1,126.38	64742-56-9		0-1-0 CH@S	STEEL DRUM	L	J
416	146	MOBIL OIL CORPORATION	MOBILFLUID 424	148 65	ADDITIVES MIXTURE	100	148 65			0-1-0	POLY DRUM	L	J
417	146	MOBIL OIL CORPORATION	MOBILFLUID 424	148 65	MINERAL OIL MIXTURE	100	148 65			0-1-0	POLY DRUM	L	J
418	147	MOBIL OIL CORPORATION	MOBILGEAR 626	148 15	PHOSPHORIC ACID, TRIS(METHYLPHENYL) ESTER	0.04	0 06	1330-78-5		0-1-0	POLY DRUM	L	J

COPYRIGHT 2006 VANGUARD ENVIRONMENTAL INC.
TULSA, OK.

C= Carcinogen
T= Teratogen
M= Mutagen
S+__= Suspect

F= Flammable
P= Pressure
R= Reactive
A= Acute
CH= Chronic

G= Gene
L= Lung
O= Organs
E= Eyes
S= Skin

S= Solid
L= Liquid
G= Gas
SP= Solid Particle
PST= Paste

OSHAHAZCOM: ARROW GEAR COMPANY

CHEM ID	MSDS NO.	MANUFACTURER NAME	PRODUCT NAME	MAXIMUM WEIGHT	CHEMICAL NAME	%	CHEMICAL WEIGHT	CAS NUMBER	CARCINOGEN MUTAGEN TERATOGEN	NFPA 704/HMIS/ FPRACH/GLOES	CONTAINER	PHYSICAL STATE	AREA
419	148	MOBIL OIL CORPORATION	MOBILGEAR 629	148.65	PHOSPHORIC ACID, TRIS(METHYLPHENYL) ESTER	0.04	0.06	1330-78-5		0-1-0	POLY DRUM	L	1
420	149	MOBIL OIL CORPORATION	MOBILITH AW-2	100.00	LITHIUM HYDROXYSTEARATE	10	10.00	7620-77-1		0-1-0	STEEL DRUM	GEL	1
421	149	MOBIL OIL CORPORATION	MOBILITH AW-2	100.00	NONANEDIOIC ACID, DILITHIUM SALT	10	10.00	38900-29-7		0-1-0	STEEL DRUM	GEL	1
422	149	MOBIL OIL CORPORATION	MOBILITH AW-2	100.00	ZINC DIALKYLDITHIOPHOSPHATE	1.5	1.50	68649-42-3		0-1-0	STEEL DRUM	GEL	1
423	149	MOBIL OIL CORPORATION	MOBILITH AW-2	100.00	FATTY ACIDS, C16-22, LITHIUM SALTS	0.64	0.64	68783-36-8		0-1-0	STEEL DRUM	GEL	1
424	149	MOBIL OIL CORPORATION	MOBILITH AW-2	100.00	TRIPHENYL PHOSPHATE	0.3	0.30	115-86-6		0-1-0	STEEL DRUM	GEL	1
425	149	MOBIL OIL CORPORATION	MOBILITH AW-2	100.00	ZINC DINONYLNAPHTHALENE SULFONATE	0.2	0.20	28016-00-4		0-1-0	STEEL DRUM	GEL	1
426	149	MOBIL OIL CORPORATION	MOBILITH AW-2	100.00	ZINC	0.15	0.15	7440-66-6		0-1-0	STEEL DRUM	GEL	1
427	149	MOBIL OIL CORPORATION	MOBILITH AW-2	100.00	XYLENE	0.13	0.13	1330-20-7		0-1-0	STEEL DRUM	GEL	1
428	150	MOBIL OIL CORPORATION	MOBILSOL A	36.74	FATY ACID METHYL ESTER MIXTURE	100	36.74			0-1-0	POLY DRUM	L	1
429	151	MOBIL OIL CORPORATION	MOBILGEAR 632	149.98	PHOSPHORIC ACID, TRIS(METHYLPHENYL) ESTER	0.04	0.06	1330-78-5		0-1-0	POLY DRUM	L	1
430	152	MOBIL OIL CORPORATION	MOBILGREASE 28	50.00	PENTAERYTHRITOL	5	2.50	115-77-5		0-1-0	POLY DRUM	GEL	1
431	153	MOBIL OIL CORPORATION	MOBILITH SHC 460	20.00	LITHIUM HYDROXYSTEARATE	10.41	2.08	7620-77-1		0-1-0	TUBE	GEL	1
432	153	MOBIL OIL CORPORATION	MOBILITH SHC 460	20.00	HEXANEDIOIC ACID, MONOMETHYL ESTER, LITHIUM SALT	2.57	0.51	64601-11-2		0-1-0	TUBE	GEL	1
433	153	MOBIL OIL CORPORATION	MOBILITH SHC 460	20.00	FATTY ACIDS, C16-22, LITHIUM SALTS	1.29	0.26	68783-36-8		0-1-0	TUBE	GEL	1
434	153	MOBIL OIL CORPORATION	MOBILITH SHC 460	20.00	PENTANEDIOIC ACID, MONOMETHYL ESTER, LITHIUM SALT	0.36	0.07	64601-12-3		0-1-0	TUBE	GEL	1
435	153	MOBIL OIL CORPORATION	MOBILITH SHC 460	20.00	LITHIUM HYDROXIDE	0.09	0.02	1310-65-2		0-1-0	TUBE	GEL	1
436	154	MOBIL OIL CORPORATION	MOBILMET KAPPA CCF	1,481.47	SULFUR	100	1,481.47	7704-34-9		2-1-0	STEEL DRUM	L	1
437	155	MOBIL OIL CORPORATION	MOBILMET NU	14,764.57	CHLOROALKANES	1.9	280.53	61788-76-9		0-1-0	STEEL DRUM	L	1
438	155	MOBIL OIL CORPORATION	MOBILMET NU	14,764.57	CHLORINE	0.8	118.12	7782-50-5		0-1-0	STEEL DRUM	L	1

COPYRIGHT 2006 VANGUARD ENVIRONMENTAL, INC.
TULSA, OK.

C= Carcinogen
T= Teratogen
M= Mutagen
S+__= Suspect

F= Flammable
P= Pressure
R= Reactive
A= Acute
CH= Chronic

G= Gene
L= Lung
O= Organs
E= Eyes
S= Skin

S= Solid
L= Liquid
G= Gas
SP= Solid Particle
PST= Paste

OSHA HAZCOM: ARROW GEAR COMPANY

CHEM ID	MSDS NO.	MANUFACTURER NAME	PRODUCT NAME	MAXIMUM WEIGHT	CHEMICAL NAME	%	CHEMICAL WEIGHT	CAS NUMBER	CARCINOGEN MUTAGEN TERATOGEN	NFPA 704/HMIS/ FPRACH/GLOES	CONTAINER	PHYSICAL STATE	AREA
439	156	MOBIL OIL CORPORATION	MOBILMET UPSILON	14,196.70	SEVERELY SOLVENT REFINED LIGHT PARAFFINIC DISTILLATE	100	14,196.70	64741-89-5		0-1-0 CH@S	STEEL DRUM	L	J
440	157	MOBIL OIL CORPORATION	MOBILTEMP SHC 32	50.00	ACETONE	5	2.50	67-64-1	SC	0-1-0	CARTRIDGE	GEL	J
441	157	MOBIL OIL CORPORATION	MOBILTEMP SHC 32	50.00	PENTAERYTHRITOL	5	2.50	115-77-5		0-1-0	CARTRIDGE	GEL	J
442	158	MOBIL OIL CORPORATION	MOBILUBE HD 85W-140	150.32	ADDITIVES MIXTURE	100	150.32			0-1-0	POLY DRUM	L	J
443	158	MOBIL OIL CORPORATION	MOBILUBE HD 85W-140	150.32	PETROLEUM HYDROCARBON	100	150.32	64742-49-0		0-1-0	POLY DRUM	L	J
444	159	MOBIL OIL CORPORATION	MOBILUX EP 023	75.33	ZINC DIALKYLDITHIOPHOSPHATE	1.5	1.13	68649-42-3		0-1-0	POLY DRUM	GEL	J
445	159	MOBIL OIL CORPORATION	MOBILUX EP 023	75.33	CHLOROALKANES	1.42	1.07	61788-76-9		0-1-0	POLY DRUM	GEL	J
446	159	MOBIL OIL CORPORATION	MOBILUX EP 023	75.33	RESIN ACIDS AND ROSIN ACIDS, POLYMD., ZINC SALTS	1	0.75	70248-43-0		0-1-0	POLY DRUM	GEL	J
447	159	MOBIL OIL CORPORATION	MOBILUX EP 023	75.33	CHLORINE	0.63	0.47	7782-50-5		0-1-0	POLY DRUM	GEL	J
448	159	MOBIL OIL CORPORATION	MOBILUX EP 023	75.33	ZINC	0.22	0.17	7440-66-6		0-1-0	POLY DRUM	GEL	J
449	159	MOBIL OIL CORPORATION	MOBILUX EP 023	75.33	LITHIUM HYDROXIDE MONOHYDRATE	0.16	0.12	1310-66-3		0-1-0	POLY DRUM	GEL	J
450	160	MOBIL OIL CORPORATION	MOBILUX 2	77.00	DISTILLATES, PETROLEUM, HYDROTREATED HEAVY NAPHTHENIC	90	69.30	64742-52-5		0-1-0	POLY DRUM	GEL	J
451	160	MOBIL OIL CORPORATION	MOBILUX 2	77.00	DISTILLATES, PETROLEUM, HYDROTREATED LIGHT NAPHTHENIC	15	11.55	64742-53-6		0-1-0	POLY DRUM	GEL	J
452	160	MOBIL OIL CORPORATION	MOBILUX 2	77.00	LITHIUM HYDROXYSTEARATE	7.04	5.42	7620-77-1		0-1-0	POLY DRUM	GEL	J
453	160	MOBIL OIL CORPORATION	MOBILUX 2	77.00	FATTY ACIDS, C16-22, LITHIUM SALTS	0.87	0.67	68783-36-8		0-1-0	POLY DRUM	GEL	J
454	162	LPS LABORATORIES, INC	LPS 1 GREASELESS LUBRICANT	33.40	ALIPHATIC PETROLEUM DISTILLATES	80	26.72	64742-47-8		1-2-0 A@LES	STEEL DRUM	L	O
455	162	LPS LABORATORIES, INC	LPS 1 GREASELESS LUBRICANT	33.40	DISTILLATES, PETROLEUM, CHEMICALLY NEUTRALIZED MIDDLE	30	10.02	64742-30-9		1-2-0 A@LES	STEEL DRUM	L	O
456	162	LPS LABORATORIES, INC	LPS 1 GREASELESS LUBRICANT	33.40	CARBON DIOXIDE	3	1.00	124-38-9		1-2-0 A@LES	STEEL DRUM	L	O
457	163	LPS LABORATORIES, INC	LPS 2 INDUSTRIAL-STRENGTH LUBRICANT	35.07	ALIPHATIC PETROLEUM DISTILLATES	70	24.55	64742-47-8		1-2-0 A@LES	STEEL DRUM	L	O
458	163	LPS LABORATORIES, INC	LPS 2 INDUSTRIAL-STRENGTH LUBRICANT	35.07	DISTILLATES, PETROLEUM, HYDROTREATED LIGHT NAPHTHENIC	10	3.51	64742-53-6		1-2-0 A@LES	STEEL DRUM	L	O

COPYRIGHT 2000 VANGUARD ENVIRONMENTAL, INC.
TULSA, OK

C= Carcinogen
T= Teratogen
M= Mutagen
S+__= Suspect

P= Flammable
P= Pressure
R= Reactive
A= Acute
CH= Chronic

G= Gene
L= Lung
O= Organs
E= Eyes
S= Skin

S= Solid
L= Liquid
G= Gas
SP= Solid Particle
PST= Paste

OSHA HAZCOM - ARROW GEAR COMPANY

CHEM ID	MSDS NO.	MANUFACTURER'S NAME	PRODUCT NAME	MAXIMUM WEIGHT	CHEMICAL NAME	%	CHEMICAL WEIGHT	CAS NUMBER	CARCINOGEN MUTAGEN TERATOGEN	NFPA 704/HMIS/ FPRACH/GLOES	CONTAINER	PHYSICAL STATE	AREA
459	163	LPS LABORATORIES, INC	LPS 2 INDUSTRIAL - STRENGTH LUBRICANT	15.07	CARBON DIOXIDE	3	1.05	124-38-9		1-2-0 A/C LES	STEEL DRUM	L	O
460	164	LPS LABORATORIES, INC	LPS 3 HEAVY-DUTY RUST INHIBITOR	138.63	FLASH NAPHTHA	80	110.90	64742-88-7		1-2-0 F/A/C LES	STEEL DRUM	L	O
461	164	LPS LABORATORIES, INC	LPS 3 HEAVY-DUTY RUST INHIBITOR	138.63	DISTILLATES, PETROLEUM HYDROTREATED HEAVY NAPHTHENIC	15	20.79	64742-52-5		1-2-0 F/A/C LES	STEEL DRUM	L	O
462	164	LPS LABORATORIES, INC	LPS 3 HEAVY-DUTY RUST INHIBITOR	138.63	CARBON DIOXIDE	3	4.16	124-38-9		1-2-0 F/A/C LES	STEEL DRUM	L	O
463	164	LPS LABORATORIES, INC	LPS 3 HEAVY-DUTY RUST INHIBITOR	138.63	DIPROPYLENE GLYCOL METHYL ETHER	3	4.16	34590-94-8		1-2-0 F/A/C LES	STEEL DRUM	L	O
464	165	MOBIL OIL CORPORATION	MOBIL 600 W SUPER CYLINDER OIL	112.74	OILS, LARD	100	112.74	8016-28-2		0-1-0	STEEL DRUM	L	J
465	166	MOBIL OIL CORPORATION	MOBIL MULTI-PURPOSE ATF	2,204.66	DIPHENYLAMINE	1	22.05	122-39-4		0-1-0	STEEL DRUM	L	J
466	166	MOBIL OIL CORPORATION	MOBIL MULTI-PURPOSE ATF	2,204.66	TOLUENE	0.09	1.98	108-88-3	T	0-1-0	STEEL DRUM	L	J
467	167	MOBIL OIL CORPORATION	MOBIL SHC 632	144.81	TRIPHENYL PHOSPHATE	0.21	0.30	115-86-6		0-1-0	POLY DRUM	L	J
468	167	MOBIL OIL CORPORATION	MOBIL SHC 632	144.81	PHOSPHORIC ACID, TRIS(METHYLPHENYL) ESTER	0.06	0.09	1330-78-5		0-1-0	POLY DRUM	L	J
469	168	MOBIL OIL CORPORATION	MOBIL SHC 634	145.14	TRIPHENYL PHOSPHATE	0.21	0.30	115-86-6		0-1-0	STEEL DRUM	L	J
470	168	MOBIL OIL CORPORATION	MOBIL SHC 634	145.14	PHOSPHORIC ACID, TRIS(METHYLPHENYL) ESTER	0.06	0.09	1330-78-5		0-1-0	STEEL DRUM	L	J
471	170	VARIOUS	CARBON STEEL - HR & CR LEADED STEEL	10,600.00	IRON	99	10,494.00	7439-89-6		A/CH@LES	RAW	S	F & J
472	170	VARIOUS	CARBON STEEL - HR & CR LEADED STEEL	10,600.00	CARBON	2	212.00	7440-44-0		A/CH@LES	RAW	S	F & J
473	170	VARIOUS	CARBON STEEL - HR & CR LEADED STEEL	10,600.00	MANGANESE	2	212.00	7439-96-5		A/CH@LES	RAW	S	F & J
474	170	VARIOUS	CARBON STEEL - HR & CR LEADED STEEL	10,600.00	ALUMINUM	1	106.00	7429-90-5		A/CH@LES	RAW	S	F & J
475	170	VARIOUS	CARBON STEEL - HR & CR LEADED STEEL	10,600.00	BISMUTH	1	106.00	7440-69-9		A/CH@LES	RAW	S	F & J
476	170	VARIOUS	CARBON STEEL - HR & CR LEADED STEEL	10,600.00	LEAD	1	106.00	7439-92-1	SC	A/CH@LES	RAW	S	F & J
477	170	VARIOUS	CARBON STEEL - HR & CR LEADED STEEL	10,600.00	LEAD CARBON MIXTURE	1	106.00			A/CH@LES	RAW	S	F & J
478	170	VARIOUS	CARBON STEEL - HR & CR LEADED STEEL	10,600.00	NIOBIUM	1	106.00	7440-03-1		A/CH@LES	RAW	S	F & J

COPYRIGHT 2000, VANGUARD ENVIRONMENTAL, INC.
TULSA, OK

C= Carcinogen, T= Teratogen, M= Mutagen, S+__= Suspect
F= Flammable, P= Pressure, R= Reactive, A= Acute, CH= Chronic
G= Gene, L= Lung, O= Organs, E= Eyes, S= Skin
S= Solid, L= Liquid, G= Gas, SP= Solid Particle, PST= Paste

OSHA HAZCOM - ARROW GEAR COMPANY

CHEM ID	MSDS NO.	MANUFACTURER NAME	PRODUCT NAME	MAXIMUM WEIGHT	CHEMICAL NAME	%	CHEMICAL WEIGHT	CAS NUMBER	CARCINOGEN MUTAGEN TERATOGEN	NFPA 704/HMIS/ FPRACH/GLOES	CONTAINER	PHYSICAL STATE	AREA
479	170	VARIOUS	CARBON STEEL - HR & CR LEADED STEEL	10,600.00	PHOSPHORUS	1	106.00	7723-14-0		A/CH@LES	RAW	S	F & J
480	170	VARIOUS	CARBON STEEL - HR & CR LEADED STEEL	10,600.00	SILICON	1	106.00	7440-21-3		A/CH@LES	RAW	S	F & J
481	170	VARIOUS	CARBON STEEL - HR & CR LEADED STEEL	10,600.00	SULFUR	1	106.00	7704-34-9		A/CH@LES	RAW	S	F & J
482	170	VARIOUS	CARBON STEEL - HR & CR LEADED STEEL	10,600.00	VANADIUM	1	106.00	7440-62-2		A/CH@LES	RAW	S	F & J
483	171	BRUSH WELLMAN ENGINEERED MATERIALS	COPPER BERYLLIUM WROUGHT ALLOY	275.00	COPPER	99	272.25	7440-50-8		A/CH@LES	RAW	S	F & J
484	171	BRUSH WELLMAN ENGINEERED MATERIALS	COPPER BERYLLIUM WROUGHT ALLOY	275.00	COBALT	2.7	7.43	7440-48-4	C	A/CH@LES	RAW	S	F & J
485	171	BRUSH WELLMAN ENGINEERED MATERIALS	COPPER BERYLLIUM WROUGHT ALLOY	275.00	NICKEL	2.2	6.05	7440-02-0	SC	A/CH@LES	RAW	S	F & J
486	171	BRUSH WELLMAN ENGINEERED MATERIALS	COPPER BERYLLIUM WROUGHT ALLOY	275.00	BERYLLIUM	2	5.50	7440-41-7	SC	A/CH@LES	RAW	S	F & J
487	171	BRUSH WELLMAN ENGINEERED MATERIALS	COPPER BERYLLIUM WROUGHT ALLOY	275.00	ZIRCONIUM	0.3	0.83	7440-67-7		A/CH@LES	RAW	S	F & J
488	172	VARIOUS	ALUMINUM ALLOYS, ALUMINUM ALLOYS CONTAINING LEAD	7,200.00	ALUMINUM	99.7	7,178.40	7429-90-5		A/CH@LES	RAW	S	F & J
489	172	VARIOUS	ALUMINUM ALLOYS, ALUMINUM ALLOYS CONTAINING LEAD	7,200.00	COPPER	10	720.00	7440-50-8		A/CH@LES	RAW	S	F & J
490	172	VARIOUS	ALUMINUM ALLOYS, ALUMINUM ALLOYS CONTAINING LEAD	7,200.00	MAGNESIUM	10	720.00	7439-95-4		A/CH@LES	RAW	S	F & J
491	172	VARIOUS	ALUMINUM ALLOYS, ALUMINUM ALLOYS CONTAINING LEAD	7,200.00	ZINC	10	720.00	7440-66-6		A/CH@LES	RAW	S	F & J
492	172	VARIOUS	ALUMINUM ALLOYS, ALUMINUM ALLOYS CONTAINING LEAD	7,200.00	COBALT	2	144.00	7440-48-4	C	A/CH@LES	RAW	S	F & J
493	172	VARIOUS	ALUMINUM ALLOYS, ALUMINUM ALLOYS CONTAINING LEAD	7,200.00	IRON	2	144.00	7439-89-6		A/CH@LES	RAW	S	F & J
494	172	VARIOUS	ALUMINUM ALLOYS, ALUMINUM ALLOYS CONTAINING LEAD	7,200.00	MANGANESE	2	144.00	7439-96-5		A/CH@LES	RAW	S	F & J
495	172	VARIOUS	ALUMINUM ALLOYS, ALUMINUM ALLOYS CONTAINING LEAD	7,200.00	SILICON	2	144.00	7440-21-3		A/CH@LES	RAW	S	F & J
496	172	VARIOUS	ALUMINUM ALLOYS, ALUMINUM ALLOYS CONTAINING LEAD	7,200.00	TIN	2	144.00	7440-31-5		A/CH@LES	RAW	S	F & J
497	172	VARIOUS	ALUMINUM ALLOYS, ALUMINUM ALLOYS CONTAINING LEAD	7,200.00	LEAD	1	72.00	7439-92-1	SC	A/CH@LES	RAW	S	F & J
498	172	VARIOUS	ALUMINUM ALLOYS, ALUMINUM ALLOYS CONTAINING LEAD	7,200.00	CHROMIUM	0.5	36.00	7440-47-3	C	A/CH@LES	RAW	S	F & J

COPYRIGHT 2006 VANGUARD ENVIRONMENTAL, INC.

C= Carcinogen
T= Teratogen
M= Mutagen
S+__= Suspect

F= Flammable
P= Pressure
R= Reactive
A= Acute
CH= Chronic

G= Gene
L= Lung
O= Organs
E= Eyes
S= Skin

S= Solid
L= Liquid
G= Gas
SP= Solid Particle
PST= Paste

OSHA HAZCOM: ARROW GEAR COMPANY

CHEM ID	MSDS NO.	MANUFACTURER NAME	PRODUCT NAME	MAXIMUM WEIGHT	CHEMICAL NAME	%	CHEMICAL WEIGHT	CAS NUMBER	CARCINOGEN MUTAGEN TERATOGEN	NFPA 704/HMIS/ FPRACH/GLOES	CONTAINER	PHYSICAL STATE	AREA
499	172	VARIOUS	ALUMINUM ALLOYS ALUMINUM ALLOYS CONTAINING LEAD	7,200.00	NICKEL	0.5	36.00	7440-02-0	SC	A/CH@LES	RAW	S	F & J
500	173	VARIOUS	STAINLESS STEEL	5,700.00	IRON	88	5,016.00	7439-89-6		A/CH@LES	RAW	S	F & J
501	173	VARIOUS	STAINLESS STEEL	5,700.00	CHROMIUM	30	1,710.00	7440-47-3	C	A/CH@LES	RAW	S	F & J
502	173	VARIOUS	STAINLESS STEEL	5,700.00	NICKEL	27	1,539.00	7440-02-0	SC	A/CH@LES	RAW	S	F & J
503	173	VARIOUS	STAINLESS STEEL	5,700.00	COPPER	6	342.00	7440-50-8		A/CH@LES	RAW	S	F & J
504	173	VARIOUS	STAINLESS STEEL	5,700.00	MANGANESE	6	342.00	7439-96-5		A/CH@LES	RAW	S	F & J
505	173	VARIOUS	STAINLESS STEEL	5,700.00	MOLYBDENUM	6	342.00	7439-98-7		A/CH@LES	RAW	S	F & J
506	173	VARIOUS	STAINLESS STEEL	5,700.00	TITANIUM	6	342.00	7440-32-6		A/CH@LES	RAW	S	F & J
507	173	VARIOUS	STAINLESS STEEL	5,700.00	CARBON	2	114.00	7440-44-0		A/CH@LES	RAW	S	F & J
508	173	VARIOUS	STAINLESS STEEL	5,700.00	COBALT	2	114.00	7440-48-4	C	A/CH@LES	RAW	S	F & J
509	173	VARIOUS	STAINLESS STEEL	5,700.00	NIOBIUM	2	114.00	7440-03-1		A/CH@LES	RAW	S	F & J
510	173	VARIOUS	STAINLESS STEEL	5,700.00	NITROGEN	2	114.00	7727-37-9		A/CH@LES	RAW	S	F & J
511	173	VARIOUS	STAINLESS STEEL	5,700.00	PHOSPHORUS	2	114.00	7723-14-0		A/CH@LES	RAW	S	F & J
512	173	VARIOUS	STAINLESS STEEL	5,700.00	SILICON	2	114.00	7440-21-3		A/CH@LES	RAW	S	F & J
513	173	VARIOUS	STAINLESS STEEL	5,700.00	SULFUR	2	114.00	7704-34-9		A/CH@LES	RAW	S	F & J
514	173	VARIOUS	STAINLESS STEEL	5,700.00	TIN	2	114.00	7440-31-5		A/CH@LES	RAW	S	F & J
515	175	EXXON COMPANY, U.S.A	RUST-BAN 392	367.44	ALIPHATIC PETROLEUM DISTILLATES	92	338.05	64742-47-8		1-2-0 F/A@LES	STEEL DRUM	L	O
516	175	EXXON COMPANY, U.S.A	RUST-BAN 392	367.44	PROPRIETARY ADDITIVES MIXTURE	8	29.40			1-2-0 F/A@LES	STEEL DRUM	L	O
517	176	MOBIL OIL CORPORATION	MOBIL VACTRA OIL NO 1	144.97	ADDITIVES MIXTURE	100	144.97			0-1-0	STEEL DRUM	L	J
518	176	MOBIL OIL CORPORATION	MOBIL VACTRA OIL NO 1	144.97	PETROLEUM HYDROCARBON	100	144.97	64742-49-0		0-1-0	STEEL DRUM	L	J

HAZARD COMMUNICATION CHEMICAL INVENTORY LIST
COPYRIGHT 2000 VANGUARD ENVIRONMENTAL, INC.
TULSA, OK

C= Carcinogen
T= Teratogen
M= Mutagen
S+__ = Suspect

F= Flammable
P= Pressure
R= Reactive
A= Acute
CH= Chronic

G= Gene
L= Lung
O= Organs
E= Eyes
S= Skin

S= Solid
L= Liquid
G= Gas
SP= Solid Particle
PST= Paste

OSHA HAZCOM: ARROW GEAR COMPANY

CHEM ID	MSDS NO.	MANUFACTURER NAME	PRODUCT NAME	MAXIMUM WEIGHT	CHEMICAL NAME	%	CHEMICAL WEIGHT	CAS NUMBER	CARCINOGEN MUTAGEN TERATOGEN	NFPA 704/HMIS/ FPRACH/GLOES	CONTAINER	PHYSICAL STATE	AREA
519	177	MOBIL OIL CORPORATION	MOBIL DTE 13M	146.48	ZINC DIALKYLDITHIOPHOSPHATE	0.67	0.98	68649-42-3		0-1-0	STEEL DRUM	L	I
520	177	MOBIL OIL CORPORATION	MOBIL DTE 13M	146.48	ZINC	0.1	0.15	7440-66-6		0-1-0	STEEL DRUM	L	I
521	178	MULLEN CIRCLE BRAND, INC	INSTED-A-LED	116.91	PETROLEUM OIL	1	1.17	70592-78-8		1-1-0 A@LES	CAN	PST	A
522	179	MAN-GILL CHEMICAL	RUSTAREST 53216	1,001.28	DIETHANOLAMINE	5	50.06	111-42-2		1-0-0 A@LES	STEEL DRUM	L	C & O
523	180	THE DEXTER CORPORATION	POLYURETHANE CATALYST	8.85	POLYHEXAMETHYLENE DIISOCYANATE	80	7.08	28182-81-2		3-3-0 F/R/A/CH@LOES	CAN	L	B
524	180	THE DEXTER CORPORATION	POLYURETHANE CATALYST	8.85	BUTYL ACETATE	20	1.77	123-86-4		3-3-0 F/R/A/CH@LOES	CAN	L	B
525	180	THE DEXTER CORPORATION	POLYURETHANE CATALYST	8.85	XYLENE	20	1.77	1330-20-7		3-3-0 F/R/A/CH@LOES	CAN	L	B
526	180	THE DEXTER CORPORATION	POLYURETHANE CATALYST	8.85	HEXAMETHYLENE-1,6-DIISOCYANATE	10	0.89	822-06-0		3-3-0 F/R/A/CH@LOES	CAN	L	B
527	181	DEXTER-CROWN METRO	POLYURETHANE TOPCOAT - CLEAR	8.77	1-METHOXY-2-ACETOXYPROPANE	65	5.70	108-65-6		F/A/CH@LES	CAN	L	B
528	183	SANDVIK COROMANT COMPANY	ALL SANDVIK COROMANT CERMET GRADES	10.00	TITANIUM DIOXIDE	53	5.30	13463-67-7	C	A/CH@LES	RAW	S	D
529	183	SANDVIK COROMANT COMPANY	ALL SANDVIK COROMANT CERMET GRADES	10.00	TUNGSTEN CARBIDE	46	4.60	12070-12-1		A/CH@LES	RAW	S	D
530	183	SANDVIK COROMANT COMPANY	ALL SANDVIK COROMANT CERMET GRADES	10.00	TANTALUM CARBIDE	18	1.80	12070-06-3		A/CH@LES	RAW	S	D
531	183	SANDVIK COROMANT COMPANY	ALL SANDVIK COROMANT CERMET GRADES	10.00	NICKEL	15	1.50	7440-02-0	SC	A/CH@LES	RAW	S	D
532	183	SANDVIK COROMANT COMPANY	ALL SANDVIK COROMANT CERMET GRADES	10.00	COBALT	13	1.30	7440-48-4	C	A/CH@LES	RAW	S	D
533	183	SANDVIK COROMANT COMPANY	ALL SANDVIK COROMANT CERMET GRADES	10.00	CHROMIUM	3	0.30	7440-47-3	C	A/CH@LES	RAW	S	D
534	183	SANDVIK COROMANT COMPANY	ALL SANDVIK COROMANT CERMET GRADES	10.00	ALUMINUM OXIDE	2	0.20	1344-28-1		A/CH@LES	RAW	S	D
535	183	SANDVIK COROMANT COMPANY	ALL SANDVIK COROMANT CERMET GRADES	10.00	BORON OXIDE	2	0.20	1303-86-2		A/CH@LES	RAW	S	D
536	183	SANDVIK COROMANT COMPANY	ALL SANDVIK COROMANT CERMET GRADES	10.00	CHROMIUM CARBIDE	2	0.20	12012-35-0	C	A/CH@LES	RAW	S	D
537	183	SANDVIK COROMANT COMPANY	ALL SANDVIK COROMANT CERMET GRADES	10.00	MOLYBDENUM	2	0.20	7439-98-7		A/CH@LES	RAW	S	D
538	183	SANDVIK COROMANT COMPANY	ALL SANDVIK COROMANT CERMET GRADES	10.00	ZIRCONIUM	2	0.20	7440-67-7		A/CH@LES	RAW	S	D

HAZARD COMMUNICATION CHEMICAL INVENTORY LIST
COPYRIGHT 2000, VANGUARD ENVIRONMENTAL, INC.
TULSA, OK.

C= Carcinogen
T= Teratogen
M= Mutagen
S+__= Suspect

F= Flammable
P= Pressure
R= Reactive
A= Acute
CH= Chronic

G= Gene
L= Lung
O= Organs
E= Eyes
S= Skin

S= Solid
L= Liquid
G= Gas
SP= Solid Particle
PST= Paste

OSHA HAZCOM: ARROW GEAR COMPANY

CHEM ID	MSDS NO.	MANUFACTURER NAME	PRODUCT NAME	MAXIMUM WEIGHT	CHEMICAL NAME	%	CHEMICAL WEIGHT	CAS NUMBER	CARCINOGEN MUTAGEN TERATOGEN	NFPA 704/HMIS/ FPRACH/GLOES	CONTAINER	PHYSICAL STATE	AREA
539	184	SANDVIK COROMANT COMPANY	CC670	10.00	ALUMINUM OXIDE	90	9.00	1344-28-1		A/CH@LES	RAW	S	D
540	184	SANDVIK COROMANT COMPANY	CC670	10.00	SILICON CARBIDE	40	4.00	409-21-2		A/CH@LES	RAW	S	D
541	185	SANDVIK COROMANT COMPANY	SANDVIK COROMANT GRADE CC620	10.00	ALUMINUM OXIDE	98	9.80	1344-28-1		A/CH@LES	RAW	S	D
542	185	SANDVIK COROMANT COMPANY	SANDVIK COROMANT GRADE CC620	10.00	ZIRCONIUM	2	0.20	7440-67-7		A/CH@LES	RAW	S	D
543	186	MASTER APPLIANCE CORPORATION	3W799	5.00	ISOBUTANE	100	5.00	75-28-5		F/A@LES	CYLINDER	G	E
544	187	AMERICAN COLLOID COMPANY	OIL ABSORBENT	2,000.00	CRYSTALLINE SILICA	6	120.00	14808-60-7	C	A@L	BAG	SP	PLANT WIDE

TOTAL CUMULATIVE HAZARD WEIGHT = 250,461.10

C= Carcinogen
T= Teratogen
M= Mutagen
S+__= Suspect

F= Flammable
P= Pressure
R= Reactive
A= Acute
CH= Chronic

G= Gene
L= Lung
O= Organs
E= Eyes
S= Skin

S= Solid
L= Liquid
G= Gas
SP= Solid Particle
PST= Paste

VANGUARD
ENVIRONMENTAL, INC.
ENVIRONMENTAL & SAFETY COMPLIANCE SPECIALISTS

Part 9

SARA 313 Candidates

Toxic Chemicals and Form R Reporting

Reporting required under Section 313 of SARA Title III is commonly known as Form R. Under this section, certain facilities manufacturing, processing, importing, or otherwise using listed toxic chemicals must report the environmental releases of such chemicals to their state and to the EPA. In this Chemical Hazard Analysis book, we refer to those chemicals as "313 Candidates" because we identify all of the toxic chemicals at your facility which potentially require reporting under this section. *The information here should not be confused with actual Form R reporting.* It is valuable preparatory information that will help qualify or disqualify your facility for Form R/Toxic Release Inventory (TRI) Reporting. *Form R reporting requirements will be determined later in a separate consultation with your Regulatory Specialist.*

LOCAL, STATE, AND FEDERAL REGULATORY AGENCIES DON'T TAKE THE HAZARDS OF TOXIC CHEMICALS LIGHTLY, AND YOU SHOULDN'T EITHER

Toxic chemicals are literally poisonous and they should be treated as such. Moreover, many toxic chemicals are carcinogenic (i.e., they cause cancer). It is important to know where these hazards are and how to deal effectively with them in the workplace and prevent their release into the environment: air, land, and water. Whether your facility has to file Form R reports or not, it is important to identify and control toxic

19-Jan-01

SECTION 313 "FORM R" CANDIDATES

SECTION 313 "FORM R" CANDIDATES: ARROW GEAR COMPANY

MSDS NO.	MANUFACTURER NAME	PRODUCT NAME	MAXIMUM WEIGHT	CHEMICAL NAME	%	CHEMICAL WEIGHT	CAS NUMBER	PHYSICAL STATE
	313 CHEMICAL GROUP BY NAME							
62	SUNSHINE MAKERS, INC.	SIMPLE GREEN (OIL DISPERSANT)	12.00	2-BUTOXYETHANOL	2	0.24	111-76-2	L
134	ASHLAND CHEMICAL COMPANY	TECTYL 275	408.78	2-BUTOXYETHANOL	20	81.76	111-76-2	L
				313 CANDIDATE AGGREGATE =		*82.00*		
	313 CHEMICAL GROUP BY NAME							
9	SAF-T-EZE DIV., STL COMPOUND CORPORATION	SAF-T-EZE NICKEL PREMIUM ANTI-SEIZE	5.00	ALUMINUM	100	5.00	7429-90-5	GEL
101	SUNNEN PRODUCTS COMPANY	SUNNEN HONING STONES	100.00	ALUMINUM	5	5.00	7429-90-5	S
170	VARIOUS	CARBON STEEL - HR & CR LEADED STEEL	10,600.00	ALUMINUM	1	106.00	7429-90-5	S
172	VARIOUS	ALUMINUM ALLOYS, ALUMINUM ALLOYS CONTAINING LEAD	7,200.00	ALUMINUM	99.7	7,178.40	7429-90-5	S
				313 CANDIDATE AGGREGATE =		*7,294.40*		
	313 CHEMICAL GROUP BY NAME							
11	NORTON COMPANY	ARROWBLAST, TBS	100.00	ALUMINUM OXIDE	90	90.00	1344-28-1	SP
11.2	NORTON COMPANY	MICROGRADED ALUNDUM	100.00	ALUMINUM OXIDE	96.3	96.30	1344-28-1	SP
26	KENNMETAL, INC.	K090	50.00	ALUMINUM OXIDE	95	47.50	1344-28-1	SP
32	SANDVIK COROMANT COMPANY	ALL SANDVIK COROMANT CEMENTED TUNGSTEN CARBIDE	10.00	ALUMINUM OXIDE	2	0.20	1344-28-1	S
33	PAGE-WILSON CORPORATION	PRESSED RUBBER WHEEL	10.00	ALUMINUM OXIDE	1	0.10	1344-28-1	S
40	SANDVIK COROMANT COMPANY	CBN	10.00	ALUMINUM OXIDE	2	0.20	1344-28-1	S
41	SANDVIK COROMANT COMPANY	PCD	10.00	ALUMINUM OXIDE	2	0.20	1344-28-1	S
48	NORTON COMPANY	DIAMOND OR CUBIC BORON NITRIDE GRINDING WHEELS	5,000.00	ALUMINUM OXIDE	81	4,050.00	1344-28-1	S

 COPYRIGHT 2000, VANGUARD ENVIRONMENTAL, INC.

Note: This is a Candidate List Only, screening the potential for subsequent Form R Reporting (TRI). Further threshold data, including annual throughput analyses and chemical mass balance calculations must be conducted for actual TRI reporting needs.

SECTION 313 "FORM R" CANDIDATES: ARROW GEAR COMPANY

MSDS NO.	MANUFACTURER NAME	PRODUCT NAME	MAXIMUM WEIGHT	CHEMICAL NAME	%	CHEMICAL WEIGHT	CAS NUMBER	PHYSICAL STATE
63	NORTON COMPANY	VITRIFIED BONDED-ABRASIVE PRODUCTS	100.00	ALUMINUM OXIDE	96	96.00	1344-28-1	S
101	SUNNEN PRODUCTS COMPANY	SUNNEN HONING STONES	100.00	ALUMINUM OXIDE	55	55.00	1344-28-1	S
112	POTTERS INDUSTRIES, INC.	BALLOTINI IMPACT BEADS	1,000.00	ALUMINUM OXIDE	100	1,000.00	1344-28-1	SP
113	SINCLAIR MINERAL & CHEMICAL COMPANY	EXOLON, FASTBLAST	1,000.00	ALUMINUM OXIDE	100	1,000.00	1344-28-1	SP
135	NEW CASTLE REFRACTORIES COMPANY	SILICON CARBIDE: FINES, FRIT, OR CLAY BONDED	100.00	ALUMINUM OXIDE	12	12.00	1344-28-1	S
142	CHAS. F. L'HOMMEDIEU & SONS	EMERY CAKE BUFFING COMPOSITION	36.00	ALUMINUM OXIDE	75	27.00	1344-28-1	S
183	SANDVIK COROMANT COMPANY	ALL SANDVIK COROMANT CERMET GRADES	10.00	ALUMINUM OXIDE	2	0.20	1344-28-1	S
184	SANDVIK COROMANT COMPANY	CC670	10.00	ALUMINUM OXIDE	90	9.00	1344-28-1	S
185	SANDVIK COROMANT COMPANY	SANDVIK COROMANT GRADE CC620	10.00	ALUMINUM OXIDE	98	9.80	1344-28-1	S
				313 CANDIDATE AGGREGATE =		***6,493.50***		
	313 CHEMICAL GROUP BY NAME							
89	LAROCHE INDUSTRIES, INC.	AMMONIA	450.00	AMMONIA	99.5	447.75	7664-41-7	L
				313 CANDIDATE AGGREGATE =		***447.75***		
	313 CHEMICAL GROUP BY NAME							
69	BRUSH WELLMAN ENGINEERING MATERIALS	COPPER BERYLLIUM WROUGHT ALLOYS	168.00	BERYLLIUM	2	3.36	7440-41-7	S
171	BRUSH WELLMAN ENGINEERED MATERIALS	COPPER BERYLLIUM WROUGHT ALLOY	275.00	BERYLLIUM	2	5.50	7440-41-7	S
				313 CANDIDATE AGGREGATE =		***8.86***		
	313 CHEMICAL GROUP BY NAME							
49	ITW FLUID PRODUCTS GROUP	YELLOW DXX-526, DLT, DXX-340	72.65	BUTYL ALCOHOL	30	21.80	71-36-3	L
51	ITW FLUID PRODUCTS GROUP	STEEL BLUE; DX-100	70.15	BUTYL ALCOHOL	5	3.51	71-36-3	L

 COPYRIGHT 2000, VANGUARD ENVIRONMENTAL, INC.

Note: This is a Candidate List Only, screening the potential for subsequent Form R Reporting (TRI). Further threshold data, including annual throughput analyses and chemical mass balance calculations must be conducted for actual TRI reporting needs.

SECTION 313 "FORM R" CANDIDATES: ARROW GEAR COMPANY

MSDS NO.	MANUFACTURER NAME	PRODUCT NAME	MAXIMUM WEIGHT	CHEMICAL NAME	%	CHEMICAL WEIGHT	CAS NUMBER	PHYSICAL STATE
52	ITW FLUID PRODUCTS GROUP	STEEL RED; DX-986, DX-296; RED DL	70.15	BUTYL ALCOHOL	5	3.51	71-36-3	L
81	STANCHEM, INC.	CORROSION VARNISH	24.00	BUTYL ALCOHOL	20	4.80	71-36-3	L
83	ACHESON COLLOIDS COMPANY	DAG 154	826.75	BUTYL ALCOHOL	5	41.34	71-36-3	L
110	RANDOLPH PRODUCTS COMPANY	AMS-3100-YELLOW ZINC CHROMATE PRIMER REV G PRIMER	38.80	BUTYL ALCOHOL	15	5.82	71-36-3	L
				313 CANDIDATE AGGREGATE =		***80.77***		
	313 CHEMICAL GROUP BY NAME							
104	ARCONIUM SPECIALTY ALLOYS	OSTALLOY 158	30.00	CADMIUM	10.1	3.03	7440-43-9	S
105	HANDY & HARMAN	SILVER-COPPER-CADMIUM-ZINC BRAZING ALLOYS	10.00	CADMIUM	24	2.40	7440-43-9	S
				313 CANDIDATE AGGREGATE =		***5.43***		
	313 CHEMICAL GROUP BY NAME							
118	MOBIL OIL CORPORATION	MOBIL ALMO 525	10.00	CHLORINE	0.9	0.09	7782-50-5	L
155	MOBIL OIL CORPORATION	MOBILMET NU	14,764.57	CHLORINE	0.8	118.12	7782-50-5	L
159	MOBIL OIL CORPORATION	MOBILUX EP 023	75.33	CHLORINE	0.63	0.47	7782-50-5	GEL
				313 CANDIDATE AGGREGATE =		***118.68***		
	313 CHEMICAL GROUP BY NAME							
28	BLASER SWISSLUBE, INC.	BLASOCUT 2000 UNIVERSAL	8,150.58	CHLOROALKANES	15	1,222.59	61788-76-9	L
155	MOBIL OIL CORPORATION	MOBILMET NU	14,764.57	CHLOROALKANES	1.9	280.53	61788-76-9	L
159	MOBIL OIL CORPORATION	MOBILUX EP 023	75.33	CHLOROALKANES	1.42	1.07	61788-76-9	GEL
				313 CANDIDATE AGGREGATE =		***1,504.18***		
	313 CHEMICAL GROUP BY NAME							
10	MANCHASTER TOOL COMPANY	MANCHASTER TOOL CARBIDE	10.00	CHROMIUM	5	0.50	7440-47-3	S

 COPYRIGHT 2000, VANGUARD ENVIRONMENTAL, INC.

Note: This is a Candidate List Only, screening the potential for subsequent Form R Reporting (TRI). Further threshold data, including annual throughput analyses and chemical mass balance calculations must be conducted for actual TRI reporting needs.

SECTION 313 "FORM R" CANDIDATES: ARROW GEAR COMPANY

MSDS NO.	MANUFACTURER NAME	PRODUCT NAME	MAXIMUM WEIGHT	CHEMICAL NAME	%	CHEMICAL WEIGHT	CAS NUMBER	PHYSICAL STATE
14	FELLOWS CORPORATION	HIGH SPEED STEELS AND TUNGSTEN CARBIDES	100.00	CHROMIUM	4.25	4.25	7440-47-3	S
32	SANDVIK COROMANT COMPANY	ALL SANDVIK COROMANT CEMENTED TUNGSTEN CARBIDE	10.00	CHROMIUM	3	0.30	7440-47-3	S
40	SANDVIK COROMANT COMPANY	CBN	10.00	CHROMIUM	2	0.20	7440-47-3	S
41	SANDVIK COROMANT COMPANY	PCD	10.00	CHROMIUM	2	0.20	7440-47-3	S
49	ITW FLUID PRODUCTS GROUP	YELLOW DXX-526, DLT, DXX-340	72.65	CHROMIUM	5	3.63	7440-47-3	L
172	VARIOUS	ALUMINUM ALLOYS, ALUMINUM ALLOYS CONTAINING LEAD	7,200.00	CHROMIUM	0.5	36.00	7440-47-3	S
173	VARIOUS	STAINLESS STEEL	5,700.00	CHROMIUM	30	1,710.00	7440-47-3	S
183	SANDVIK COROMANT COMPANY	ALL SANDVIK COROMANT CERMET GRADES	10.00	CHROMIUM	3	0.30	7440-47-3	S
				313 CANDIDATE AGGREGATE =		***1,755.38***		

313 CHEMICAL GROUP BY NAME

10	MANCHASTER TOOL COMPANY	MANCHASTER TOOL CARBIDE	10.00	CHROMIUM CARBIDE	5	0.50	12012-35-0	S
14	FELLOWS CORPORATION	HIGH SPEED STEELS AND TUNGSTEN CARBIDES	100.00	CHROMIUM CARBIDE	5.1	5.10	12012-35-0	S
24	KENNMETAL, INC.	K313, K714, KC732, KS1, KZ313, KZ714, SP313, SP939	150.00	CHROMIUM CARBIDE	7	10.50	12012-35-0	SP
32	SANDVIK COROMANT COMPANY	ALL SANDVIK COROMANT CEMENTED TUNGSTEN CARBIDE	10.00	CHROMIUM CARBIDE	3	0.30	12012-35-0	S
183	SANDVIK COROMANT COMPANY	ALL SANDVIK COROMANT CERMET GRADES	10.00	CHROMIUM CARBIDE	2	0.20	12012-35-0	S
				313 CANDIDATE AGGREGATE =		***16.60***		

313 CHEMICAL GROUP BY NAME

44	ERICH NUSSLE OHG	CONDURSAL N523	20.00	CHROMIUM OXIDE	100	20.00	1308-38-9	PST
				313 CANDIDATE AGGREGATE =		***20.00***		

 COPYRIGHT 2000, VANGUARD ENVIRONMENTAL, INC.

Note: This is a Candidate List Only, screening the potential for subsequent Form R Reporting (TRI). Further threshold data, including annual throughput analyses and chemical mass balance calculations must be conducted for actual TRI reporting needs.

SECTION 313 "FORM R" CANDIDATES: ARROW GEAR COMPANY

MSDS NO.	MANUFACTURER NAME	PRODUCT NAME	MAXIMUM WEIGHT	CHEMICAL NAME	%	CHEMICAL WEIGHT	CAS NUMBER	PHYSICAL STATE
	313 CHEMICAL GROUP BY NAME							
3	T.J. MARTIN COMPANY	ROTARY CUTTING TOOLS	10.00	COBALT	25	2.50	7440-48-4	S
10	MANCHASTER TOOL COMPANY	MANCHASTER TOOL CARBIDE	10.00	COBALT	26	2.60	7440-48-4	S
14	FELLOWS CORPORATION	HIGH SPEED STEELS AND TUNGSTEN CARBIDES	100.00	COBALT	97	97.00	7440-48-4	S
22	KENNMETAL, INC.	TUNGSTEN CARBIDE WITH COBALT BINDER	100.00	COBALT	25	25.00	7440-48-4	S
24	KENNMETAL, INC.	K313, K714, KC732, KS1, KZ313, KZ714, SP313, SP939	150.00	COBALT	10	15.00	7440-48-4	SP
32	SANDVIK COROMANT COMPANY	ALL SANDVIK COROMANT CEMENTED TUNGSTEN CARBIDE	10.00	COBALT	16	1.60	7440-48-4	S
40	SANDVIK COROMANT COMPANY	CBN	10.00	COBALT	15	1.50	7440-48-4	S
41	SANDVIK COROMANT COMPANY	PCD	10.00	COBALT	23	2.30	7440-48-4	S
48	NORTON COMPANY	DIAMOND OR CUBIC BORON NITRIDE GRINDING WHEELS	5,000.00	COBALT	60	3,000.00	7440-48-4	S
52	ITW FLUID PRODUCTS GROUP	STEEL RED; DX-986, DX-296; RED DL	70.15	COBALT	5	3.51	7440-48-4	L
69	BRUSH WELLMAN ENGINEERING MATERIALS	COPPER BERYLLIUM WROUGHT ALLOYS	168.00	COBALT	2.7	4.54	7440-48-4	S
171	BRUSH WELLMAN ENGINEERED MATERIALS	COPPER BERYLLIUM WROUGHT ALLOY	275.00	COBALT	2.7	7.43	7440-48-4	S
172	VARIOUS	ALUMINUM ALLOYS, ALUMINUM ALLOYS CONTAINING LEAD	7,200.00	COBALT	2	144.00	7440-48-4	S
173	VARIOUS	STAINLESS STEEL	5,700.00	COBALT	2	114.00	7440-48-4	S
183	SANDVIK COROMANT COMPANY	ALL SANDVIK COROMANT CERMET GRADES	10.00	COBALT	13	1.30	7440-48-4	S
				313 CANDIDATE AGGREGATE =		*3,422.27*		
	313 CHEMICAL GROUP BY NAME							
39	SANDVIK COROMANT COMPANY	MOLYKOTE® 1000 PASTE	10.00	COPPER	7	0.70	7440-50-8	PST
48	NORTON COMPANY	DIAMOND OR CUBIC BORON NITRIDE GRINDING WHEELS	5,000.00	COPPER	85	4,250.00	7440-50-8	S

 COPYRIGHT 2000, VANGUARD ENVIRONMENTAL, INC.

Note: This is a Candidate List Only, screening the potential for subsequent Form R Reporting (TRI). Further threshold data, including annual throughput analyses and chemical mass balance calculations must be conducted for actual TRI reporting needs.

SECTION 313 "FORM R" CANDIDATES: ARROW GEAR COMPANY

MSDS NO.	MANUFACTURER NAME	PRODUCT NAME	MAXIMUM WEIGHT	CHEMICAL NAME	%	CHEMICAL WEIGHT	CAS NUMBER	PHYSICAL STATE
69	BRUSH WELLMAN ENGINEERING MATERIALS	COPPER BERYLLIUM WROUGHT ALLOYS	168.00	COPPER	92.8	155.90	7440-50-8	S
79	DEGUSSA CORPORATION	DEGUSSA 5600 FOIL (MB565)	10.00	COPPER	100	10.00	7440-50-8	S
101	SUNNEN PRODUCTS COMPANY	SUNNEN HONING STONES	100.00	COPPER	5	5.00	7440-50-8	S
105	HANDY & HARMAN	SILVER-COPPER-CADMIUM-ZINC BRAZING ALLOYS	10.00	COPPER	45	4.50	7440-50-8	S
171	BRUSH WELLMAN ENGINEERED MATERIALS	COPPER BERYLLIUM WROUGHT ALLOY	275.00	COPPER	99	272.25	7440-50-8	S
172	VARIOUS	ALUMINUM ALLOYS, ALUMINUM ALLOYS CONTAINING LEAD	7,200.00	COPPER	10	720.00	7440-50-8	S
173	VARIOUS	STAINLESS STEEL	5,700.00	COPPER	6	342.00	7440-50-8	S
				313 CANDIDATE AGGREGATE =		***5,760.35***		
	313 CHEMICAL GROUP BY NAME							
179	MAN-GILL CHEMICAL	RUSTAREST 53216	1,001.28	DIETHANOLAMINE	5	50.06	111-42-2	L
				313 CANDIDATE AGGREGATE =		***50.06***		
	313 CHEMICAL GROUP BY NAME							
166	MOBIL OIL CORPORATION	MOBIL MULTI-PURPOSE ATF	2,204.66	DIPHENYLAMINE	1	22.05	122-39-4	L
				313 CANDIDATE AGGREGATE =		***22.05***		
	313 CHEMICAL GROUP BY NAME							
106	INDEPENDENT INK, INC.	73X WHITE MARKING INK	10.86	ETHYLENE GLYCOL	9	0.98	107-21-1	L
107	INDEPENDENT INK, INC.	73X BLACK MARKING INK	8.35	ETHYLENE GLYCOL	13	1.09	107-21-1	L
				313 CANDIDATE AGGREGATE =		***2.06***		
	313 CHEMICAL GROUP BY NAME							
71	MAN-GILL CHEMICAL	POWER STRIP 720	2,820.97	ETHYLENE GLYCOL PHENYL ETHE	90	2,538.87	122-99-6	L
				313 CANDIDATE AGGREGATE =		***2,538.87***		

 COPYRIGHT 2000, VANGUARD ENVIRONMENTAL, INC.

Note: This is a Candidate List Only, screening the potential for subsequent Form R Reporting (TRI). Further threshold data, including annual throughput analyses and chemical mass balance calculations must be conducted for actual TRI reporting needs

SECTION 313 "FORM R" CANDIDATES: ARROW GEAR COMPANY

MSDS NO.	MANUFACTURER NAME	PRODUCT NAME	MAXIMUM WEIGHT	CHEMICAL NAME	%	CHEMICAL WEIGHT	CAS NUMBER	PHYSICAL STATE
	313 CHEMICAL GROUP BY NAME							
49	ITW FLUID PRODUCTS GROUP	YELLOW DXX-526, DLT, DXX-340	72.65	ISOPROPYL ALCOHOL	5	3.63	67-63-0	L
51	ITW FLUID PRODUCTS GROUP	STEEL BLUE; DX-100	70.15	ISOPROPYL ALCOHOL	5	3.51	67-63-0	L
52	ITW FLUID PRODUCTS GROUP	STEEL RED; DX-986, DX-296; RED DL	70.15	ISOPROPYL ALCOHOL	5	3.51	67-63-0	L
77	ULTRAMATIC EQUIPMENT COMPANY	LR-600-S	16.70	ISOPROPYL ALCOHOL	1	0.17	67-63-0	L
83	ACHESON COLLOIDS COMPANY	DAG 154	826.75	ISOPROPYL ALCOHOL	50	413.37	67-63-0	L
85	SHELL OIL COMPANY	ISOPROPYL ALCOHOL	1,811.96	ISOPROPYL ALCOHOL	100	1,811.96	67-63-0	L
106	INDEPENDENT INK, INC.	7-X WHITE MARKING INK	10.86	ISOPROPYL ALCOHOL	25	2.71	67-63-0	L
107	INDEPENDENT INK, INC.	7-X BLACK MARKING INK	8.35	ISOPROPYL ALCOHOL	33	2.76	67-63-0	L
				313 CANDIDATE AGGREGATE =		***2,241.62***		
	313 CHEMICAL GROUP BY NAME							
49	ITW FLUID PRODUCTS GROUP	YELLOW DXX-526, DLT, DXX-340	72.65	LEAD	5	3.63	7439-92-1	L
104	ARCONIUM SPECIALTY ALLOYS	OSTALLOY 158	30.00	LEAD	27.3	8.19	7439-92-1	S
170	VARIOUS	CARBON STEEL - HR & CR LEADED STEEL	10,600.00	LEAD	1	106.00	7439-92-1	S
172	VARIOUS	ALUMINUM ALLOYS, ALUMINUM ALLOYS CONTAINING LEAD	7,200.00	LEAD	1	72.00	7439-92-1	S
				313 CANDIDATE AGGREGATE =		***189.82***		
	313 CHEMICAL GROUP BY NAME							
14	FELLOWS CORPORATION	HIGH SPEED STEELS AND TUNGSTEN CARBIDES	100.00	MANGANESE	0.8	0.80	7439-96-5	S
48	NORTON COMPANY	DIAMOND OR CUBIC BORON NITRIDE GRINDING WHEELS	5,000.00	MANGANESE	3	150.00	7439-96-5	S
101	SUNNEN PRODUCTS COMPANY	SUNNEN HONING STONES	100.00	MANGANESE	1	1.00	7439-96-5	S

 COPYRIGHT 2000, VANGUARD ENVIRONMENTAL, INC.

Note: This is a Candidate List Only, screening the potential for subsequent Form R Reporting (TRI). Further threshold data, including annual throughput analyses and chemical mass balance calculations must be conducted for actual TRI reporting needs.

SECTION 313 "FORM R" CANDIDATES: ARROW GEAR COMPANY

MSDS NO.	MANUFACTURER NAME	PRODUCT NAME	MAXIMUM WEIGHT	CHEMICAL NAME	%	CHEMICAL WEIGHT	CAS NUMBER	PHYSICAL STATE
170	VARIOUS	CARBON STEEL - HR & CR LEADED STEEL	10,600.00	MANGANESE	2	212.00	7439-96-5	S
172	VARIOUS	ALUMINUM ALLOYS, ALUMINUM ALLOYS CONTAINING LEAD	7,200.00	MANGANESE	2	144.00	7439-96-5	S
173	VARIOUS	STAINLESS STEEL	5,700.00	MANGANESE	6	342.00	7439-96-5	S
				313 CANDIDATE AGGREGATE =		***849.80***		
	313 CHEMICAL GROUP BY NAME							
86	METHANEX CORPORATION	METHANOL	1,828.03	METHYL ALCOHOL	99.85	1,825.29	67-56-1	L
102	MAYWOOD COMPANY	MAYWOOD ACRYL LACQUER THINNER	136.96	METHYL ALCOHOL	21	28.76	67-56-1	L
				313 CANDIDATE AGGREGATE =		***1,854.05***		
	313 CHEMICAL GROUP BY NAME							
65	THE TOLBER DIVISION	MICCROSTOP	7.93	METHYL ETHYL KETONE	75	5.95	78-93-3	L
102	MAYWOOD COMPANY	MAYWOOD ACRYL LACQUER THINNER	136.96	METHYL ETHYL KETONE	9	12.33	78-93-3	L
				313 CANDIDATE AGGREGATE =		***18.28***		
	313 CHEMICAL GROUP BY NAME							
76	SEALED AIR CORPORATION	INSTAPAK® COMPONENT "A"	828.42	METHYLENEBIS(PHENYLISOCYANATE)	45	372.79	101-68-8	L
				313 CANDIDATE AGGREGATE =		***372.79***		
	313 CHEMICAL GROUP BY NAME							
7	T.J. MARTIN COMPANY	NICKEL PLATED ABRASIVE PRODUCTS	10.00	NICKEL	100	10.00	7440-02-0	S
9	SAF-T-EZE DIV., STL COMPOUND CORPORATION	SAF-T-EZE NICKEL PREMIUM ANTI-SEIZE	5.00	NICKEL	100	5.00	7440-02-0	GEL
14	FELLOWS CORPORATION	HIGH SPEED STEELS AND TUNGSTEN CARBIDES	100.00	NICKEL	91.9	91.90	7440-02-0	S
40	SANDVIK COROMANT COMPANY	CBN	10.00	NICKEL	0.35	0.04	7440-02-0	S
48	NORTON COMPANY	DIAMOND OR CUBIC BORON NITRIDE GRINDING WHEELS	5,000.00	NICKEL	82	4,100.00	7440-02-0	S

 COPYRIGHT 2000, VANGUARD ENVIRONMENTAL, INC.

Note: This is a Candidate List Only, screening the potential for subsequent Form R Reporting (TRI). Further threshold data, including annual throughput analyses and chemical mass balance calculations must be conducted for actual TRI reporting needs.

SECTION 313 "FORM R" CANDIDATES: ARROW GEAR COMPANY

MSDS NO.	MANUFACTURER NAME	PRODUCT NAME	MAXIMUM WEIGHT	CHEMICAL NAME	%	CHEMICAL WEIGHT	CAS NUMBER	PHYSICAL STATE
69	BRUSH WELLMAN ENGINEERING MATERIALS	COPPER BERYLLIUM WROUGHT ALLOYS	168.00	NICKEL	22	36.96	7440-02-0	S
171	BRUSH WELLMAN ENGINEERED MATERIALS	COPPER BERYLLIUM WROUGHT ALLOY	275.00	NICKEL	2.2	6.05	7440-02-0	S
172	VARIOUS	ALUMINUM ALLOYS, ALUMINUM ALLOYS CONTAINING LEAD	7,200.00	NICKEL	0.5	36.00	7440-02-0	S
173	VARIOUS	STAINLESS STEEL -	5,700.00	NICKEL	27	1,539.00	7440-02-0	S
183	SANDVIK COROMANT COMPANY	ALL SANDVIK COROMANT CERMET GRADES	10.00	NICKEL	15	1.50	7440-02-0	S
				313 CANDIDATE AGGREGATE =		***5,826.45***		
	313 CHEMICAL GROUP BY NAME							
15	KOEBEL METALLURGICAL SERVICES, INC.	KOEBEL SUPER CATALYST	500.00	NICKEL OXIDE	10	50.00	1313-99-1	S
				313 CANDIDATE AGGREGATE =		***50.00***		
	313 CHEMICAL GROUP BY NAME							
118	MOBIL OIL CORPORATION	MOBIL ALMO 525	10.00	PARAFFIN WAXES AND HYDROCARBON WAXES, CHLORC	2.03	0.20	63449-39-8	L
143	HANGSTERFER'S LABORATORIES, INC.	HANGSTERFER'S ALDRAW J-1	101.88	PARAFFIN WAXES AND HYDROCARBON WAXES, CHLORC	100	101.88	63449-39-8	L
				313 CANDIDATE AGGREGATE =		***102.09***		
	313 CHEMICAL GROUP BY NAME							
48	NORTON COMPANY	DIAMOND OR CUBIC BORON NITRIDE GRINDING WHEELS	5,000.00	PHOSPHORUS	1	50.00	7723-14-0	S
170	VARIOUS	CARBON STEEL - HR & CR LEADED STEEL	10,600.00	PHOSPHORUS	1	106.00	7723-14-0	S
173	VARIOUS	STAINLESS STEEL	5,700.00	PHOSPHORUS	2	114.00	7723-14-0	S
				313 CANDIDATE AGGREGATE =		***270.00***		
	313 CHEMICAL GROUP BY NAME							
21	PETROLANE	PETROLANE PROPANE	750.00	PROPYLENE	5	37.50	115-07-1	G
				313 CANDIDATE AGGREGATE =		***37.50***		

 COPYRIGHT 2000, VANGUARD ENVIRONMENTAL, INC.

Note: This is a Candidate List Only, screening the potential for subsequent Form R Reporting (TRI). Further threshold data, including annual throughput analyses and chemical mass balance calculations must be conducted for actual TRI reporting needs.

SECTION 313 "FORM R" CANDIDATES: ARROW GEAR COMPANY

MSDS NO.	MANUFACTURER NAME	PRODUCT NAME	MAXIMUM WEIGHT	CHEMICAL NAME	%	CHEMICAL WEIGHT	CAS NUMBER	PHYSICAL STATE
	313 CHEMICAL GROUP BY NAME							
65	THE TOLBER DIVISION	MICCROSTOP	7.93	PROPYLENE OXIDE	7	0.56	75-56-9	L
				313 CANDIDATE AGGREGATE =		*0.56*		
	313 CHEMICAL GROUP BY NAME							
159	MOBIL OIL CORPORATION	MOBILUX EP 023	75.33	RESIN ACIDS AND ROSIN ACIDS, POLYMD., ZINC SALTS	1	0.75	70248-43-0	GEL
				313 CANDIDATE AGGREGATE =		*0.75*		
	313 CHEMICAL GROUP BY NAME							
48	NORTON COMPANY	DIAMOND OR CUBIC BORON NITRIDE GRINDING WHEELS	5,000.00	SILVER	85	4,250.00	7440-22-4	S
79	DEGUSSA CORPORATION	DEGUSSA 5600 FOIL (MB565)	10.00	SILVER	100	10.00	7440-22-4	S
105	HANDY & HARMAN	SILVER-COPPER-CADMIUM-ZINC BRAZING ALLOYS	10.00	SILVER	50	5.00	7440-22-4	S
				313 CANDIDATE AGGREGATE =		*4,265.00*		
	313 CHEMICAL GROUP BY NAME							
49	ITW FLUID PRODUCTS GROUP	YELLOW DXX-526, DLT, DXX-340	72.65	TOLUENE	5	3.63	108-88-3	L
70	MALLINCKRODT BAKER, INC.	TOLUENE	43.09	TOLUENE	100	43.09	108-88-3	L
102	MAYWOOD COMPANY	MAYWOOD ACRYL LACQUER THINNER	136.96	TOLUENE	25	34.24	108-88-3	L
110	RANDOLPH PRODUCTS COMPANY	AMS-3100~YELLOW ZINC CHROMATE PRIMER REV G PRIMER	38.80	TOLUENE	5	1.94	108-88-3	L
127	MOBIL OIL CORPORATION	MOBIL VELOCITE OIL NO. 10	1,436.37	TOLUENE	0.01	0.14	108-88-3	L
166	MOBIL OIL CORPORATION	MOBIL MULTI-PURPOSE ATF	2,204.66	TOLUENE	0.09	1.98	108-88-3	L
				313 CANDIDATE AGGREGATE =		*85.03*		
	313 CHEMICAL GROUP BY NAME							
170	VARIOUS	CARBON STEEL - HR & CR LEADED STEEL	10,600.00	VANADIUM	1	106.00	7440-62-2	S

 COPYRIGHT 2000, VANGUARD ENVIRONMENTAL, INC.

Note: This is a Candidate List Only, screening the potential for subsequent Form R Reporting (TRI). Further threshold data, including annual throughput analyses and chemical mass balance calculations must be conducted for actual TRI reporting needs.

SECTION 313 "FORM R" CANDIDATES: ARROW GEAR COMPANY

MSDS NO.	MANUFACTURER NAME	PRODUCT NAME	MAXIMUM WEIGHT	CHEMICAL NAME	%	CHEMICAL WEIGHT	CAS NUMBER	PHYSICAL STATE
				313 CANDIDATE AGGREGATE =		*106.00*		
	313 CHEMICAL GROUP BY NAME							
18	CARBIT PAINT COMPANY	28Y10LF ORANGE S.D. GLOSS EN	10.00	XYLENE	2	0.20	1330-20-7	L
19	CARBIT PAINT COMPANY	28E9 ANSI 49 MED LT GREY SD GL	50.00	XYLENE	3	1.50	1330-20-7	L
43	ERICH NUSSLE OHG	CONDURSAL 0090	20.00	XYLENE	25	5.00	1330-20-7	L
44	ERICH NUSSLE OHG	CONDURSAL N523	20.00	XYLENE	100	20.00	1330-20-7	PST
102	MAYWOOD COMPANY	MAYWOOD ACRYL LACQUER THINNER	136.96	XYLENE	2	2.74	1330-20-7	L
110	RANDOLPH PRODUCTS COMPANY	AMS-3100-YELLOW ZINC CHROMATE PRIMER REV G PRIMER	38.80	XYLENE	5	1.94	1330-20-7	L
149	MOBIL OIL CORPORATION	MOBILITH AW-2	100.00	XYLENE	0.13	0.13	1330-20-7	GEL
180	THE DEXTER CORPORATION	POLYURETHANE CATALYST	8.85	XYLENE	20	1.77	1330-20-7	L
				313 CANDIDATE AGGREGATE =		*33.28*		
	313 CHEMICAL GROUP BY NAME							
39	SANDVIK COROMANT COMPANY	MOLYKOTE® 1000 PASTE	10.00	ZINC	4	0.40	7440-66-6	PST
79	DEGUSSA CORPORATION	DEGUSSA 5600 FOIL (MB565)	10.00	ZINC	100	10.00	7440-66-6	S
105	HANDY & HARMAN	SILVER-COPPER-CADMIUM-ZINC BRAZING ALLOYS	10.00	ZINC	30	3.00	7440-66-6	S
118	MOBIL OIL CORPORATION	MOBIL ALMO 525	10.00	ZINC	0.09	0.01	7440-66-6	L
125	MOBIL OIL CORPORATION	MOBIL DTE 11M	400.05	ZINC	0.1	0.40	7440-66-6	L
132	MOBIL OIL CORPORATION	MOBIL DTE 26	22,297.17	ZINC	0.1	22.30	7440-66-6	L
133	MOBIL OIL CORPORATION	MOBIL DTE 25	7,390.64	ZINC	0.1	7.39	7440-66-6	L
149	MOBIL OIL CORPORATION	MOBILITH AW-2	100.00	ZINC	0.15	0.15	7440-66-6	GEL

 COPYRIGHT 2000, VANGUARD ENVIRONMENTAL, INC.

Note: This is a Candidate List Only, screening the potential for subsequent Form R Reporting (TRI). Further threshold data, including annual throughput analyses and chemical mass balance calculations must be conducted for actual TRI reporting needs.

SECTION 313 "FORM R" CANDIDATES: ARROW GEAR COMPANY

MSDS NO.	MANUFACTURER NAME	PRODUCT NAME	MAXIMUM WEIGHT	CHEMICAL NAME	%	CHEMICAL WEIGHT	CAS NUMBER	PHYSICAL STATE
159	MOBIL OIL CORPORATION	MOBILUX EP 023	75.33	ZINC	0.22	0.17	7440-66-6	GEL
172	VARIOUS	ALUMINUM ALLOYS, ALUMINUM ALLOYS CONTAINING LEAD	7,200.00	ZINC	10	720.00	7440-66-6	S
177	MOBIL OIL CORPORATION	MOBIL DTE 13M	146.48	ZINC	0.1	0.15	7440-66-6	L
				313 CANDIDATE AGGREGATE =		***763.96***		
	313 CHEMICAL GROUP BY NAME							
118	MOBIL OIL CORPORATION	MOBIL ALMO 525	10.00	ZINC DIALKYLDITHIOPHOSPHATI	0.69	0.07	68649-42-3	L
125	MOBIL OIL CORPORATION	MOBIL DTE 11M	400.05	ZINC DIALKYLDITHIOPHOSPHATI	0.66	2.64	68649-42-3	L
131	MOBIL OIL CORPORATION	MOBIL DTE OIL LIGHT	399.60	ZINC DIALKYLDITHIOPHOSPHATI	0.07	0.28	68649-42-3	L
132	MOBIL OIL CORPORATION	MOBIL DTE 26	22,297.17	ZINC DIALKYLDITHIOPHOSPHATI	0.67	149.39	68649-42-3	L
133	MOBIL OIL CORPORATION	MOBIL DTE 25	7,390.64	ZINC DIALKYLDITHIOPHOSPHATI	0.67	49.52	68649-42-3	L
149	MOBIL OIL CORPORATION	MOBILITH AW-2	100.00	ZINC DIALKYLDITHIOPHOSPHATI	1.5	1.50	68649-42-3	GEL
159	MOBIL OIL CORPORATION	MOBILUX EP 023	75.33	ZINC DIALKYLDITHIOPHOSPHATI	1.5	1.13	68649-42-3	GEL
177	MOBIL OIL CORPORATION	MOBIL DTE 13M	146.48	ZINC DIALKYLDITHIOPHOSPHATI	0.67	0.98	68649-42-3	L
				313 CANDIDATE AGGREGATE =		***205.51***		
	313 CHEMICAL GROUP BY NAME							
149	MOBIL OIL CORPORATION	MOBILITH AW-2	100.00	ZINC DINONYLNAPHTHALENE SULFONATE	0.2	0.20	28016-00-4	GEL
				313 CANDIDATE AGGREGATE =		***0.20***		
	313 CHEMICAL GROUP BY NAME							
110	RANDOLPH PRODUCTS COMPANY	AMS-3100~YELLOW ZINC CHROMATE PRIMER REV G PRIMER	38.80	ZINC POTASSIUM CHROMATE PIGMENT	30	11.64	11103-86-9	L
				313 CANDIDATE AGGREGATE =		***11.64***		

 COPYRIGHT 2000, VANGUARD ENVIRONMENTAL, INC.

Note: This is a Candidate List Only, screening the potential for subsequent Form R Reporting (TRI). Further threshold data, including annual throughput analyses and chemical mass balance calculations must be conducted for actual TRI reporting needs.

SECTION 313 "FORM R" CANDIDATES: ARROW GEAR COMPANY

MSDS NO.	MANUFACTURER NAME	PRODUCT NAME	MAXIMUM WEIGHT	CHEMICAL NAME	%	CHEMICAL WEIGHT	CAS NUMBER	PHYSICAL STATE
TOTAL 313 CANDIDATES COUNT =	165	CHEMICALS/	TOTAL WEIGHT FOR ALL 313 CANDIDATES =			46,907.53		

 COPYRIGHT 2000, VANGUARD ENVIRONMENTAL, INC.

Note: This is a Candidate List Only, screening the potential for subsequent Form R Reporting (TRI). Further threshold data, including annual throughput analyses and chemical mass balance calculations must be conducted for actual TRI reporting needs.

VANGUARD
ENVIRONMENTAL, INC.
ENVIRONMENTAL & SAFETY COMPLIANCE SPECIALISTS

Part 10

Storm Water Runoff/NPDES Permitting

The "Third Leg" of EPA's Clean Water Act

On Nov. 16, 1990, the Environmental Protection Agency issued a regulation requiring National Pollution Discharge Elimination System permits for discharges of storm water from certain point sources (places of emission). That regulation, known as the "storm water application rule," set the stage for a flurry of permitting activity nearly as extensive as that which followed the creation of the NPDES program in 1972.

Since its enactment in 1972, the Clean Water Act has provided the EPA with the authority to control storm water discharges that convey pollutants to the waters of the United States through point sources. This control was authorized by Section 301 of the Act, 33 U.S.C. ss 1342. Historically, however, the Agency declined to issue permits for many regulable storm water discharges, preferring instead to concentrate its attention on discharges of process waters from industrial facilities and discharges from publicly owned treatment works (POTW's). As process and POTW discharges have been brought increasingly under control however, storm water discharges containing pollutants have become the focus of greater attention.

From 1978 through 1983, the EPA funded a series of studies and projects collectively known as the Nationwide Urban Runoff Program (NURP). One purpose of this program was to identify the content of storm water that discharges through municipal separate storm sewer systems. Storm water runoff from residential, commercial, and light industrial areas was surveyed. The data collected during the NURP study showed

that storm water contained many of the same conventional and toxic pollutants regulated from process outfalls and POTW's, sometimes in very high quantities. A large number of the samples exceeded EPA water quality standards. Other studies during the same period showed that many storm sewer systems are plagued with illicit connections that allow polluted wastewaters to discharge unregulated through the storm sewer system.

As a result of these studies and others like them, the EPA came under intensified pressure during the mid 1980's to use its pre-existing Clean Water Act authority to issue NPDES permits for all storm water discharges from point sources. The EPA resisted a full permitting effort, however, because the burden of processing the full load of permit applications would have been overwhelming.

In the 1987 amendments to the Clean Water Act, Congress devised a compromise whereby the EPA would issue permits for storm water discharges, but could focus on the most contaminated storm water discharges first. The 1987 amendments created a new section in the Act devoted to storm water permitting. Section 401(p), 33 U.S.C. ss 1342(p), provides that five categories of storm water discharges, considered to represent the most significant storm water sources of pollution, are subject to immediate permitting.

However, the EPA and the states were protected from additional permitting until after October 1992. Section 402(p) provides that, apart from the five priority categories of storm water discharges, neither the EPA nor the states required NPDES permits for storm water discharges prior to October 1, 1992. The limitation was designed to allow the EPA to focus first on those sources of storm water which the Congress believed to be most problematic. Thus, Congress's forceful move toward regulating all storm water discharges began, somewhat ironically, with a limitation on the facilities immediately subject to permitting.

The NPDES regulatory scheme provided three major permit options: the Individual Permit Application, the Group Permit Application, and case-by-case requirements to be developed for General Permit coverage. The 1990 regulations did not specifically address how the permittee was to apply for coverage under the proposed General Permit, but rather focused on a Notification-of-Intent (NOI) process.

As of the second quarter of 1992, Individual Permit Applications were being accepted by the EPA and NPDES authorized states. Several Individual Permits have been issued. The EPA has issued the proposed "Multi-Sector" General Permit, which was published in the November 19, 1993 Federal Register.

On September 9, 1992, the EPA issued the General Permit final rules for the 11 non-authorized NPDES states, making the coverage effective as of that date. The General Permit is a model for states that have or will have permitting authority.

Under the General Permit the permittee is required to file a "Notice-of-Intent," develop a Storm Water Pollution Prevention Plan (SWPPP), and in many cases conduct specific sampling and reporting activities.

Affected Industries

When Congress amended the Clean Water Act in 1987, it identified five categories of storm water discharges that could receive the immediate regulatory attention of the EPA. The five categories included:

- facilities already covered by an NPDES permit for storm water;
- facilities that engage in industrial activity;
- large (>100,000 population) municipal separate storm sewer systems;
- facilities that are determined to have storm water discharges that contribute to a violation of water quality or that are significant contributors of pollutants to waters of the United States.

The largest number of affected facilities are those that are engaged in industrial activity. In general, these are identified either by Standard Industrial Classification (SIC) code or by narrative description within the language of the rule itself. The rule defines "storm water discharge associated with industrial activity" to mean the discharge from any conveyance which is used for collecting and conveying storm water and which is directly related to the manufacturing, processing or raw materials storage areas at an industrial plant.

The rule elaborates upon this definition by listing the kinds of industrial areas that are included in the definition. It is important to note that the EPA's list is illustrative rather than all-inclusive. In other words, if storm water at an industrial site was exposed to an area that is like one in the following list, it would be covered by the rule.

The list includes:

- storm water discharges from industrial plant yards, immediate access roads, and rail lines used or traveled by carriers of raw materials;
- manufactured products, material, or by-products used or created by the facility;
- material handling sites and/or refuse sites used for the application or disposal of process waste waters;
- sites used for the storage and maintenance of material handling equipment;
- sites used for residual treatment, storage, or disposal;
- shipping and receiving areas;
- manufacturing buildings;
- storage areas (including tank farms) for raw materials, and intermediate and finished products; and

- areas where industrial activity has taken place in the past and significant materials remain and are exposed to storm water.

The term "material handling" is also defined. Material handling activities include the storage, loading and unloading, transportation, or conveyance of any raw material, intermediate product, finished product, by-product, or waste product. However, certain areas are excluded from the definition of "associated with industrial activity." The term "excludes areas located on plant lands separate from the plant's industrial activities, such as office buildings and accompanying parking lots as long as the drainage from the excluded areas is not mixed with storm water drained from the above described areas."

In promulgating the rule, the EPA clarified in the preamble that it intended to cover, in its reference to "immediate access roads (including haul roads)," only those roads "which are exclusively or primarily dedicated for use by the industrial facility." The EPA specifically did not intend that facilities submit permit applications for discharges from county, state, or Federal public access roads. Examples of such public access Federal roads include highways or BLM roads that happen to be used by the facility. Furthermore, the EPA did not intend to cover roads that are used to transport bulk samples of raw materials or products (such as prospecting samples from potential mines) in small scale prior to industrial production. In this example, the EPA concluded that permit requirements should not apply to "operations which are not yet industrial activities."

Water Quality Violators or Significant Polluters

Any discharge which is determined by the EPA (or an authorized state program administrator) to be contributing to a violation of a water quality standard, or which is a significant contributor of pollutants to waters of the United States, requires an NPDES permit. These are determined on a case-by-case basis. The term "significant contributor of pollutants" is used by the EPA for the first time in these regulations. The Agency intends to use this criterion to regulate any other significant dischargers that are not already covered by the rule. However, in order to make use of this provision, an NPDES official would have to make a specific determination under the administrative procedures of the Clean Water Act and applicable regulations.

SARA Title III, Section 313 Facilities and Water Priority Chemicals

The EPA's core general permit establishes additional plan requirements for storm water discharges associated with industrial activity from facilities subject to reporting requirements under Section 313 of Title III of SARA for chemicals classified as "Section 313 water priority chemicals." The plans must describe and ensure the implementation of practices that are necessary to provide for conformance with the following guidelines.

In areas where Section 313 water priority chemicals are handled, appropriate containment, drainage control, and/or diversionary structures must be provided. At a minimum, one of the following preventive systems or its equivalent must be used:

- curbing, culverting, gutter, sewers, or other forms of drainage control to prevent or minimize the potential for storm water run-off to come into contact with significant sources of pollutants; or
- roofs, covers or other forms of appropriate protection to prevent storage piles from exposure to storm water and wind.

The plan must include a complete discussion of measures taken to conform with guidelines specified in the permit, other effective storm water pollution prevention procedures, and applicable state rules, regulations, and guidelines. These include requirements regarding:

- liquid storage areas where storm water comes into contact with any equipment, tank, container, or other vessel used for Section 313 water priority chemicals;
- material storage areas for water priority chemicals other than liquids, and truck and rail car loading and unloading areas for liquid water priority chemicals;
- areas where water priority chemicals are transferred, processed, or otherwise handled;
- facility site runoff from other areas that might contain water priority chemicals;
- preventive maintenance and housekeeping;
- facility security;
- training; and
- engineering certification.

MONITORING AND REPORTING REQUIREMENTS

In addition to the annual facility inspection requirement, The EPA's core baseline general permit establishes specific monitoring requirements for certain facilities.

Semi-Annual Monitoring Requirements

The following categories of storm water dischargers must monitor their storm water discharges at least semi-annually (2 times per year). These discharges must export their results in the manner provided in the permit (see discussion below). In addition to the parameters listed below, the permittee must provide the date and duration of the storm event(s) sampled, rainfall measurements or estimates of the storm event, and an estimate of the total volume of the discharge sampled.

SARA Title III, Section 313 Facilities

Facilities that handle Section 313 water priority chemicals are required to monitor storm water that is discharged from the facility that comes into contact with any equipment, tank, container or other vessel, or area used for storage of water priority chemicals, or located at a truck or rail car loading or unloading area for the following parameters:

- oil and grease (mg/L);
- five day biochemical oxygen demand (BOD5) (mg/L);
- chemical oxygen demand (COD) (mg/L);
- total suspended solids (mg/L);
- total kjeldahl nitrogen (TKN) (mg/L);
- total phosphorus (mg/L);
- pH;
- acute whole effluent toxicity (in accordance with the procedures established in Part VI.C. of the general permit, which must be initiated within 180 days after issuance of the permit or within 90 days after the commencement of a new discharge); and
- any water priority chemical.

These facilities must monitor samples collected during the sampling periods running from January to June and July to December. The results obtained during the sampling periods must be submitted on a discharge monitoring report by the following January 28. A separate report is required for each sampling period. These samples are analyzed for the pollutants below:

Industrial

POLLUTANT	First Flush Grab Sample	Flow-Weighted Composite Sample	Municipal Flow-Weighted Composite Sample
Oil and Grease	X		X
pH	X		X
Biological Oxygen Demand (BOD)	X	X	X
Total Suspended Solids (TSS)	X	X	X
Total Phosphorous	X	X	X
Nitrate and Nitrite Nitrogen	X	X	X
Total Kjeldhl Nitrogen	X	X	X
Any Pollutant in the Facility's Effluent Guideline	X	X	
Any Pollutant in the Facility's NPDES Permit	X	X	
Any Pollutant in The EPA Form 2F Tables Believed to be Present	X	X	
Total Dissolved Solids			X
Fecal Strepto Coccus			X
Fecal Coliform			X
Dissolved Phosphorus			X
Total Ammonia Plus Organic Nitrogen			X
13 Metals, Total Cyanide, and Total Phenol			X
28 Volatile Compounds			X
25 Pesticides			X

This summary of regulation does not cover all of the details. For more information, please refer to the final rule published in the November 16, 1990 Federal Register. State regulations may differ from these Federal regulations.

General Permit Monitoring Requirements

Type of Facility	Type of Storm Water Discharge	Parameters	Monitoring Frequency	Reporting Frequency
Industrial Facilities with Coal Piles	Storm water discharges from coal pile runoff	Oil and Grease, pH, TSS, Total Recoverable Copper, Total Recoverable Nickel, Total Recoverable Zinc	Semi-annual	Annual
Battery Reclaimers	Storm water discharges from areas for storage of lead acid batteries reclamation products, or waste products, and areas used for lead acid battery reclamation	Oil and Grease, COD, TSS, pH, Total Recoverable Copper, Total Recoverable Lead	Semi-annual	Annual
Airports (with over 50,000 flight operations per year)	Storm water discharges from aircraft or airport deicing areas	Oil and Grease, BOD5, COD, TSS, pH, and the primary ingredient used in the deicing materials	Annual	Retain onsite
Coal-fired Steam Electric Facilities	Storm water discharges from coal handling sites (other than runoff from coal piles which is not eligible for coverage under this permit)	Oil and Grease, pH, and the primary ingredient used in the deicing materials	Annual	Retain onsite
Animal Handling /Meat Packing Facilities	Storm water discharges from animal handling areas, manure management areas, production waste management areas exposed to precipitation at meat packing plants, poultry packing plants, facilities that manufacture animal and marine fats and oils.	Oil and Grease, pH, TSS, Total Kjeldahl Nitrogen (TKN), Total Phosphorus, pH, Fecal Coliform	Annual	Retain onsite
Chemical and Allied Product Manufacturers Rubber Manufacturers (SIC 28 and 30)	Storm water discharges that come into contact with solid chemical storage piles.	Oil and Grease, COD, TSS, pH, any pollutant limited in an effluent guideline to which the facility is subject	Annual	Retain onsite

Automobile Junkyards	Storm Water discharges exposed to: (a) over 250 auto/truck bodies with drivelines, 250 drivelines, or any combination thereof, (b) over 500 auto/truck units, (c) over 100 units dismantled per year where automotive fluids are drained or stored	Oil and Grease, COD, TSS, pH any pollutant limited in an effluent guideline to which the facility is subject	Annual	Retain onsite
EPCRA, Section 313 Facilities Subject to Reporting Requirements for Water Priority Chemicals	Storm water discharges that come into contact with any equipment, tank, container, or other vessel or area used for storage of a Section 313 water priority chemical, or located at a truck or rail car loading or unloading area where a Section 313 water priority chemical is handled	Oil and Grease, pH, TSS, Total Kjeldahl Nitrogen (TKN), Total Phosphorus, pH, acute whole effluent toxicity, any Section 313 water priority chemical for which the facility reports	Semi-annual	Annual
Land Disposal Units/ Incinerators/ BIFs	Storm water discharges from active or inactive land disposal units without a stabilized cover that have received any waste form industrial facilities other than construction sites; and storm water discharges from incinerators and BIF's that burn hazardous waste	Ammonia, Total Recoverable Magnesium, Magnesium, (dissolved). Total Kjeldahl Nitrogen, COD, TDS, TOC, Oil and Grease, pH, Total Recoverable Arsenic, Total Recoverable Barium, Total Recoverable Cadmium, Total Recoverable Chromium, Total Recoverable Cyanide, Total Recoverable Lead, Total Mercury, Total Recoverable Selenium, Total Recoverable Silver, Acute Whole Effluent Toxicity	Semi-annual	Annual
Wood Treatment Facilities	Storm water discharges from areas that are used for wood treatment, wood surface application or storage of treated or surface protected wood Facilities that use chlorophenolic formulations Facilities that use creosote formulations Facilities that use chromium-arsenic formulations	Oil and Grease, pH, COD, TSS Plus Pentachlorophenol and Acute Whole Effluent Toxicity Plus Acute Whole Effluent Toxicity Plus Total Recoverable Arsenic, Total Recoverable Chromium, Total Recoverable Copper	Semi-annual	Annual
Lime Manufacturing Facilities	Storm water discharges that have come into contact with lime storage piles	Oil and Grease, COD, TSS, pH any pollutant limited in an effluent guideline to which the facility is subject	Annual	Retain onsite

Oil-fired Steam Electric Power Generating Facilities	Storm water discharges form oil handling sites	Oil and Grease, COD, TSS, pH any pollutant limited in an effluent guideline to which the facility is subject	Annual	Retain onsite
Cement Manufacturing Facilities and Cement Kilns	All storm water discharges associated with industrial activity (except those from arterial storage piles that are not eligible for coverage under this permit)	Oil and Grease, COD, TSS, pH any pollutant limited in an effluent guideline to which the facility is subject	Annual	Retain onsite
Ready-mix Concrete Facilities	All storm water discharges associated with industrial activity	Oil and Grease, COD, TSS, pH any pollutant limited in an effluent guideline to which the facility is subject	Annual	Retain onsite
Ship Building and Repairing Facilities	All storm water discharges associated with industrial activity	Oil and Grease, COD, TSS, pH any pollutant limited in an effluent guideline to which the facility is subject	Annual	Retain onsite

WATER PRIORITY CHEMICALS

In 1987, the Clean Water Act was revised by adding Section 402(p) to address storm water. Under the Act, the EPA was required to establish National Pollutant Discharge Elimination System (NPDES) permit application requirements for storm water discharges associated with the industrial activity and municipal separate systems. On November 16, 1990 the EPA issued regulations establishing permit application requirements. These regulations are contained primarily in Part 122, 26 Title 40 of the Code of Federal Regulations.

On September 9, 1992, the EPA issued the General Permit final rules for storm water run-off. For facilities that file under the General Permit and that are involved with SARA Title III, Section 313 reporting, there are specific chemicals on the Section 313 Chemical List that are identified as Water Priority Chemicals. The EPA has identified these chemicals as being especially toxic to water ecosystems. To address this risk, the EPA established specific control requirements to be incorporated into the Storm Water Pollution Prevention Plan (SWPPP), that is required under the General Permit. The SWPPP must be designed to prevent spills and leaks of Water Priority Chemicals, and eliminate or reduce opportunities for exposure of toxic chemicals to storm water, thus protecting receiving waters from toxic discharges.

Storm Water Pollution Prevention

Under the EPA's core baseline general permit, a permittee must develop a storm water pollution prevention plan for the facility. The plan must be prepared in accordance with good engineering practices. The plan must identify potential sources of pollution that may reasonably be expected to affect the quality of storm water discharges from the facility. In addition the plan must describe and ensure the implementation of practices that will be used to reduce the pollutants in storm water discharges and to assure compliance with the terms and conditions of the permit.

Deadline for Plan Preparation and Compliance

Generally, a plan for an industrial storm water discharge existing on or before October 1, 1992 had to be prepared on or before April 1,1993. The facility had to implement and comply with the terms of the plan on or before October 1, 1993.

Plans for facilities where industrial activity commenced after October 1, 1992, but on or before December 31, 1992, had to provide for compliance with the plan and the general permit on or before the date sixty days after commencement of the industrial activity. *Facilities where industrial activity commences after December 31, 1992, must provide for compliance with the terms of the plan and the permit on or before the date of submission of a notice of intent (NOI) to be covered under the permit.*

Core general permit also establishes specific deadline requirements for industrial activity from an oil and gas exploration, production, processing, treatment operation, or transmission facility, and for facilities owned or operated by a municipality that has participated in a group application if the application is rejected or the facility is denied participation in the application. The permit also specifies special deadlines for facilities subject to special plan requirements under Section 313 of Title III of SARA.

Signature and Plan Review

The plan must be signed in accordance with Part VII.G. of the general permit. The plan must be retained on-site at the facility until at least one year after coverage under the permit terminates.

The permittee must make the plan available on request to the EPA or an authorized representative, or, if the discharge is through a municipal separate storm sewer system (MS4), to the MS4.

The EPA may notify the permittee at any time that the plan does not meet the minimum requirements. Within thirty days of such notification, the permittee must make the required changes and submit a certification to the EPA that the changes have been made.

Keeping Plans Current

The permittee must amend the plan whenever there is a change in design, construction, operation, or maintenance that has a significant effect on the potential for the discharge of pollutants or if the storm water pollution prevention plan proves to be ineffective in eliminating or significantly minimizing pollutants in storm water discharges.

Multi-Sector General Permit for SWR

Through the first two quarters of 1997, EPA Regional Offices began a notification process through a letter campaign informing facilities of significant changes in the Permitting Process. Existing permittees prior to September, 1997 are directed to file a Notice of Termination (NOT) of their SWR and apply to file for a new "Multi-Sector General/Industrial" Permit 90 days prior to Sept. 9, 1997. This shall be done with a new Notice of Intent (NOI) to be followed by a current Pollution Prevention Plan. By this action, all previous SWR permits will be considered as obsolete by EPA.

19-Jan-01

SECTION 313 WATER PRIORITY CHEMICALS

WATER PRIORITY CHEMICALS: ARROW GEAR COMPANY

MSDS NO.	MANUFACTURER NAME	PRODUCT NAME	MAX WT	CHEMICAL NAME	%	CHEMICAL WEIGHT	CAS NUMBER	PHYSICAL STATE
7429-90-5	**ALUMINUM**							
9	SAF-T-EZE DIV., STL COMPOUND CORPORATION	SAF-T-EZE NICKEL PREMIUM ANTI-SEIZE	5.00	ALUMINUM	100	5.00	7429-90-5	GEL
101	SUNNEN PRODUCTS COMPANY	SUNNEN HONING STONES	100.00	ALUMINUM	5	5.00	7429-90-5	S
170	VARIOUS	CARBON STEEL - HR & CR LEADED STEEL	10,600.00	ALUMINUM	1	106.00	7429-90-5	S
172	VARIOUS	ALUMINUM ALLOYS, ALUMINUM ALLOYS CONTAINING LEAD	7,200.00	ALUMINUM	99.7	7,178.40	7429-90-5	S
				313 WATER PRIORITY AGGREGATE =		***7,294.40***		
7664-41-7	**AMMONIA**							
89	LAROCHE INDUSTRIES, INC.	AMMONIA	450.00	AMMONIA	99.5	447.75	7664-41-7	L
				313 WATER PRIORITY AGGREGATE =		***447.75***		
7440-41-7	**BERYLLIUM**							
69	BRUSH WELLMAN ENGINEERING MATERIALS	COPPER BERYLLIUM WROUGHT ALLOYS	168.00	BERYLLIUM	2	3.36	7440-41-7	S
171	BRUSH WELLMAN ENGINEERED MATERIALS	COPPER BERYLLIUM WROUGHT ALLOY	275.00	BERYLLIUM	2	5.50	7440-41-7	S
				313 WATER PRIORITY AGGREGATE =		***8.86***		
7440-43-9	**CADMIUM**							
104	ARCONIUM SPECIALTY ALLOYS	OSTALLOY 158	30.00	CADMIUM	10.1	3.03	7440-43-9	S
105	HANDY & HARMAN	SILVER-COPPER-CADMIUM-ZINC BRAZING ALLOYS	10.00	CADMIUM	24	2.40	7440-43-9	S
				313 WATER PRIORITY AGGREGATE =		***5.43***		
7782-50-5	**CHLORINE**							
118	MOBIL OIL CORPORATION	MOBIL ALMO 525	10.00	CHLORINE	0.9	0.09	7782-50-5	L
155	MOBIL OIL CORPORATION	MOBILMET NU	14,764.57	CHLORINE	0.8	118.12	7782-50-5	L
159	MOBIL OIL CORPORATION	MOBILUX EP 023	75.33	CHLORINE	0.63	0.47	7782-50-5	GEL

 COPYRIGHT 2000, VANGUARD ENVIRONMENTAL, INC.

WATER PRIORITY CHEMICALS: ARROW GEAR COMPANY

MSDS NO.	MANUFACTURER NAME	PRODUCT NAME	MAX WT	CHEMICAL NAME	%	CHEMICAL WEIGHT	CAS NUMBER	PHYSICAL STATE
			313 WATER PRIORITY AGGREGATE =			*118.68*		
7440-47-3	**CHROMIUM**							
10	MANCHASTER TOOL COMPANY	MANCHASTER TOOL CARBIDE	10.00	CHROMIUM	5	0.50	7440-47-3	S
14	FELLOWS CORPORATION	HIGH SPEED STEELS AND TUNGSTEN CARBIDES	100.00	CHROMIUM	4.25	4.25	7440-47-3	S
32	SANDVIK COROMANT COMPANY	ALL SANDVIK COROMANT CEMENTED TUNGSTEN CARBIDE	10.00	CHROMIUM	3	0.30	7440-47-3	S
40	SANDVIK COROMANT COMPANY	CBN	10.00	CHROMIUM	2	0.20	7440-47-3	S
41	SANDVIK COROMANT COMPANY	PCD	10.00	CHROMIUM	2	0.20	7440-47-3	S
49	ITW FLUID PRODUCTS GROUP	YELLOW DXX-526, DLT, DXX-340	72.65	CHROMIUM	5	3.63	7440-47-3	L
172	VARIOUS	ALUMINUM ALLOYS, ALUMINUM ALLOYS CONTAINING LEAD	7,200.00	CHROMIUM	0.5	36.00	7440-47-3	S
173	VARIOUS	STAINLESS STEEL	5,700.00	CHROMIUM	30	1,710.00	7440-47-3	S
183	SANDVIK COROMANT COMPANY	ALL SANDVIK COROMANT CERMET GRADES	10.00	CHROMIUM	3	0.30	7440-47-3	S
			313 WATER PRIORITY AGGREGATE =			*1,755.38*		
7440-50-8	**COPPER**							
39	SANDVIK COROMANT COMPANY	MOLYKOTE® 1000 PASTE	10.00	COPPER	7	0.70	7440-50-8	PST
48	NORTON COMPANY	DIAMOND OR CUBIC BORON NITRIDE GRINDING WHEELS	5,000.00	COPPER	85	4,250.00	7440-50-8	S
69	BRUSH WELLMAN ENGINEERING MATERIALS	COPPER BERYLLIUM WROUGHT ALLOYS	168.00	COPPER	92.8	155.90	7440-50-8	S
79	DEGUSSA CORPORATION	DEGUSSA 5600 FOIL (MB565)	10.00	COPPER	100	10.00	7440-50-8	S
101	SUNNEN PRODUCTS COMPANY	SUNNEN HONING STONES	100.00	COPPER	5	5.00	7440-50-8	S
105	HANDY & HARMAN	SILVER-COPPER-CADMIUM-ZINC BRAZING ALLOYS	10.00	COPPER	45	4.50	7440-50-8	S
171	BRUSH WELLMAN ENGINEERED MATERIALS	COPPER BERYLLIUM WROUGHT ALLOY	275.00	COPPER	99	272.25	7440-50-8	S
172	VARIOUS	ALUMINUM ALLOYS, ALUMINUM ALLOYS CONTAINING LEAD	7,200.00	COPPER	10	720.00	7440-50-8	S

 COPYRIGHT 2000, VANGUARD ENVIRONMENTAL, INC.

WATER PRIORITY CHEMICALS: ARROW GEAR COMPANY

MSDS NO.	MANUFACTURER NAME	PRODUCT NAME	MAX WT	CHEMICAL NAME	%	CHEMICAL WEIGHT	CAS NUMBER	PHYSICAL STATE
173	VARIOUS	STAINLESS STEEL	5,700.00	COPPER	6	342.00	7440-50-8	S
				313 WATER PRIORITY AGGREGATE =		*5,760.35*		
7439-92-1	**LEAD**							
49	ITW FLUID PRODUCTS GROUP	YELLOW DXX-526, DLT, DXX-340	72.65	LEAD	5	3.63	7439-92-1	L
104	ARCONIUM SPECIALTY ALLOYS	OSTALLOY 158	30.00	LEAD	27.3	8.19	7439-92-1	S
170	VARIOUS	CARBON STEEL - HR & CR LEADED STEEL	10,600.00	LEAD	1	106.00	7439-92-1	S
172	VARIOUS	ALUMINUM ALLOYS, ALUMINUM ALLOYS CONTAINING LEAD	7,200.00	LEAD	1	72.00	7439-92-1	S
				313 WATER PRIORITY AGGREGATE =		*189.82*		
7440-02-0	**NICKEL**							
7	T.J. MARTIN COMPANY	NICKEL PLATED ABRASIVE PRODUCTS	10.00	NICKEL	100	10.00	7440-02-0	S
9	SAF-T-EZE DIV., STL COMPOUND CORPORATION	SAF-T-EZE NICKEL PREMIUM ANTI-SEIZE	5.00	NICKEL	100	5.00	7440-02-0	GEL
14	FELLOWS CORPORATION	HIGH SPEED STEELS AND TUNGSTEN CARBIDES	100.00	NICKEL	91.9	91.90	7440-02-0	S
40	SANDVIK COROMANT COMPANY	CBN	10.00	NICKEL	0.35	0.04	7440-02-0	S
48	NORTON COMPANY	DIAMOND OR CUBIC BORON NITRIDE GRINDING WHEELS	5,000.00	NICKEL	82	4,100.00	7440-02-0	S
69	BRUSH WELLMAN ENGINEERING MATERIALS	COPPER BERYLLIUM WROUGHT ALLOYS	168.00	NICKEL	22	36.96	7440-02-0	S
171	BRUSH WELLMAN ENGINEERED MATERIALS	COPPER BERYLLIUM WROUGHT ALLOY	275.00	NICKEL	2.2	6.05	7440-02-0	S
172	VARIOUS	ALUMINUM ALLOYS, ALUMINUM ALLOYS CONTAINING LEAD	7,200.00	NICKEL	0.5	36.00	7440-02-0	S
173	VARIOUS	STAINLESS STEEL	5,700.00	NICKEL	27	1,539.00	7440-02-0	S
183	SANDVIK COROMANT COMPANY	ALL SANDVIK COROMANT CERMET GRADES	10.00	NICKEL	15	1.50	7440-02-0	S
				313 WATER PRIORITY AGGREGATE =		*5,826.45*		
7723-14-0	**PHOSPHORUS**							
48	NORTON COMPANY	DIAMOND OR CUBIC BORON NITRIDE GRINDING WHEELS	5,000.00	PHOSPHORUS	1	50.00	7723-14-0	S

 COPYRIGHT 2000, VANGUARD ENVIRONMENTAL, INC.

WATER PRIORITY CHEMICALS: ARROW GEAR COMPANY

MSDS NO.	MANUFACTURER NAME	PRODUCT NAME	MAX WT	CHEMICAL NAME	%	CHEMICAL WEIGHT	CAS NUMBER	PHYSICAL STATE
170	VARIOUS	CARBON STEEL - HR & CR LEADED STEEL	10,600.00	PHOSPHORUS	1	106.00	7723-14-0	S
173	VARIOUS	STAINLESS STEEL	5,700.00	PHOSPHORUS	2	114.00	7723-14-0	S
				313 WATER PRIORITY AGGREGATE =		*270.00*		
75-56-9	**PROPYLENE OXIDE**							
65	THE TOLBER DIVISION	MICCROSTOP	7.93	PROPYLENE OXIDE	7	0.56	75-56-9	L
				313 WATER PRIORITY AGGREGATE =		*0.56*		
7440-22-4	**SILVER**							
48	NORTON COMPANY	DIAMOND OR CUBIC BORON NITRIDE GRINDING WHEELS	5,000.00	SILVER	85	4,250.00	7440-22-4	S
79	DEGUSSA CORPORATION	DEGUSSA 5600 FOIL (MB565)	10.00	SILVER	100	10.00	7440-22-4	S
105	HANDY & HARMAN	SILVER-COPPER-CADMIUM-ZINC BRAZING ALLOYS	10.00	SILVER	50	5.00	7440-22-4	S
				313 WATER PRIORITY AGGREGATE =		*4,265.00*		
108-88-3	**TOLUENE**							
49	ITW FLUID PRODUCTS GROUP	YELLOW DXX-526, DLT, DXX-340	72.65	TOLUENE	5	3.63	108-88-3	L
70	MALLINCKRODT BAKER, INC.	TOLUENE	43.09	TOLUENE	100	43.09	108-88-3	L
102	MAYWOOD COMPANY	MAYWOOD ACRYL LACQUER THINNER	136.96	TOLUENE	25	34.24	108-88-3	L
110	RANDOLPH PRODUCTS COMPANY	AMS-3100~YELLOW ZINC CHROMATE PRIMER REV G PRIMER	38.80	TOLUENE	5	1.94	108-88-3	L
127	MOBIL OIL CORPORATION	MOBIL VELOCITE OIL NO. 10	1,436.37	TOLUENE	0.01	0.14	108-88-3	L
166	MOBIL OIL CORPORATION	MOBIL MULTI-PURPOSE ATF	2,204.66	TOLUENE	0.09	1.98	108-88-3	L
				313 WATER PRIORITY AGGREGATE =		*85.03*		
7440-62-2	**VANADIUM**							
170	VARIOUS	CARBON STEEL - HR & CR LEADED STEEL	10,600.00	VANADIUM	1	106.00	7440-62-2	S
				313 WATER PRIORITY AGGREGATE =		*106.00*		

COPYRIGHT 2000. VANGUARD ENVIRONMENTAL, INC.

WATER PRIORITY CHEMICALS: ARROW GEAR COMPANY

MSDS NO.	MANUFACTURER NAME	PRODUCT NAME	MAX WT	CHEMICAL NAME	%	CHEMICAL WEIGHT	CAS NUMBER	PHYSICAL STATE
1330-20-7 XYLENE								
18	CARBIT PAINT COMPANY	28Y10LF ORANGE S.D. GLOSS EN	10.00	XYLENE	2	0.20	1330-20-7	L
19	CARBIT PAINT COMPANY	28E9 ANSI 49 MED LT GREY SD GL	50.00	XYLENE	3	1.50	1330-20-7	L
43	ERICH NUSSLE OHG	CONDURSAL 0090	20.00	XYLENE	25	5.00	1330-20-7	L
44	ERICH NUSSLE OHG	CONDURSAL N523	20.00	XYLENE	100	20.00	1330-20-7	PST
102	MAYWOOD COMPANY	MAYWOOD ACRYL LACQUER THINNER	136.96	XYLENE	2	2.74	1330-20-7	L
110	RANDOLPH PRODUCTS COMPANY	AMS-3100~YELLOW ZINC CHROMATE PRIMER REV G PRIMER	38.80	XYLENE	5	1.94	1330-20-7	L
149	MOBIL OIL CORPORATION	MOBILITH AW-2	100.00	XYLENE	0.13	0.13	1330-20-7	GEL
180	THE DEXTER CORPORATION	POLYURETHANE CATALYST	8.85	XYLENE	20	1.77	1330-20-7	L
				313 WATER PRIORITY AGGREGATE =		***33.28***		
7440-66-6 ZINC								
39	SANDVIK COROMANT COMPANY	MOLYKOTE® 1000 PASTE	10.00	ZINC	4	0.40	7440-66-6	PST
79	DEGUSSA CORPORATION	DEGUSSA 5600 FOIL (MB565)	10.00	ZINC	100	10.00	7440-66-6	S
105	HANDY & HARMAN	SILVER-COPPER-CADMIUM-ZINC BRAZING ALLOYS	10.00	ZINC	30	3.00	7440-66-6	S
118	MOBIL OIL CORPORATION	MOBIL ALMO 525	10.00	ZINC	0.09	0.01	7440-66-6	L
125	MOBIL OIL CORPORATION	MOBIL DTE 11M	400.05	ZINC	0.1	0.40	7440-66-6	L
132	MOBIL OIL CORPORATION	MOBIL DTE 26	22,297.17	ZINC	0.1	22.30	7440-66-6	L
133	MOBIL OIL CORPORATION	MOBIL DTE 25	7,390.64	ZINC	0.1	7.39	7440-66-6	L
149	MOBIL OIL CORPORATION	MOBILITH AW-2	100.00	ZINC	0.15	0.15	7440-66-6	GEL
159	MOBIL OIL CORPORATION	MOBILUX EP 023	75.33	ZINC	0.22	0.17	7440-66-6	GEL
172	VARIOUS	ALUMINUM ALLOYS, ALUMINUM ALLOYS CONTAINING LEAD	7,200.00	ZINC	10	720.00	7440-66-6	S

 COPYRIGHT 2000, VANGUARD ENVIRONMENTAL, INC.

WATER PRIORITY CHEMICALS: ARROW GEAR COMPANY

MSDS NO.	MANUFACTURER NAME	PRODUCT NAME	MAX WT	CHEMICAL NAME	%	CHEMICAL WEIGHT	CAS NUMBER	PHYSICAL STATE
177	MOBIL OIL CORPORATION	MOBIL DTE 13M	146.48	ZINC	0.1	0.15	7440-66-6	1.
				313 WATER PRIORITY AGGREGATE =		*763.96*		
				TOTAL WEIGHT FOR ALL 313 WATER PRIORITY CANDIDATES =		*26,930.95*		

 COPYRIGHT 2000, VANGUARD ENVIRONMENTAL, INC.

VANGUARD
ENVIRONMENTAL, INC.
ENVIRONMENTAL & SAFETY COMPLIANCE SPECIALISTS

Part 11

Toxic Substance Control Act (1976), The Inventory Update Rule (IUR - 1986), & "Form U" Reporting (40 CFR Part 710)

The "Mother" of Legislating Toxic Chemicals

The Toxic Substances Control Act (TSCA) was enacted on October 11, 1976. Under its provisions, the EPA has compiled a list of over 78,000 regulated chemicals, and that list increases, on average, by about 1,000 chemicals each year. TSCA has been amended three times, resulting in a total of four titles: 1. Control of Toxic Substances; 2. The Asbestos Hazard Emergency Response Act; 3. The Indoor Radon Abatement Act; 4. The Lead-based Paint Exposure Reduction Act. The scope of this section, though, is limited only to item number one: the Control of Toxic Substances.

TSCA requires manufacturers to provide data on the health and environmental effects of chemical substances and mixtures, and gives EPA comprehensive authority to regulate the manufacture, use, distribution in commerce, and disposal of chemical substances. TSCA defines "manufacture" as not only the traditional notions of manufacturing, processing, and production, but also the distribution and importation of regulated chemical substances or mixtures. In practice, EPA interprets the term to apply to persons who purchase a chemical and hold it for purposes of later distribution.

TSCA authorizes EPA as follows:

- (TSCA: Sec. 4) - Authority to require testing of chemicals which may present a significant risk or which are produced in substantial quantities resulting in exposure to humans and/or the environment;

- (TSCA: Sec. 5) - Premanufacture [Premanufacture Notification (PMN)] review of new chemical substances *prior* to their commercial production and introduction to the marketplace;
- (TSCA: Sec. 6) - Authority to limit or prohibit the manufacture, use, distribution, and disposal of existing chemical substances;
- (TSCA: Sec. 8) - Record keeping and reporting requirements to ensure that the EPA Administrator has continuous access to new information on chemical substances, including the "who, what, when, where, in what volume, and under what conditions" such chemicals are used throughout a given fiscal year;
- (TSCA: Sec. 12) - Export notice requirements for foreign governments; and
- (TSCA: Sec. 13) - Import certification requirements so that all chemical substances imported into the U.S. comply with the Act.

New Chemical Review and Premanufacture Notification (PMN) Mandate

The PMN must contain:

- Information such as the identity of the chemical categories of use, amounts manufactured, by-products, employee exposure and the manner or method of disposal to the extent known or "reasonably ascertainable";
- Any test data related to the effects of a chemical in the submitter's possession or control on health or the environment; and
- A description of any other data concerning the health and environmental effects of the chemical, insofar as they are known or "reasonable ascertainable" by the submitter.

The EPA's policy regarding TSCA is that manufacturers and processors of chemical substances should bear the responsibility for developing adequate data regarding their effects of health and the environment. Under Sec. 5(a) of the Act, EPA must review the PMN within 90 days of its submission. During its review, the EPA must assess the potential risks associated with the manufacture, processing, distribution, use, and disposal of the new substance based upon information supplied by the submitter and available from various Agency databases and the scientific literature, and, ultimately, the Agency's own professional judgment. If the EPA takes no regulatory action within the 90 day review period, the submitter may commence commercial manufacture or importation without the need for prior Agency approval. Within 30 days of commencing manufacture or importation, the submitter must file a Notice of Commencement (NOC) of Manufacture or Import. The NOC certifies that commercial manufacture or importation actually has occurred. After receiving an NOC, EPA will add the PMN substance to the Inventory, and the new chemical will then become an "existing" chemical under TSCA.

The above statute provides EPA with three means to prevent, delay, or limit manufacture after the 90 day review period expires:

- The Agency may delay manufacture up to an additional 90 days for "good cause;"
- The Agency may issue a proposed order to limit or prohibit manufacture if it is determined that information is "insufficient to permit a reasoned evaluation" of health and environmental effects; and
- The Agency may propose a rule limiting, conditioning, or totally banning manufacture if there is a "reasonable basis to conclude that the manufacture presents unreasonable risk of injury to health or the environment."

Each of these three actions is subject to judicial review.

The Inventory Update Rule (IUR) - Form U

In June of 1986, the EPA issued the Inventory Update Rule (IUR), also known as "Form U Reporting," requiring manufacturers and importers of certain chemicals listed on the Inventory to report current data on production volume, plant site, and site-limited statistics. Such reporting is required every four years for all chemical substances listed on the Inventory, except for polymers, micro-organisms, naturally occurring substances, and inorganics.

Under the rule, any company that manufactures or imports any "reportable substance" for commercial purposes equal to or greater than 10,000 pounds in annual usage during the most recent complete corporate fiscal year immediately preceding the reporting year is obligated to file the report. To date, Form U has been required for 1986, 1990, and 1994. Since companies use different dates for their fiscal years, the reporting year in question will vary from one company to the next.

The IUR requires each manufacturer or importer subject to the rule to maintain specific records documenting the information submitted to EPA. Significantly, production records for substances manufactured or imported at less than 10,000 pounds in annual usage must be maintained to justify, through defensible documentation, a decision not to report.

- 8a. Requires chemical manufacturers or processors to report production, release, & exposure data on some 245 certain toxic chemicals on the IUR;
- 8b. Requires that those owner/operators producing or importing 10,000 pounds or more annually report production and site information to EPA every four years (except for companies grossing less than four million dollars in the most recent fiscal year prior to the reporting year)
- 8c. Requires that records be maintained relative to adverse health and environmental effects of these chemicals
- 8d. Requires that any unpublished health and safety studies of the substance in question be reported to the EPA.
- 8e. Requires the immediate reporting of any information indicating that a

chemical may present a substantial risk to health or the environment.

SUMMATION OF TWO MAJOR CRITERIA TRIGGERING "FORM U" REPORTING

Volume Threshold: 10,000 lbs. Manufactured or Imported in Previous Corporate Fiscal Year

Reporting is required for a chemical substance only if the company in question manufactured or imported 10,000 pounds or more of the substance at any single site it owned or controlled during the corporate fiscal year immediately preceding the reporting period. If during the year it manufactured 10,000 lbs. or more of the substance at some sites and less than 10,000 lbs. at other sites, it needs to report the substance only for those sites at which it manufactured or imported 10,000 lbs. or more. Companies should add the manufacturing and importation volume at each site to determine whether the 10,000 lb. threshold has been met. For example, if it manufactured 5,000 pounds of a reportable substance and imported 6,000 lbs. of the same substance, it must report. Although mixtures [see definition at 40 CFR 710.2(q)] are not reportable, the chemical substances of which a mixture is comprised are reportable. If a company manufactures the substances as part of a mixture(s), it must determine for each substance in the mixture(s) whether the production volume was over 10,000 pounds. This is commonly called the "aggregate total" ruling. Similarly, if it imports a mixture, it must determine for each substance in the mixture whether its importation volume was 10,000 lbs. or more. Companies reporting under "Form U" must keep records to support or defend the company's position on just how the report was developed. Moreover, even if a company manufactures/imports less than 10,000 lbs of a reportable substance at a site, records must be maintained documenting that fact.

Small Manufacturers.

Small manufacturers are usually exempt from reporting under the IUR. If a company's total annual sales, combined with those of its parent company, domestic or foreign (if any), do not exceed $4 million, regardless of annual production volume, it qualifies as a small manufacturer, and therefore, is not required to report. However, even when a company qualifies as a small manufacturer it must still report if it produced 10,000 lbs. or more of a reportable substance, or if the substance is subject to Sections 4, 5(b)(4), 5(e), 6, or 7 of the Act.

All these peripheral issues are screened under your Chemical Hazard Analysis in this Document Book.

Exemptions

Persons who manufacture or import reportable substances under the following circumstances are not required to report under the Inventory Update Rule:

- The substance is produced or imported solely in small quantities for research and development.

- The chemical substance is imported as part of an article. An article is defined as "a manufactured item which (1) is formed to a specific shape or design during manufacture, (2) has end use functions(s) dependent in whole or in part upon its shape or design during end use, and (3) has either no change of chemical composition during its end use or only those changes resulting in compositions which have no commercial purpose separate from that of the article. Fluids and particles are not considered articles regardless of shape or design.

- The substance is manufactured as an impurity, byproduct, or non-isolated intermediate, or in a manner incidental to another operation or upon end use of another substance or mixture.

19-Jan-01

TSCA INVENTORY UPDATE RULE - "FORM U"

TSCA "FORM U" CANDIDATES: ARROW GEAR COMPANY

ID	MSDS NO.	MANUFACTURER NAME	PRODUCT NAME	MAXIMUM WEIGHT	CHEMICAL NAME	%	CHEMICAL WEIGHT	CAS NUMBER	PHYSICAL STATE
		67-63-0 ISOPROPYL ALCOHOL							
191	49	ITW FLUID PRODUCTS GROUP	YELLOW DXX-526, DLT, DXX-340	72.65	ISOPROPYL ALCOHOL	5	3.63	67-63-0	L
200	51	ITW FLUID PRODUCTS GROUP	STEEL BLUE; DX-100	70.15	ISOPROPYL ALCOHOL	5	3.51	67-63-0	L
208	52	ITW FLUID PRODUCTS GROUP	STEEL RED; DX-986, DX-296; RED DL	70.15	ISOPROPYL ALCOHOL	5	3.51	67-63-0	L
251	77	ULTRAMATIC EQUIPMENT COMPANY	LR-600-S	16.70	ISOPROPYL ALCOHOL	1	0.17	67-63-0	L
265	83	ACHESON COLLOIDS COMPANY	DAG 154	826.75	ISOPROPYL ALCOHOL	50	413.37	67-63-0	L
271	85	SHELL OIL COMPANY	ISOPROPYL ALCOHOL	1,811.96	ISOPROPYL ALCOHOL	100	1,811.96	67-63-0	L
332	106	INDEPENDENT INK, INC.	73X WHITE MARKING INK	10.86	ISOPROPYL ALCOHOL	25	2.71	67-63-0	L
335	107	INDEPENDENT INK, INC	73X BLACK MARKING INK	8.35	ISOPROPYL ALCOHOL	33	2.76	67-63-0	L
					TSCA CHEMICAL AGGREGATE =		***2,241.62***		
		67-64-1 ACETONE							
315	102	MAYWOOD COMPANY	MAYWOOD ACRYL LACQUER THINNER	136.96	ACETONE	21	28.76	67-64-1	L
440	157	MOBIL OIL CORPORATION	MOBILTEMP SHC 32	50.00	ACETONE	5	2.50	67-64-1	GEL
					TSCA CHEMICAL AGGREGATE =		***31.26***		
		71-36-3 BUTYL ALCOHOL							
186	49	ITW FLUID PRODUCTS GROUP	YELLOW DXX-526, DLT, DXX-340	72.65	BUTYL ALCOHOL	30	21.80	71-36-3	L
199	51	ITW FLUID PRODUCTS GROUP	STEEL BLUE; DX-100	70.15	BUTYL ALCOHOL	5	3.51	71-36-3	L
206	52	ITW FLUID PRODUCTS GROUP	STEEL RED; DX-986, DX-296; RED DL	70.15	BUTYL ALCOHOL	5	3.51	71-36-3	L

COPYRIGHT 2000, VANGUARD ENVIRONMENTAL, INC.

TSCA "FORM U" CANDIDATES: ARROW GEAR COMPANY

ID	MSDS NO.	MANUFACTURER NAME	PRODUCT NAME	MAXIMUM WEIGHT	CHEMICAL NAME	%	CHEMICAL WEIGHT	CAS NUMBER	PHYSICAL STATE
261	81	STANCHEM, INC.	CORROSION VARNISH	24.00	BUTYL ALCOHOL	20	4.80	71-36-3	L
269	83	ACHESON COLLOIDS COMPANY	DAG 154	826.75	BUTYL ALCOHOL	5	41.34	71-36-3	L
346	110	RANDOLPH PRODUCTS COMPANY	AMS-3100-YELLOW ZINC CHROMATE PRIMER REV	38.80	BUTYL ALCOHOL	15	5.82	71-36-3	L
					TSCA CHEMICAL AGGREGATE =		***80.77***		
	75-56-9	**PROPYLENE OXIDE**							
231	65	THE TOLBER DIVISION	MICCROSTOP	7.93	PROPYLENE OXIDE	7	0.56	75-56-9	L
					TSCA CHEMICAL AGGREGATE =		***0.56***		
	78-83-1	**ISOBUTYL ALCOHOL**							
347	110	RANDOLPH PRODUCTS COMPANY	AMS-3100-YELLOW ZINC CHROMATE PRIMER REV	38.80	ISOBUTYL ALCOHOL	10	3.88	78-83-1	L
					TSCA CHEMICAL AGGREGATE =		***3.88***		
	78-93-3	**METHYL ETHYL KETONE**							
230	65	THE TOLBER DIVISION	MICCROSTOP	7.93	METHYL ETHYL KETONE	75	5.95	78-93-3	L
317	102	MAYWOOD COMPANY	MAYWOOD ACRYL LACQUER THINNER	136.96	METHYL ETHYL KETONE	9	12.33	78-93-3	L
					TSCA CHEMICAL AGGREGATE =		***18.28***		
	96-29-7	**2-BUTANONE OXIME**							
64	18	CARBIT PAINT COMPANY	28Y10LF ORANGE S.D. GLOSS EN	10.00	2-BUTANONE OXIME	0.13	0.01	96-29-7	L
68	19	CARBIT PAINT COMPANY	28E9 ANSI 49 MED LT GREY SD GL	50.00	2-BUTANONE OXIME	0.17	0.09	96-29-7	L
					TSCA CHEMICAL AGGREGATE =		***0.10***		
	115-86-6	**TRIPHENYL PHOSPHATE**							
424	149	MOBIL OIL CORPORATION	MOBILITH AW-2	100.00	TRIPHENYL PHOSPHATE	0.3	0.30	115-86-6	GEL

COPYRIGHT 2000, VANGUARD ENVIRONMENTAL, INC.

TSCA "FORM U" CANDIDATES: ARROW GEAR COMPANY

ID	MSDS NO.	MANUFACTURER NAME	PRODUCT NAME	MAXIMUM WEIGHT	CHEMICAL NAME	%	CHEMICAL WEIGHT	CAS NUMBER	PHYSICAL STATE
467	167	MOBIL OIL CORPORATION	MOBIL SHC 632	144.81	TRIPHENYL PHOSPHATE	0.21	0.30	115-86-6	L
469	168	MOBIL OIL CORPORATION	MOBIL SHC 634	145.14	TRIPHENYL PHOSPHATE	0.21	0.30	115-86-6	L
					TSCA CHEMICAL AGGREGATE =		***0.91***		
123-86-4	**BUTYL ACETATE**								
185	49	ITW FLUID PRODUCTS GROUP	YELLOW DXX-526, DLT, DXX-340	72.65	BUTYL ACETATE	50	36.33	123-86-4	L
197	51	ITW FLUID PRODUCTS GROUP	STEEL BLUE; DX-100	70.15	BUTYL ACETATE	50	35.07	123-86-4	L
203	52	ITW FLUID PRODUCTS GROUP	STEEL RED; DX-986, DX-296; RED DL	70.15	BUTYL ACETATE	50	35.07	123-86-4	L
260	81	STANCHEM, INC.	CORROSION VARNISH	24.00	BUTYL ACETATE	24	5.76	123-86-4	L
263	82	STANCHEM, INC.	THINNER	20.40	BUTYL ACETATE	25	5.10	123-86-4	L
320	102	MAYWOOD COMPANY	MAYWOOD ACRYL LACQUER THINNER	136.96	BUTYL ACETATE	5	6.85	123-86-4	L
524	180	THE DEXTER CORPORATION	POLYURETHANE CATALYST	8.85	BUTYL ACETATE	20	1.77	123-86-4	L
					TSCA CHEMICAL AGGREGATE =		***125.95***		
141-78-6	**ETHYL ACETATE**								
190	49	ITW FLUID PRODUCTS GROUP	YELLOW DXX-526, DLT, DXX-340	72.65	ETHYL ACETATE	5	3.63	141-78-6	L
					TSCA CHEMICAL AGGREGATE =		***3.63***		
822-06-0	**HEXAMETHYLENE-1,6-DIISOCYANATE**								
526	180	THE DEXTER CORPORATION	POLYURETHANE CATALYST	8.85	HEXAMETHYLENE-1,6-DIISOCYANATE	10	0.89	822-06-0	L
					TSCA CHEMICAL AGGREGATE =		***0.89***		
1330-78-5	**PHOSPHORIC ACID, TRIS(METHYLPHENYL) ESTER**								
390	131	MOBIL OIL CORPORATION	MOBIL DTE OIL LIGHT	399.60	PHOSPHORIC ACID, TRIS(METHYLPHENYL) ESTER	0.05	0.20	1330-78-5	L

COPYRIGHT 2000, VANGUARD ENVIRONMENTAL, INC.

TSCA "FORM U" CANDIDATES: ARROW GEAR COMPANY

ID	MSDS NO.	MANUFACTURER NAME	PRODUCT NAME	MAXIMUM WEIGHT	CHEMICAL NAME	%	CHEMICAL WEIGHT	CAS NUMBER	PHYSICAL STATE
418	147	MOBIL OIL CORPORATION	MOBILGEAR 626	148.15	PHOSPHORIC ACID, TRIS(METHYLPHENYL) ESTER	0.04	0.06	1330-78-5	L
419	148	MOBIL OIL CORPORATION	MOBILGEAR 629	148.65	PHOSPHORIC ACID, TRIS(METHYLPHENYL) ESTER	0.04	0.06	1330-78-5	L
429	151	MOBIL OIL CORPORATION	MOBILGEAR 632	149.98	PHOSPHORIC ACID, TRIS(METHYLPHENYL) ESTER	0.04	0.06	1330-78-5	L
468	167	MOBIL OIL CORPORATION	MOBIL SHC 632	144.81	PHOSPHORIC ACID, TRIS(METHYLPHENYL) ESTER	0.06	0.09	1330-78-5	L
470	168	MOBIL OIL CORPORATION	MOBIL SHC 634	145.14	PHOSPHORIC ACID, TRIS(METHYLPHENYL) ESTER	0.06	0.09	1330-78-5	L

TSCA CHEMICAL AGGREGATE = ***0.55***

PRODUCT AGGREGATE WEIGHT= ***6,439.57*** ***TSCA COMPONENT TOTAL =*** ***2,508.39***

COPYRIGHT 2000, VANGUARD ENVIRONMENTAL, INC.

VANGUARD
ENVIRONMENTAL, INC.
ENVIRONMENTAL & SAFETY COMPLIANCE SPECIALISTS

Part 12

RCRA Hazardous Waste Management

A Turning Point in Environmental Law

The first effort to regulate hazardous waste management on a national level occurred in 1976 with the passage by Congress of the Resource Conservation and Recovery Act (RCRA). The primary goal of the Act was to encourage the conservation of natural resources through resource recovery. RCRA also provided the statutory basis for Federal hazardous waste regulations. A key section of the Act allowed states to operate the hazardous waste management program *in lieu* of the Environmental Protection Agency (EPA). The regulations which have evolved into the current regulatory program were first issued in May of 1980.

Purpose

The issue of proper management of hazardous wastes is one which suffers from much misinformation and confusion. This is due in part to the constant changes in Federal and state regulatory programs and the complexity of those programs.

Hazardous waste statutes place the primary responsibility for ensuring that hazardous wastes are properly managed on the person who generates those wastes. The generator must identify all hazardous wastes and be certain that they are transported and disposed of in accordance with the law. While the generator can contract with hazardous waste contractors or consultants to perform these activities on

his behalf, the ultimate responsibility for complying with the laws remains with the generator of the waste. For this reason, it is important for all generators of hazardous or potentially hazardous wastes to become familiar with the statutes and regulations that apply to them.

WHO GENERATES HAZARDOUS WASTE?

"GENERATOR"...Defined

A generator is defined as any *person*, by site, whose act or process produces a hazardous waste identified or listed in 40 CFR Part 261 or whose act first causes a hazardous waste to become subject to regulation. A *person* being any individual, trust, firm, joint stock company, Federal agency, corporation, partnership, association, state, municipality, commission, or political subdivision of a state or any interstate body.

Hazardous wastes are generated from many different chemical products and by many different types of businesses and activities. Large generators tend to be manufacturers of various products while small generators are most often in the service industries. Examples of industries and processes which typically generate hazardous waste include:

- Chemical Manufacturing
- Metal Fabrication
- Fiberglass Fabrication
- Chemical Formulation
- Wood Products Manufacturing
- Textile Manufacturing
- Metal Plating and Finishing
- Sandblasting Operations
- Pesticide Applicators
- Laboratories
- Vehicle Repair and Maintenance
- Furniture Refinishing
- Dry Cleaning
- Printing and Related Industries

That list is not exhaustive. Each industry should evaluate all wastes generated to determine whether any of their wastes are hazardous wastes.

What is a Hazardous Waste?

The first step in determining whether an industry generates hazardous wastes is

to evaluate each waste generated against the list below as well as the four lists of hazardous waste described in the next section.

Listed Hazardous Wastes (40 CFR 261, Subpart D)

- Domestic sewage, and any mixture of domestic sewage and other wastes passing through a sewer system to a publicly owned treatment works.
- Point source industrial wastewater discharges subject to permit regulations
- Irrigation return flows.
- Source, special nuclear, or by-product material as defined by the Atomic Energy Act of 1954.
- Pulping liquors that are reclaimed in a recovery furnace and reused in the pulping process, unless accumulated speculatively.
- Solid wastes returned to the soil as fertilizer that are generated by the growing and harvesting of agricultural crops or the raising of animals.
- Mining overburden returned to the mine site.
- Fly ash waste, bottom ash waste, slag waste, and flue gas emission control waste generated primarily from coal or other fossil fuel combinations.
- Drilling fluids, produced waters, and other wastes associated with the exploration, development, or production of crude oil, natural gas, or geothermal energy.
- Certain chrome-bearing wastes either containing exclusively trivalent chromium, or from the leather tanning industry.
- Solid wastes from the extraction, benefication, and processing of ores and minerals.
- Cement kiln dust waste.
- Discarded wood or wood products which fail the EP-Toxicity test or the TCLP for arsenic which are not hazardous for any other reason.

There are four lists of specific chemicals and industrial processes that define hazardous wastes. These are the F-list, K-list, P-list, and the U-list. These wastes have been listed because they either exhibit one of the four characteristics described below or they contain any number of toxic constituents that have been shown to be harmful to human health or the environment.

F-List

The F-list contains hazardous wastes from non-specific sources: that is, the waste may have been generated by various industrial processes. The list consists of solvents commonly used in degreasing, metal treatment baths and sludges, wastewaters from metal plating operations, and dioxin containing chemicals or their precursors. Examples of solvents that are F-listed hazardous wastes, along with their code numbers, are: benzene (F005); carbon tetrachloride (F001); cresylic acid (F004); methyl ethyl ketone (F005); methylene chloride (F001); 1,1,1 tricholorethane (F001); toluene (F005); and trichloroethylene (F001). Solvent mixtures or blends which contain greater than ten percent of one or more of the solvents listed in F001, F002, F003, F004, and F005 are also considered F-listed wastes.

K-List

The K-list contains hazardous wastes generated by specific industrial processes. Examples of industries which generate K-listed wastes include: wood preservation, pigment production, chemical production, petroleum refining, iron and steel production, explosives manufacturing, and pesticides production.

P and U Lists

The P and U lists contain discarded commercial chemical products, off-specification chemicals, container residues, and residues from the spillage of materials. These two lists include commercially pure grades of the chemical, any technical grades of the chemical that are produced or marketed, and all formulations in which the chemical is the sole active ingredient. An example of a P or U listed hazardous waste would be a pesticide on one of the two lists which was not used during its shelf life and must now be disposed of. At the time such a material was intended for disposal, it would be considered a hazardous waste. The primary distinction between the two lists is the quantity at which the chemical is regulated. The P-list consists of acutely toxic wastes that are regulated when the quantity generated per month, or accumulated at any time, exceeds one kilogram (2.2 pounds). U-listed hazardous wastes are regulated when the quantity generated per month exceeds 25 kilograms (55 pounds). Examples of businesses that typically generate P or U listed wastes include pesticide applicators, laboratories, and chemical formulators.

Characteristic Hazardous Wastes (40 CFR 261, Subpart C)

If the wastes generated at a facility are not contained on the F, K, P, or U lists, the final step to determine whether a waste is hazardous is to evaluate the waste against four hazardous characteristics. These characteristics are ignitability, corrosivity, reactivity, and toxicity. They are explained below.

Ignitability (EPA Waste Identification Number D001)

A waste is an ignitable hazardous waste if it has a flash point of less than 140 degrees Fahrenheit as determined by the Pensky-Martens closed cup flash point test; readily causes fires and burns so vigorously as to create a hazard; or is an ignitable compressed gas or an oxidizer as defined by the U.S. Department of Transportation (DOT) regulations. A simple method of determining the flash point of a waste is to review the material safety data sheet, which can be obtained from the manufacturer or distributor of the material. Naphtha, lacquer thinner, epoxy resins, adhesives, and oil based paints are all examples of ignitable hazardous wastes.

Corrosivity (EPA Waste Identification Number D002)

A liquid waste which has a pH of less than or equal to 2 or greater than or equal to 12.5 is considered to be a corrosive hazardous waste. Sodium hydroxide, a caustic solution with a high pH, is often used by industries to clean or degrease metal parts. Hydrochloric acid, a solution with a low pH, is used by many industries to clean metal parts prior to painting. When these caustic or acid solutions become contaminated and must be disposed of, the waste would be a corrosive hazardous waste.

Reactivity (EPA Waste Identification Number D003)

A material is considered to be a reactive hazardous waste if it is normally unstable, reacts violently with water, generates toxic gases when exposed to water or corrosive materials, or if it is capable of detonation or explosion when exposed to heat or a flame. Materials which are defined as forbidden explosives or Class A or B explosives by the U.S. Department of Transportation are also considered reactive hazardous waste. Examples of reactive wastes would be waste gunpowder, sodium metal, or wastes containing cyanides or sulfides.

Toxicity

The fourth characteristic that could make a waste hazardous is toxicity. To determine if a waste is a toxic hazardous waste, a representative sample of the material must be subjected to a test conducted in a certified laboratory. The test procedure used from the inception of the hazardous waste management program was the EP-Toxicity test. On March 29, 1990, EPA published a rule expanding the toxicity characteristic to include an additional 25 compounds and changing the test procedure. The new test procedure is the Toxicity Characteristic Leaching Procedure (TCLP). Under Federal rules, all generators are required to use the TCLP test when evaluating wastes after March 29, 1991. The TCLP is more aggressive than the EP Toxicity test with regard to certain chemicals. Many industrial wastes which were previously not considered hazardous wastes may be considered hazardous wastes by the standards of the TCLP. The Toxicity

Characteristic rule does not apply to underground storage tank (UST) wastes such as petroleum contaminated soil or debris. These materials are currently regulated under Subpart I of RCRA. EPA will conduct studies to determine whether this exemption will be continued. The rule also exempts dielectric fluid containing PCB's, and electrical equipment regulated by the Toxic Substances Control Act (TSCA).

OTHER WASTES

Lead-Acid Batteries (40 CFR 266)

Used lead-acid batteries are regulated as hazardous wastes only if they are NOT recycled. Batteries that are recycled do not need to be counted in determining the quantity of hazardous waste generated per month, nor do they require a hazardous waste manifest when shipped off of your premises. This exemption does not apply if you recycle batteries on your premises.

Used Oil (40 CFR 279)

Used oil that is recycled for energy or material recovery is not subject to the hazardous waste regulations. Used oil that is recycled by burning in a space heater or by a used oil collector does not need to be counted in determining the quantity of waste generated per month, nor does it require a hazardous waste manifest when shipped off your premises. Used oil that is mixed with hazardous waste must be managed as hazardous waste. Used oil cannot be discharged onto the ground, waterways, or used as a sealant, coating, or a dust control agent for roads or parking lots.

Polychlorinated Biphenyls (PCB's) (40 CFR 761)

Polychlorinated Biphenyls (PCB's) are not a hazardous waste and are not subject to hazardous waste regulations. The use, storage, and disposal of PCB's is regulated under the Federal Toxic Substances control Act (TSCA).

Empty Containers (40 CFR 261.7)

Containers or container liners which have held hazardous materials are not regulated as hazardous wastes if all removable wastes have been emptied. For a container to be considered, one of the following conditions must be met:

- No more than one inch of residue remains at the bottom;
- No more than 3.0 percent by weight of the contents remain inside the container (110 gallon container or less); or
- No more than 0.3 percent by weight of the contents remain inside the container (containers larger than 110 gallons).

Empty containers which contain P-listed wastes must be triple-rinsed using an appropriate solvent before they are considered empty.

WHAT QUANTITIES OF HAZARDOUS WASTE ARE REGULATED?

After a generator determines which wastes are hazardous waste, the next step is to determine the generation rate and maximum quantities that are accumulated. The generation rate is determined by adding together the total quantity of hazardous waste from all sources each calendar month. In determining the generation rate, the actual amount of waste generated is used, not an average over a number of months.

In determining the quantity of hazardous waste generated each calendar month, a generator need not include the following:

- Hazardous waste when it is removed from on-site storage; or
- Hazardous waste produced by on-site treatment, including reclamation of hazardous waste, so long as the hazardous waste that is treated or reclaimed is counted each time prior to treatment or reclamation. An example is the on-site distillation of solvents. The generator must count the amount of contaminated solvent put into the distillation unit, not the still bottom sludge that is produced.

TYPES OF GENERATORS BY QUANTITY

Large Quantity Generator (LQG)

If a site generates or accumulates 1,000 kilograms (2,200 pounds) of RCRA hazardous waste, generates or accumulates 1 kilogram (2.2 pounds) of RCRA acute hazardous waste, generates or accumulates more than 100 kilograms (220 pounds) of spill cleanup material contaminated with RCRA acute hazardous waste, or generates or accumulates any combination thereof, then it is considered a Large Quantity Generator (LQG). There is a ninety-day maximum accumulation time which begins when waste is first added to the primary accumulation area and/or an approved container is full in a satellite accumulation area. An RCRA Storage Permit must be obtained for accumulations of over ninety days' duration. There is no maximum volume restriction for LQG sites. The regulatory burden placed upon LQG's both heavy and extensive, and includes, but is not limited to, hazardous waste determination and characterization; hazardous waste packaging, marking and labeling; rigorous inspections (containers, tanks, drip pads, etc.); scrupulous record keeping and reporting, including biennial and exception reports; the formulation of a contingency plan; and spill notification.

Small Quantity Generators (SQG's)

If a site generates between 100 and 1,000 kilograms (220/2,200 pounds) of

hazardous waste, *and* generates or accumulates *less* than 1 kilogram (2.2 pounds) of acutely hazardous material, *and* generates or accumulates *less* than 100 kilograms (220 pounds) of material from the cleanup of a spillage of acutely hazardous material, *and* stores its waste in a manner consistent with regulatory provisions--*and all of those conditions must be met*--then the site may be considered a small quantity generator. The regulatory burdens upon a SQG are similar to those upon a LQG, but are slightly less onerous. While there is a volume restriction of 6,000 kilograms (13,200 pounds) of waste at the site at any given time, an RCRA Storage Permit is required only if accumulations are over one hundred and eighty days' duration. As with LQG's, the regulatory burden includes, but is not limited to, hazardous waste determination and characterization; hazardous waste packaging, marking and labeling; rigorous inspections (containers, tanks, drip pads, etc.); scrupulous record keeping and reporting, including exception reports; and spill notification; but it does not include the requirement of a formal biennial report or a contingency plan, although the latter, along with extensive formal training, is a practice that can significantly reduce liability exposure.

Conditionally Exempt Small Quantity Generators

Under certain circumstances, a site may be considered a Conditionally Exempt Small Quantity Generator. In order to qualify for this status, the site must meet all of the criteria for a Small Quantity Generator during *every month* of the reporting year. Conditionally Exempt Small Quantity Generators are still required to identify hazardous waste, determine generator status, use transporters with an approved EPA ID number, document that hazardous waste was disposed of at an authorized hazardous waste facility, and make spill notifications. 1,000 kilograms (2,200 pounds) is the maximum accumulation at any one time for such a generator.

GENERATOR ELEMENTS UNIQUE TO THE STATE OF KANSAS

The generator categories listed above are of Federal derivation. The State of Kansas' regulations are somewhat different. Kansas regulations define three categories of hazardous waste generators that are described in detail below. A generator must determine which category his facility is classified as in order to determine which regulations must be followed. It should be noted that a facility may change status from one category to another depending upon generation rates and accumulated quantities.

EPA Generator

An EPA Generator generates or accumulates 1,000 kilograms (2,200 pounds) of RCRA hazardous waste, generates or accumulates 1 kilogram (2.2 pounds) of RCRA *acute* hazardous waste, generates or accumulates more than 100 kilograms (220 pounds) of spill cleanup material contaminated with RCRA acute hazardous waste, or generates or accumulates any combination thereof. EPA Generators are roughly the equivalent to

standard LQG's.

Kansas Generator

A Kansas Generator, by contrast, generates or accumulates between 25 and 1,000 kilograms (55/2,200 pounds) of hazardous materials in a calendar month, and generates less than 1 kilogram (2.2 pounds) of acutely hazardous waste or 25 kilograms (55 pounds) of spill cleanup material contaminated with RCRA acute hazardous waste.

Small Quantity Generator

A SQG, by Kansas definitions, generates no more than 25 kilograms (55 pounds) of hazardous waste, and no more than 1 kilogram (2.2 pounds) of acutely hazardous waste in a calendar month.

LAND DISPOSAL RESTRICTIONS

The 1984 Hazardous and Solid Waste Amendments (HSWA) required the EPA to evaluate all characteristic and listed hazardous wastes to determine which wastes should be restricted from land disposal. For wastes that are restricted, the EPA has set treatment standards to ensure that hazardous constituents will not migrate from the disposal site.

Beyond target dates established in a schedule contained in the law, restricted wastes that do not meet the treatment standards are prohibited from land disposal. Wastes that are not appropriate for land disposal under any circumstances are banned from land disposal completely. The first rule, issued in November of 1986, prohibited land disposal of F-listed solvents and dioxin-containing wastes. The second rule included the "California List" of wastes. It prohibits the land disposal of strong acids, liquids with PCB's greater than or equal to 50 parts per million, liquids containing halogenated organic compounds (HOC) or free cyanides at greater than or equal to 1,000 parts per million, and liquids containing heavy metals at greater than specified concentrations. Three subsequent rules established treatment standards or prohibitions for all remaining wastes. The last of these occurred on May 8, 1990.

For purposes of implementing the land disposal restrictions, land disposal is defined to include landfills, surface impoundments, waste piles, injection wells, land treatment facilities, salt domes or caves, underground mines or caves, and concrete vaults or bunkers. An important provision of the land disposal restrictions is that dilution cannot be used to circumvent a treatment standard for a restricted waste. Dilution as a necessary part of a waste treatment process is allowed. The EPA has established regulatory requirements for generators, treatment facilities, and disposal facilities. This text will address only the generator requirements.

Generator Requirements

The generator requirements under the land disposal restrictions can be divided into two general areas. The first is the determination of the applicability of the requirements to a given waste. The second is the provision of notice and certification to storage, treatment, or disposal facilities.

Determination

A generator must determine whether a waste is subject to the land disposal restriction rules and whether the waste meets or exceeds the applicable treatment standard. For the majority of characteristic hazardous wastes, the waste must be treated to the point that it no longer exhibits the characteristic.

The second step is to determine whether the waste meets or exceeds the treatment standard. This can be done by knowledge of the waste, conducting a total waste analysis, or conducting a Toxicity Characteristic Leaching Procedure (TCLP) test. In many cases, knowledge of the process can be used to determine whether a waste exceeds the treatment standard. Knowledge of the waste or a total waste analysis can be used to determine whether a waste exceeds the treatment standard. Knowledge of the waste or a total waste analysis cannot be used to prove that a waste does not exceed the treatment standard.

If the waste meets the treatment standard, the generator may send the waste directly to a disposal facility. If the waste does not meet the treatment standard, it must be treated to meet the standard before a land disposal facility can be used.

The EPA has established three types of treatment standards. These include concentrations of contaminants in an extract of the waste, concentrations of contaminants in the waste itself and specific treatment technologies that must be used. For certain wastes, the EPA has not yet established treatment standards.

Notification

If a waste meets the treatment standard, the generator may send the waste directly to a land disposal facility. Except in cases where generators have tolling agreements, the generator must provide a notice with the following information for each shipment:

- The EPA hazardous waste number(s) for the waste;
- The applicable treatment standard;
- The manifest number for the waste shipment; and
- The waste analysis data (if available).

The generator must also provide a signed certification stating that the waste delivered to the disposal facility meets the treatment standard, and that the information included in the notice is true, accurate, and complete. If the treatment standard is not currently applicable because the EPA has granted an extension to the effective date for the particular waste, the generator is responsible for notifying the land disposal facility. Land ban notices and certifications must be maintained for five years.

If a waste does not meet the treatment standard, it must be treated prior to disposal. The generator must include a notice containing the four items noted above, with each shipment to a storage or treatment facility. This includes recyclers, reclaimers, and incinerators since residues from these facilities may ultimately require land disposal.

WHAT HAZARDOUS WASTE MANAGEMENT OPTIONS ARE AVAILABLE TO A GENERATOR?

Many alternatives exist for properly managing hazardous wastes. These alternatives are listed below in their order of desirability. With proper use of these techniques, the economic burden and liability of handling wastes can be significantly reduced.

Waste Minimization and Environmental Economics

Waste minimization is any change in a process that reduces or eliminates the amount of waste generated or reduces the toxicity of the waste that is generated. A waste minimization plan is an important component of any comprehensive waste management program. The Hazardous and Solid Waste Amendments to the RCRA of 1984 recognized the importance of this approach when declaring it to be "the national policy of the United States that, whenever feasible, the generation of hazardous waste is to be reduced or eliminated as expeditiously as possible." Taking waste minimization from a goal to a reality has not been so easy even though it offers a business many advantages. These advantages include economic incentives, regulatory compliance, worker safety, and protection of the environment.

Waste minimization changes that reduce the volume or toxicity of a hazardous waste can result in lower treatment and disposal costs, a decrease in the long-term liability associated with disposing of hazardous waste at off-site disposal facilities, and the creation of a safer work place *via* the reduction of exposure of workers to hazardous materials. They can also change the generator status of a facility resulting in a lesser regulatory burden and lower the generator monitoring fees for a facility.

Any type of waste minimization activity also benefits the environment through the preservation of natural resources that go into the manufacture of raw materials and the

reduction of the need for hazardous waste management facilities.

Waste reduction can only be accomplished if there is a commitment to the goal throughout the organization. The first step in minimizing wastes is to identify all waste streams and the processes that generate them. The following changes represent a few of the actions that can then be taken to reduce or eliminate excess waste generation.

- Managing the hazardous materials inventory to ensure that hazardous materials do not become hazardous wastes when processes or product specifications change;
- Using only the amount of raw material needed to perform the task. Many facilities have substantially reduced the amount of paints and solvents needed by training workers in improved painting and cleaning methods;
- Ensuring that all products and wastes are clearly labeled and properly stored. Improper storage can result in accidental contamination of a product or require expensive testing to identify a product;
- Substituting a non-hazardous product for a hazardous one. Changing primers or paints to products that do not contain heavy metals is one of the most common waste minimization changes;
- Using sludge dryers, filter presses, or similar equipment to reduce the volume of liquid waste generated in large quantities;
- Replacing existing equipment with more efficient equipment to perform the same operation. In the coating industry, for example, replacing conventional air-atomized spray equipment with electrostatic or powder coating equipment can result in a substantial waste reduction; and
- Minimizing losses due to evaporation by installing vapor recovery systems, placing covers on tanks, and ensuring that lids are kept on containers of volatile hazardous material.

Material or Energy Recovery

Material recovery occurs when a waste is treated to allow continued use as a raw material. An example is the distillation of contaminated solvents. This may be done with a small still at the generator's facility or by a commercial recycling firm. The method results in savings on the purchase of raw materials and reduces the volume of waste requiring disposal.

Energy recovery occurs when a waste with fuel value is burned as a fuel in an industrial boiler or furnace. This method is appropriate for solvents that have been contaminated to the point where they are no longer suitable for distillation. This alternative is not suitable for chlorinated solvents or other hazardous wastes with fuel values below 6,000 BTU per pound.

Waste Treatment

Many hazardous wastes can be treated so as to render them non-hazardous. This can be done at a commercial treatment facility or at the generator's site. An example of a form of treatment performed by many generators is neutralization of an acid or caustic waste to allow discharge of the treated waste to a wastewater treatment plant. Other forms of treatment include fixation, stabilization, solidification, chemical reduction, and incineration.

Some form of treatment, such as neutralization, can be performed by a generator without requiring a treatment permit. In general, treatment can only be performed by a permitted treatment facility.

Ultimate Disposal

Hazardous wastes that are not suitable for any of the above recycling or treatment techniques must be ultimately disposed of by chemical destruction, deep well injection, or land burial. Many of the treatment techniques discussed above also result in residues which must be disposed of. Disposal *via* deep well injection and land burial is restricted to certain types of hazardous waste and should be reserved for situations where alternative management methods are not possible.

19-Jan-01

RESOURCE CONSERVATION AND RECOVERY ACT

RCRA HAZARDOUS WASTE REPORT: ARROW GEAR COMPANY

MSDS NO.	MANUFACTURER NAME	PRODUCT NAME	MAXIMUM WEIGHT	CHEMICAL NAME	%	CHEMICAL WEIGHT	CAS NUMBER	PHYSICAL STATE	RCRA CODE
	RCRA GROUP BY CAS #								
86	METHANEX CORPORATION	METHANOL	1,828.03	METHYL ALCOHOL	99.85	1,825.29	67-56-1	L	U154
102	MAYWOOD COMPANY	MAYWOOD ACRYL LACQUER THINNER	136.96	METHYL ALCOHOL	21	28.76	67-56-1	L	U154
				RCRA AGGREGATE WEIGHT=		**1,854.05**			
	RCRA GROUP BY CAS #								
102	MAYWOOD COMPANY	MAYWOOD ACRYL LACQUER THINNER	136.96	ACETONE	21	28.76	67-64-1	L	U002
157	MOBIL OIL CORPORATION	MOBILTEMP SHC 32	50.00	ACETONE	5	2.50	67-64-1	GEL	U002
				RCRA AGGREGATE WEIGHT=		**31.26**			
	RCRA GROUP BY CAS #								
49	ITW FLUID PRODUCTS GROUP	YELLOW DXX-526, DLT, DXX-340	72.65	BUTYL ALCOHOL	30	21.80	71-36-3	L	U031
51	ITW FLUID PRODUCTS GROUP	STEEL BLUE; DX-100	70.15	BUTYL ALCOHOL	5	3.51	71-36-3	L	U031
52	ITW FLUID PRODUCTS GROUP	STEEL RED; DX-986, DX-296; RED DL	70.15	BUTYL ALCOHOL	5	3.51	71-36-3	L	U031
81	STANCHEM, INC.	CORROSION VARNISH	24.00	BUTYL ALCOHOL	20	4.80	71-36-3	L	U031
83	ACHESON COLLOIDS COMPANY	DAG 154	826.75	BUTYL ALCOHOL	5	41.34	71-36-3	L	U031
110	RANDOLPH PRODUCTS COMPANY	AMS-3100~YELLOW ZINC CHROMATE PRIMER REV G PRIMER	38.80	BUTYL ALCOHOL	15	5.82	71-36-3	L	U031
				RCRA AGGREGATE WEIGHT=		**80.77**			
	RCRA GROUP BY CAS #								
110	RANDOLPH PRODUCTS COMPANY	AMS-3100~YELLOW ZINC CHROMATE PRIMER REV G PRIMER	38.80	ISOBUTYL ALCOHOL	10	3.88	78-83-1	L	U140
				RCRA AGGREGATE WEIGHT=		**3.88**			
	RCRA GROUP BY CAS #								
65	THE TOLBER DIVISION	MICCROSTOP	7.93	METHYL ETHYL KETONE	75	5.95	78-93-3	L	U159

COPYRIGHT 2000, VANGUARD ENVIRONMENTAL, INC.

RCRA HAZARDOUS WASTE REPORT: ARROW GEAR COMPANY

MSDS NO.	MANUFACTURER NAME	PRODUCT NAME	MAXIMUM WEIGHT	CHEMICAL NAME	%	CHEMICAL WEIGHT	CAS NUMBER	PHYSICAL STATE	RCRA CODE
102	MAYWOOD COMPANY	MAYWOOD ACRYL LACQUER THINNER	136.96	METHYL ETHYL KETONE	9	12.33	78-93-3	L	U159
				RCRA AGGREGATE WEIGHT=		***18.28***			
RCRA GROUP BY CAS #									
49	ITW FLUID PRODUCTS GROUP	YELLOW DXX-526, DLT, DXX-340	72.65	TOLUENE	5	3.63	108-88-3	L	U220
70	MALLINCKRODT BAKER, INC.	TOLUENE	43.09	TOLUENE	100	43.09	108-88-3	L	U220
102	MAYWOOD COMPANY	MAYWOOD ACRYL LACQUER THINNER	136.96	TOLUENE	25	34.24	108-88-3	L	U220
110	RANDOLPH PRODUCTS COMPANY	AMS-3100~YELLOW ZINC CHROMATE PRIMER REV G PRIMER	38.80	TOLUENE	5	1.94	108-88-3	L	U220
127	MOBIL OIL CORPORATION	MOBIL VELOCITE OIL NO. 10	1,436.37	TOLUENE	0.01	0.14	108-88-3	L	U220
166	MOBIL OIL CORPORATION	MOBIL MULTI-PURPOSE ATF	2,204.66	TOLUENE	0.09	1.98	108-88-3	L	U220
				RCRA AGGREGATE WEIGHT=		***85.03***			
RCRA GROUP BY CAS #									
49	ITW FLUID PRODUCTS GROUP	YELLOW DXX-526, DLT, DXX-340	72.65	ETHYL ACETATE	5	3.63	141-78-6	L	U112
				RCRA AGGREGATE WEIGHT=		***3.63***			
RCRA GROUP BY CAS #									
14	FELLOWS CORPORATION	HIGH SPEED STEELS AND TUNGSTEN CARBIDES	100.00	VANADIUM PENTOXIDE	6.5	6.50	1314-62-1	S	P120
				RCRA AGGREGATE WEIGHT=		***6.50***			
RCRA GROUP BY CAS #									
18	CARBIT PAINT COMPANY	28Y10LF ORANGE S.D. GLOSS EN	10.00	XYLENE	2	0.20	1330-20-7	L	U239
19	CARBIT PAINT COMPANY	28E9 ANSI 49 MED LT GREY SD GL	50.00	XYLENE	3	1.50	1330-20-7	L	U239
43	ERICH NUSSLE OHG	CONDURSAL 0090	20.00	XYLENE	25	5.00	1330-20-7	L	U239
44	ERICH NUSSLE OHG	CONDURSAL N523	20.00	XYLENE	100	20.00	1330-20-7	PST	U239
102	MAYWOOD COMPANY	MAYWOOD ACRYL LACQUER THINNER	136.96	XYLENE	2	2.74	1330-20-7	L	U239
110	RANDOLPH PRODUCTS COMPANY	AMS-3100~YELLOW ZINC CHROMATE PRIMER REV G PRIMER	38.80	XYLENE	5	1.94	1330-20-7	L	U239

 COPYRIGHT 2000, VANGUARD ENVIRONMENTAL, INC.

RCRA HAZARDOUS WASTE REPORT: ARROW GEAR COMPANY

MSDS NO.	MANUFACTURER NAME	PRODUCT NAME	MAXIMUM WEIGHT	CHEMICAL NAME	%	CHEMICAL WEIGHT	CAS NUMBER	PHYSICAL STATE	RCRA CODE
149	MOBIL OIL CORPORATION	MOBILITH AW-2	100.00	XYLENE	0.13	0.13	1330-20-7	GEL	U239
180	THE DEXTER CORPORATION	POLYURETHANE CATALYST	8.85	XYLENE	20	1.77	1330-20-7	L	U239
				RCRA AGGREGATE WEIGHT=		***33.28***			
	RCRA GROUP BY CAS #								
69	BRUSH WELLMAN ENGINEERING MATERIALS	COPPER BERYLLIUM WROUGHT ALLOYS	168.00	BERYLLIUM	2	3.36	7440-41-7	S	P015
171	BRUSH WELLMAN ENGINEERED MATERIALS	COPPER BERYLLIUM WROUGHT ALLOY	275.00	BERYLLIUM	2	5.50	7440-41-7	S	P015
				RCRA AGGREGATE WEIGHT=		***8.86***			
		TOTAL WEIGHT RCRA CANDIDATES=	***8,370.93***	***RCRA COMPONENT WEIGHT=***		***2,125.54***			

COPYRIGHT 2000, VANGUARD ENVIRONMENTAL, INC.

VANGUARD
ENVIRONMENTAL, INC.
ENVIRONMENTAL & SAFETY COMPLIANCE SPECIALISTS

Part 13

The Clean Air Act Amendments of 1990 & Related Issues

The Most Sophisticated and Far Reaching of Environmental Laws

On November 15, 1990, President George Bush signed into law the Clean Air Act Amendments (CAAA) by which, among other things, air emission sources were required to have a Federally enforceable operating permit: a permit to operate a facility that emits specific air pollutants "regulated under the Act." Virtually the full spectrum of industrial activity was affected, from any and all minor and/or area source emissions to major sources requiring a Title V Operating Permit. Operating permits do more than limit the quantity of emissions: directly or indirectly, they also affect the manufacturing or processing operations that are sources of emissions. Common emission sources regulated include paint booths, ovens, incinerators, facility systems, steam generating units (boilers), and "area" sources in which no particular point source is apparent but the facility, globally, serves as the emission source for chemical pollutants. In addition to this, the list of pollutants regulated under the Act was expanded to include volatile organic compounds (VOC's); paints, solvents, degreasers, etc.; one hundred and eighty-nine hazardous air pollutants (HAP's); six "criteria pollutants relative to acid rain issues"; and any additional Class I and II Ozone Depleting Chemicals (ODC's).

The permitting process is administered by the states and, in some cases, local air quality management agencies. Each state is required to submit a permit program to the EPA for approval which, in turn, requires facilities to submit permit applications. State and local permit programs must meet minimum Federal requirements. Additional requirements come from the state implementation plan (SIP) and may include upgraded air toxics control and acid rain programs of the amendments. Requirements from state to state vary significantly, requiring increased vigilance for those corporations having facilities in more than one state.

Common Processes & Emissions Sources Within Plants Triggering Permitting

- **paint booths, spray guns, dip coating, parts washers, ovens, facility exhaust systems, steam generating units (boilers), welding, incinerators;**
- **machining, fabricating, grinding, cutting, degreasing, manufacturing;**
- **burning of fuels;**
- **evaporation, vapors, fumes from open containers of industrial chemicals, fugitive emissions;**
- **refrigerants and their use;**
- **area sources in which no particular point source is apparent, but the facility itself serves as the source on a global basis.**

EPA Enforcement Penalty Policy (Risk Management)

Operating a facility without a permit under the CAAA, or in a manner not in accordance with all state and local requirements is illegal. Affected facilities operating without a permit or in violation of permit terms face civil penalties. Facility managers can face criminal charges. The public can enforce permit terms through the Citizen Suite Provision of CAAA statutes. Moreover, informants and "whistle blowers" are even rewarded by the EPA for reporting facilities in violation. Specifically, civil enforcement provisions allow for fines of up to $25,000 *per day per* violation. Criminal penalties, which could result from willful violations of the act, carry fines of up to $1 million and jail terms of up to thirty years.

The EPA retains the power to enforce permit conditions independent of state action. But there are strong reasons why a state would want to administer the program itself. First, it gives them the authority to collect large annual emissions/administrative fees. Second, it gives them compliance/noncompliance oversight, which is particularly important to them as they risk the loss of Federal highway funds for substandard facility compliance within their borders.

Air Permitting: Two Basic Categories

Air programs legislatively defined by the Federal government, and administered through individual states, can be grouped into two categories: Title V (major source) and Non-Title V (minor source). Both are inseparable parts of the CAAA of 1990. Depending on program structure of individual states, Title V programs are administered through Major Source Construction Permits and Major Source Operating Permits. Non-Title V programs are administered through Minor Source Construction Permits, *De-minimis* Construction Permits, Minor Source Operating Permits (with Federally-enforceable limits, based on actual emissions), Minor Source Operating Permits (based on "potential to emit"), and Open Burning Permits.

State programs ultimately reflect Federal requirements:

- New Source Performance Standards (NSPS);
- National Emission Standards of Hazardous Air Pollutants (NESHAP'S);
- Acid Rain; and
- New Source Review
  - Prevention of Significant Deterioration (PSD); and
  - Non-Attainment Areas

State programs will encompass many facilities (minor sources) that never had to be concerned with air emissions in the past. For major sources, CAAA consolidates all reporting and record keeping requirements into one document. Every major source will have rigorous and detailed reporting and record keeping requirements under the EPA's mandate for "enhanced monitoring." One of the most profound changes will be annual certification and semiannual reporting through the National Emission Standards for Hazardous Air Pollutants (NESHAP).

It is extremely important to understand that a facility's air permitting project must be developed within the framework of the government's five-year permit program. Flexibility, especially with regard to anticipated growth projections of a company's business plan, must be an important component of the permitting project's design. If anticipated growth is not properly built into the permit, the facility's senior management could meet with restrictions by EPA Enforcement Oversight at such a juncture in the permit's operating period that actually shutting down operations on a regular basis so as to stay within emissions limitations targeted by the facility's permit might be necessary.

Ozone Depleting Chemicals (ODC's - Title VI of CAAA)

Ozone depleting chemicals are regulated under 40 CFR 82 - "Protection of Stratospheric Ozone under the Clean Air Act Amendments of 1990." The primary effect

of this regulation is to restrict, according to specified schedules, the production and/or consumption of ozone depleting chemicals. These substances include chlorofluorocarbons (CFC's) and other chemicals with the capability to break down and reduce the amount of ozone in the stratosphere. ODC's are listed in two classes: Class I (22 substances) and Class II (34 substances).

Demonstration of Compliance with Applicable Requirements and Compliance Assurance Monitoring (CAM)

One of the requirements of clean air regulations is a description by the facility being regulated of the approaches it will use in demonstrating compliance through the five-year life of the permit with applicable federal and state requirements. Some of these requirements, particularly those subject to Federal regulations--New Source Performance Standards (NSPS), Best Available Control Technology, Reasonable Available Control Technology (RACT), Maximum Achievable Control Technology (MACT), and National Emission Standards for Hazardous Air Pollutants (NESHAP)--specify how such compliance must be demonstrated through EPA test methods, record keeping, reporting, etc. For many of the other applicable requirements, however, no such compliance demonstration approaches are specified in the State Implementation Plan (SIP) or in the facility's construction or operating permit. Considerable discretion is available to the facility in proposing both the approach to be utilized, as well as the frequency of data and information to be provided. Most companies have opted for approaches minimizing the time and cost to them while still providing the information in the semi-annual or annual reports required for Title V Air Permitting.

An important element of this issue is the development by the EPA of the Compliance Assurance Monitoring (CAM) program, formerly the Enhanced Monitoring Program. Two different source categories are subject to CAM: those using air pollution control devices to achieve compliance, and those using other methods such as work practices, pollutant content limits, or design criteria to achieve compliance. Sources in the first category must develop a plan for monitoring emissions and ensuring compliance. This plan must include indicator ranges which will assure compliance. Since CAM rules will not be finalized until July, 1997, many facilities already submitting a Title V permit application will probably have to submit an addendum identifying the air emission units subject to the CAM requirements and how these requirements will be met by the facility.

Development of Maximum Achievable Control Technology (MACT) - CAAA 112(g)

CAAA required the EPA to develop MACT requirements for major sources of Hazardous Air Pollutants (HAP'S). CAAA also required the EPA to develop a list of source categories for which they would determine MACT for both existing and new sources, and group these in four categories with respect to their time frame in developing these requirements. 174 source categories were selected to be regulated by EPA with

their respective time frames of 1992, 1994, 1997, and 2000 (dates revised in the Federal Register of June 4, 1996). Hydrogen sulfide and caprolactam have been removed from the list pertinent to MACT.

A July 21, 1995 court decision upheld the EPA's requirement to base the Potential to Emit (PTE) on the aggregate emissions of HAP's from any contiguous or adjacent facility under the same owner regardless of their 2-digit SIC code. It also upheld the EPA's requirement that fugitive and stack HAP emissions be combined in order to determine if a source was a major source under Title III. The EPA will propose PTE rules in 1997 and finalize them in 1998.

Industrial facilities potentially subject to MACT could avoid having to meet MACT in the future if they limit both their actual and potential emissions to below the major source thresholds regulated under the CAAA prior to the first compliance date of a substantial regulatory requirement of the applicable MACT. Examples of a substantial regulatory requirement are emission limits or work practice requirements, not notice requirements such as the source reporting that it is subject to MACT. Because most of the MACT requirements will not be implemented until three years after they are issued, facilities can assume that approximately two years after their issuance is the target for exempting out of MACT. In the interim, they should implement material substitution, process changes, and/or addition of pollution control technology.

Changes in National Ambient Air Quality Standards (NAAQS)

In late 1996, EPA revised the NAAQS for particulate matter (PM) from less than 10 micrometers (PM-10) in diameter to less than 2.5 (PM-2.5) micrometers in diameter. For many states, this will involve the revision of their SIP's which could result in the imposition of more stringent controls at affected industrial facilities. The primary sources are industrial combustion and diesel-fueled vehicles. These regulations are to be issued in June, 1997.

OSHA Process Safety Management (PSM - OSHA, 29 CFR 1910.119): Requirements and Rationale

(**Note:** See also Part 4 for PSM's application to OSHA.)

On May 26, 1992, the Occupational Safety and Health Administration (OSHA) implemented its Process Safety Management (PSM) standard aimed at protecting millions of employees in the workplace at nearly 100,000 facilities against toxic, flammable and reactive chemical hazards "used, stored, manufactured, or transported on-site" in conjunction with processes, machinery, equipment, or activities. Affected facilities were to conduct Process Hazard Analyses (PHA's) of at least 25% of their affected processes by May 26, 1994, and at least an additional 25% of the analyses were

to be completed each successive year by the May 26 anniversary so that employers will have evaluated every affected process and implemented safety measures within five years of the original effective date. The final deadline for total implementation is May 26, 1997, although several enforcement penalties have already been levied against companies not satisfying the incremental mandates by each anniversary.

Basically, the standard mandates employee participation in PSM programs and sets requirements stemming from 14 elements including:

- written operating procedures;
- employee training;
- pre-startup reviews;
- equipment maintenance;
- written procedures for managing process change;
- "hot work" permit;
- emergency action plans;
- compliance audits; and
- incident investigation involving releases or near releases of covered chemicals.

OSHA drew up a list of 130 Highly Hazardous Chemicals in which coverage is triggered for a facility's compliance if any or all specified Threshold Quantities (TQ's) is/are being used in a single process at one point in time (not aggregated over a period of time as in Sec. 313 of SARA Title III). In addition to specific TQ's assigned to the highly hazardous substances, any other substance connected to a process at or above 10,000 pounds is also a trigger. A "process" is defined to mean any activity involving a highly hazardous chemical inclusive of any use, storage, manufacturing, or on-site movement. Also included as a single process is any group of vessels which are interconnected and separate vessels which are located such that the chemical could be released.

Relative to industrial refrigeration systems, PSM literature cites ammonia, a common refrigerant, as having a 10,000 lb. threshold. Based on approximately 30 lbs. ammonia/ton of refrigeration, 330 tons of refrigeration requires 10,000 lbs. of ammonia and refrigerates 910,000 cubic feet of volume. These values are easily recognizable for refrigerated warehouse managers to determine their facility's need for PSM.

Important Note: For optimum and accurate results, this OSHA PSM project should be performed in conjunction with the EPA's two compliance requirements under its Clean Air Act Amendments (Title V Air Operating Permit) and under its Risk Management Program for Chemical Accidental Release Prevention (40 CFR Part 68), as all three programs were planned by Federal OSHA and EPA authorities, as well as the U.S. Congress, to be meshed or intertwined for implementation. For example, the PSM threshold cited above for ammonia (10,000 lbs.) is the same for the Risk Management

Program (as discussed below), and therefore, triggers the compliance requirements of that regulation, as well.

Risk Management Program (RMP- 112(r) of the Clean Air Act Amendments of 1990 - EPA, 40 CFR PART 68): Chemical Accidental Release Prevention Requirements & Rationale

The U.S. Environmental Protection Agency has developed regulations that would require development and implementation of Risk Management Programs (RMP's) at facilities that manufacture, process, use, store, or otherwise handle regulated substances: 160 toxics and flammables in quantities that exceed specifically assigned Threshold Quantities (TQ's). Thresholds for toxics range from 500 to 20,000 lbs., whereas all flammables are assigned a 10,000 lb. threshold. The RMP provides facilities with an integrated approach to identify and manage the hazards posed by these regulated substances. A facility's site-specific Risk Management Plan developed as a part of its RMP must be registered with the EPA, and further submitted to state governments, local planning authorities, and made available to the public. The rule assists facilities and communities in mutual efforts to lessen the number and severity of serious chemical accidents.

The EPA estimates that some 140,425 facilities will be affected by this ruling. Approximately 87,800 of those facilities will also be covered by OSHA's Process Safety Management standard. The largest sectors covered by the rules would be cold storage facilities (which use ammonia as a refrigerant), public drinking water systems and POTW's, manufacturers, and propane retailers. Some wholesalers and service industries would also be covered.

Public awareness of the potential danger from accidental releases of hazardous chemicals has increased over the years as serious chemical accidents have occurred around the world, for example:

- 1974 explosion in Flixborough, England;
- 1976 release of dioxin in Seveso, Italy;
- 1984 release of methyl isocyanate in Bhopal, India (see p. 2-7);
- 1984 release of methyl isocyanate in Institute, West Va. hospitalizing 100.

In response to these and many more accidents, the EPA began its Chemical Emergency Preparedness Program (CEPP) in 1985. In 1986, Congress enacted many of the elements of CEPP in SARA Title III, also called the Emergency Planning & Community Right-To-Know Act (EPCRA). SARA Title III requires facilities to provide information on the presence of hazardous chemicals they have on site to local, county, and state agencies and the EPA. This information is the foundation of both the community emergency response plans and the public-industry dialogue on risks and risk reduction. SARA Title

III did not mandate that facilities establish accident prevention programs. However, Congress acknowledged the importance of accident prevention by requiring EPA, under SARA, Sec. 305(b), to conduct a review of emergency systems to monitor, detect, and prevent chemical accidents.

Chemical accident prevention must be part of a comprehensive, integrated system that considers the hazards of the chemicals involved, the hazards of the process, the hazards to the community, and the capabilities of facility personnel. None of these elements should be considered in isolation nor should any single technical solution be considered a complete solution to a particular problem. Each change in a facility, process, or procedure will have multiple effects that must be assessed in the context of the entire operation. The key to a successful process safety management is the commitment of management (facility and corporate) to safety.

Although SARA Title III did not directly address accident prevention except through the previously cited section, EPA recognized that prevention, preparedness, and the ability to respond to an accident are critical. Therefore, the EPA continued to establish an in-depth chemical accident prevention program at all levels.

In February, 1992, the U.S. Occupational Safety and Health Administration (OSHA) developed its standard on chemical process safety management (57 FR 6356). The American Institute of Chemical Engineers, the Chemical Manufacturer's Association, and the American Petroleum Institute further developed programs in support of OSHA's Process Safety Management.

The U.S. Congress also recognized the need for a chemical accident prevention program at the Federal level and included prevention provisions in the new Clean Air Act Amendments of 1990. The goal of CAAA in this regard was to prevent accidental releases of regulated substances and other extremely hazardous substances to the air and to minimize the consequences of releases by focusing preventive measures on those chemicals that pose the greatest risk.

Definitions

A "significant accidental release" means any accidental release of a regulated substance that has caused or has the potential to cause offsite consequences such as death, injury, or adverse effects to human health or the environment or to cause the public to shelter in place or be evacuated to avoid such consequences.

"Worst-case release" would mean the loss of all of the regulated substance from the process in an accidental release that leads to the worst offsite consequences.

RMP's Specific Elements

The EPA requires facilities to develop and implement a Risk Management Program adopting provisions for the prevention and detection of accidental releases and for response to such releases. The requirements specifically address the use, operation, repair, and replacement of equipment to monitor, detect, inspect, and control accidental releases, including the training of persons in the use and maintenance of equipment and in the conduct of periodic inspections. The program includes procedures and measures for emergency response after an accidental release. The regulations require that the owner/operator of stationary sources at which a regulated substance is present in more than a threshold quantity to prepare and implement a risk management plan to detect and prevent or minimize accidental releases of such substances from the facility; and to provide a prompt emergency response to any such releases in order to protect human health and the environment.

RMP's must include:

- a hazard assessment evaluating potential effects of an accidental release, potential release quantities and downwind effects for potential exposure to populations;
- five-year release history (size, concentration, duration, and worst-case scenarios;
- documentation of a prevention program including safety precautions, maintenance, monitoring, and employee training; and
- a written emergency response program that provides specific actions to be taken in response to a release to protect human health and the environment, inclusive of providing such plans to local, county, and state agencies and emergency health care.

Application and Program Levels

The EPA has established three RMP program levels. Stationary sources must assign each covered process to one of them.

Program 1 sources must simply submit evidence that supports their qualifications for that level and certify that no additional prevention efforts are needed and that emergency response activities have been coordinated with the community. The facility must not have had an offsite-effect accident involving a regulated substance for the past five years, the Worse Case Scenario (WCS) distance must not reach the nearest public receptor, and emergency response procedures must coordinate with LEPC and emergency response organizations. Neighboring plants or residences are considered public, whereas roads leading to them are not considered offsite areas.

Program 2 requires that qualifying processes meet seven PSM elements in addition to the rest of the RMP requirements. (not eligible for Program 1 or 3).

A process falls into the **Program 3** category if it is both from Program Level 1, and is also covered by the OSHA PSM, or is associated with one of 9 "high-hazard" SIC Codes.

Overview and Significance of the Interrelationship of PSM & RMP

The interrelationship of OSHA's Process Safety Management & EPA's Risk Management Program has ushered in hybrids of compliance requirements which have to be met for both programs simultaneously. In most cases, if a facility is currently complying with PSM, it must now also be subject to RMP. Relative to RMP, facilities will have three years from the date of the rule's publication in the Federal Register (June, 1996) to comply. Therefore, the deadline is set for June 21, 1999.

Processes in industry categories with a history of accidental releases and processes already complying with PSM will be subject to a prevention program that is identical to parallel elements of the OSHA Standard. All sources must prepare a risk management plan based on the risk management program established at the source. The source must submit the plan to a central point specified by the EPA. The plan will be available to state and local governments and the public.

Facilities impacted by this regulation are those stationary sources that have more than a threshold quantity of a regulated substance in a process. Regulated categories include but are not limited to:

- **Chemical manufacturers** - industrial organics and inorganics, paints, pharmaceuticals, adhesives, sealants, fibers;
- **Petrochemical** - refineries, industrial gases, plastics and resins, synthetic rubber;
- **Other Manufacturing** - electronics, semiconductors, paper, fabricated metals, industrial machinery, furniture, textiles;
- **Agriculture** - fertilizers, pesticides;
- **Public Sources** - drinking and waste water treatment works;
- **Utilities** - electric and gas utilities;
- **Others** - food and cold storage, propane retail, warehousing and wholesalers; and
- **Federal Sources** - military and energy installations.

Hard and Decorative Electroplating and Anodizing Operations: Final Air Toxics Rule for Chromium Emissions NESHAP

On November 15, 1994, EPA issued a final rule to reduce air toxics emissions from chromium electroplating and anodizing operations. Air toxics are those pollutants known or suspected of causing cancer and other serious illnesses. These regulated operations coat metal parts and tools with a thin layer of chromium to protect them from corrosion and wear. Air toxics are released during this process. It is estimated by EPA this rule will reduce emissions of chromium by 173 tons annually, representing a 99% reduction. There is strong evidence to conclude that hexavalent chromium causes lung cancer in humans.

On July 16, 1992, EPA published a list of industry groups (known as "source categories") to be regulated, which included major and area sources of hard and decorative chromium electroplating and chromium anodizing operations. There are an estimated 1,500 hard chromium electroplating facilities, 2,800 decorative chromium electroplating facilities, and 700 chromium anodizing facilities nationwide that are affected by this regulation.

Hard chromium electroplated parts include large cylinders and industrial rolls used in construction equipment and in printing presses; decorative chromium plated parts include appliances such as toasters, various hand tools, and automotive parts; and anodized parts include miscellaneous aircraft parts, including wings and landing gears. The vast majority of these regulated facilities electroplate parts for other industry manufacturers.

A major source is any chromium electroplating or anodizing operation that emits more than 9.1 megagrams (10 tons/yr.) of chromium compounds per year. Sources that emit less than this cutoff value are considered area sources. The majority of these facilities are considered to be area sources.

Here is an outline of the compliance schedule and deadlines:

Initial Notification

Owner/operators affected by this regulation were to have filed an initial notification report by July 24, 1995.

- All existing chromium electroplaters and chromium anodizing operators must comply with this regulation by January 25, 1997.
- All existing decorative chromium electroplaters must comply with this regulation by January 25, 1996.

All new and reconstructed hard or decorative chromium electroplaters and anodizing operators must comply immediately upon startup.

Performance Test Requirements

- **Existing Sources** shall perform these tests by July 23, 1996 (decorative) and by July 24, 1997 (hard).
- **Decorative:** Testing notification must be made to the EPA 60 days (May 24, 1996) prior to the test.
- **Hard:** Testing notification must be made to the EPA 60 days (May 26, 1997) prior to the test.
- **New and Reconstructed Sources:** Between Dec. 16, 1993 and January 25 these sources shall perform these tests within 180 days of the effective date (by July 24, 1995 with 60 days prior notice to EPA or May 25, 1995). After January 25, 1995, these sources must perform these tests within 180 days of initial start-up.

19-Jan-01

CLEAN AIR ACT AMENDMENTS REPORT

CAAA REPORT: ARROW GEAR COMPANY

ID	MSDS NO.	MANUFACTURER NAME	PRODUCT NAME	MAXIMUM WEIGHT	%	CHEMICAL WEIGHT	PHYSICAL STATE	TARGET CHEMICAL PSM / RMP	PROCESS SAFETY MGMT.	RISK MGMT. PROGRAM*	AIR TOXIC REG III (187)	AIR TOXIC REG VI (CLASS 1-2)
9016-87-9		**(Z,Z)-9,12-OCTADECADIENOIC ACID, DIMER, POLYMER WITH 3,3'-[O**										
249	76	SEALED AIR CORPORATION	INSTAPAK® COMPONENT "A"	828.42	100	828.42	L				III	
			MAXIMUM WEIGHT AGGREGATE=	***828.42***		***828.42***						
111-76-2		**2-BUTOXYETHANOL**										
225	62	SUNSHINE MAKERS, INC.	SIMPLE GREEN (OIL DISPERSANT)	12.00	2	0.24	L				III	
397	134	ASHLAND CHEMICAL COMPANY	TECTYL 275	408.78	20	81.76	L				III	
			MAXIMUM WEIGHT AGGREGATE=	***420.78***		***82.00***						
7440-41-7		**BERYLLIUM**										
240	69	BRUSH WELLMAN ENGINEERING MATERIALS	COPPER BERYLLIUM WROUGHT ALLOYS	168.00	2	3.36	S				III	
486	171	BRUSH WELLMAN ENGINEERED MATERIALS	COPPER BERYLLIUM WROUGHT ALLOY	275.00	2	5.50	S				III	
			MAXIMUM WEIGHT AGGREGATE=	***443.00***		***8.86***						
7440-43-9		**CADMIUM**										
327	104	ARCONIUM SPECIALTY ALLOYS	OSTALLOY 158	30.00	10.1	3.03	S				III	
331	105	HANDY & HARMAN	SILVER-COPPER-CADMIUM-ZINC BRAZING ALLOYS	10.00	24	2.40	S				III	
			MAXIMUM WEIGHT AGGREGATE=	***40.00***		***5.43***						
7782-50-5		**CHLORINE**										
370	118	MOBIL OIL CORPORATION	MOBIL ALMO 525	10.00	0.9	0.09	L		1500	2500 T	III	
438	155	MOBIL OIL CORPORATION	MOBILMET NU	14,764.57	0.8	118.12	L		1500	2500 T	III	
447	159	MOBIL OIL CORPORATION	MOBILUX EP 023	75.33	0.63	0.47	GEL		1500	2500 T	III	

COPYRIGHT 2000, VANGUARD ENVIRONMENTAL, INC.

Target Chemical PSM / RMP
1. ≥ 10,000 Lbs.
2. At any point in time.
3. Connected to a process.

* T - Toxic; F - Flammable; R - Reactive

CAAA REPORT: ARROW GEAR COMPANY

ID	MSDS NO.	MANUFACTURER NAME	PRODUCT NAME	MAXIMUM WEIGHT	%	CHEMICAL WEIGHT	PHYSICAL STATE	TARGET CHEMICAL PSM / RMP	PROCESS SAFETY MGMT.	RISK MGMT. PROGRAM*	AIR TOXIC REG III (187)	AIR TOXIC REG VI (CLASS 1-2)
			MAXIMUM WEIGHT AGGREGATE=	***14,849.89***		***118.68***						
7440-47-3		**CHROMIUM**										
22	10	MANCHASTER TOOL COMPANY	MANCHASTER TOOL CARBIDE	10.00	5	0.50	S				III	
51	14	FELLOWS CORPORATION	HIGH SPEED STEELS AND TUNGSTEN CARBIDES	100.00	4.25	4.25	S				III	
111	32	SANDVIK COROMANT COMPANY	ALL SANDVIK COROMANT CEMENTED TUNGSTEN CARBIDE	10.00	3	0.30	S				III	
143	40	SANDVIK COROMANT COMPANY	CBN	10.00	2	0.20	S				III	
152	41	SANDVIK COROMANT COMPANY	PCD	10.00	2	0.20	S				III	
189	49	ITW FLUID PRODUCTS GROUP	YELLOW DXX-526, DLT, DXX-340	72.65	5	3.63	L				III	
498	172	VARIOUS	ALUMINUM ALLOYS, ALUMINUM ALLOYS CONTAINING LEAD	7,200.00	0.5	36.00	S				III	
501	173	VARIOUS	STAINLESS STEEL	5,700.00	30	1,710.00	S				III	
533	183	SANDVIK COROMANT COMPANY	ALL SANDVIK COROMANT CERMET GRADES	10.00	3	0.30	S				III	
			MAXIMUM WEIGHT AGGREGATE=	***13,122.65***		***1,755.38***						
12012-35-0		**CHROMIUM CARBIDE**										
23	10	MANCHASTER TOOL COMPANY	MANCHASTER TOOL CARBIDE	10.00	5	0.50	S				III	
50	14	FELLOWS CORPORATION	HIGH SPEED STEELS AND TUNGSTEN CARBIDES	100.00	5.1	5.10	S				III	
82	24	KENNMETAL, INC.	K313, K714, KC732, KS1, KZ313, KZ714, SP313, SP939	150.00	7	10.50	SP				III	
112	32	SANDVIK COROMANT COMPANY	ALL SANDVIK COROMANT CEMENTED TUNGSTEN CARBIDE	10.00	3	0.30	S				III	
536	183	SANDVIK COROMANT COMPANY	ALL SANDVIK COROMANT CERMET GRADES	10.00	2	0.20	S				III	
			MAXIMUM WEIGHT AGGREGATE=	***280.00***		***16.60***						

COPYRIGHT 2000, VANGUARD ENVIRONMENTAL, INC.

Target Chemical PSM / RMP
1. ≥ 10,000 Lbs.
2. At any point in time.
3. Connected to a process.

* T - Toxic, F - Flammable, R - Reactive

CAAA REPORT: ARROW GEAR COMPANY

ID	MSDS NO.	MANUFACTURER NAME	PRODUCT NAME	MAXIMUM WEIGHT	%	CHEMICAL WEIGHT	PHYSICAL STATE	TARGET CHEMICAL PSM / RMP	PROCESS SAFETY MGMT.	RISK MGMT. PROGRAM*	AIR TOXIC REG III (187)	AIR TOXIC REG VI (CLASS 1-2)
1308-38-9		**CHROMIUM OXIDE**										
157	44	ERICH NUSSLE OHG	CONDURSAL N523	20.00	100	20.00	PST				III	
			MAXIMUM WEIGHT AGGREGATE=	***20.00***		***20.00***						
7440-48-4		**COBALT**										
7	3	T.J. MARTIN COMPANY	ROTARY CUTTING TOOLS	10.00	25	2.50	S				III	
17	10	MANCHASTER TOOL COMPANY	MANCHASTER TOOL CARBIDE	10.00	26	2.60	S				III	
42	14	FELLOWS CORPORATION	HIGH SPEED STEELS AND TUNGSTEN CARBIDES	100.00	97	97.00	S				III	
76	22	KENNMETAL, INC.	TUNGSTEN CARBIDE WITH COBALT BINDER	100.00	25	25.00	S				III	
81	24	KENNMETAL, INC.	K313, K714, KC732, KS1, KZ313, KZ714, SP313, SP939	150.00	10	15.00	SP				III	
109	32	SANDVIK COROMANT COMPANY	ALL SANDVIK COROMANT CEMENTED TUNGSTEN CARBIDE	10.00	16	1.60	S				III	
140	40	SANDVIK COROMANT COMPANY	CBN	10.00	15	1.50	S				III	
148	41	SANDVIK COROMANT COMPANY	PCD	10.00	23	2.30	S				III	
172	48	NORTON COMPANY	DIAMOND OR CUBIC BORON NITRIDE GRINDING WHEELS	5,000.00	60	3,000.00	S				III	
207	52	ITW FLUID PRODUCTS GROUP	STEEL RED; DX-986, DX-296; RED DL	70.15	5	3.51	L				III	
239	69	BRUSH WELLMAN ENGINEERING MATERIALS	COPPER BERYLLIUM WROUGHT ALLOYS	168.00	2.7	4.54	S				III	
484	171	BRUSH WELLMAN ENGINEERED MATERIALS	COPPER BERYLLIUM WROUGHT ALLOY	275.00	2.7	7.43	S				III	
492	172	VARIOUS	ALUMINUM ALLOYS, ALUMINUM ALLOYS CONTAINING LEAD	7,200.00	2	144.00	S				III	
508	173	VARIOUS	STAINLESS STEEL	5,700.00	2	114.00	S				III	
532	183	SANDVIK COROMANT COMPANY	ALL SANDVIK COROMANT CERMET GRADES	10.00	13	1.30	S				III	
			MAXIMUM WEIGHT AGGREGATE=	***18,823.15***		***3,422.27***						

COPYRIGHT 2000, VANGUARD ENVIRONMENTAL, INC.

Target Chemical PSM / RMP
1. ≥ 10,000 Lbs.
2. At any point in time.
3. Connected to a process.

* T - Toxic
F - Flammable
R - Reactive

CAAA REPORT: ARROW GEAR COMPANY

ID	MSDS NO.	MANUFACTURER NAME	PRODUCT NAME	MAXIMUM WEIGHT	%	CHEMICAL WEIGHT	PHYSICAL STATE	TARGET CHEMICAL PSM / RMP	PROCESS SAFETY MGMT.	RISK MGMT. PROGRAM*	AIR TOXIC REG III (187)	AIR TOXIC REG VI (CLASS 1-2)
111-42-2		**DIETHANOLAMINE**										
522	179	MAN-GILL CHEMICAL.	RUSTAREST 53216	1,001.28	5	50.06	L				III	
			MAXIMUM WEIGHT AGGREGATE=	***1,001.28***		***50.06***						
122-39-4		**DIPHENYLAMINE**										
465	166	MOBIL OIL CORPORATION	MOBIL MULTI-PURPOSE ATF	2,204.66	1	22.05	L				III	
			MAXIMUM WEIGHT AGGREGATE=	***2,204.66***		***22.05***						
34590-94-8		**DIPROPYLENE GLYCOL METHYL ETHER**										
463	164	LPS LABORATORIES, INC.	LPS 3 HEAVY-DUTY RUST INHIBITOR	138.63	3	4.16	L				III	
			MAXIMUM WEIGHT AGGREGATE=	***138.63***		***4.16***						
64742-52-5		**DISTILLATES, PETROLEUM, HYDROTREATED HEAVY NAPHTHENIC**										
89	28	BLASER SWISSLUBE, INC.	BLASOCUT 2000 UNIVERSAL	8,150.58	65	5,297.87	L				III	
216	58	FRANKLIN OIL CORPORATION	RUST FOIL L-492 SPEC.	140.30	100	140.30	L				III	
296	99	CHICAGO MANUFACTURING AND DISTRIBUTION COMPANY	EXTREME PRESSURE OIL	39.48	12	4.74	L				III	
364	116	CHEMTOOL, INC.	CT 410-AG	423.02	100	423.02	L				III	
365	117	NFO TECHNOLOGIES, INC.	AIRLINE 10W/NR	38.00	100	38.00	L				III	
396	134	ASHLAND CHEMICAL COMPANY	TECTYL 275	408.78	40	163.51	L				III	
450	160	MOBIL OIL CORPORATION	MOBILUX 2	77.00	90	69.30	GEL				III	
461	164	LPS LABORATORIES, INC.	LPS 3 HEAVY-DUTY RUST INHIBITOR	138.63	15	20.79	L				III	
			MAXIMUM WEIGHT AGGREGATE=	***9,415.77***		***6,157.53***						

COPYRIGHT 2000, VANGUARD ENVIRONMENTAL, INC.

Target Chemical PSM / RMP
1. ≥ 10,000 Lbs.
2. At any point in time.
3. Connected to a process.

* T - Toxic; F - Flammable; R - Reactive

CAAA REPORT: ARROW GEAR COMPANY

ID	MSDS NO.	MANUFACTURER NAME	PRODUCT NAME	MAXIMUM WEIGHT	%	CHEMICAL WEIGHT	PHYSICAL STATE	TARGET CHEMICAL PSM / RMP	PROCESS SAFETY MGMT.	RISK MGMT. PROGRAM*	AIR TOXIC REG III (187)	AIR TOXIC REG VI (CLASS 1-2)
64742-53-6		**DISTILLATES, PETROLEUM, HYDROTREATED LIGHT NAPHTHENIC**										
1	1	ROYAL LUBRICANTS COMPANY, INC.	AEROSHELL FLUID 5LA	37.16	60	22.30	L				III	
38	13	TEXACO LUBRICANTS COMPANY	00482 TRANSULTEX A	4,087.36	94.66	3,869.09	L				III	
218	59	FRANKLIN OIL CORPORATION	RUST FOIL 2675	111.86	100	111.86	L				III	
285	95	PERKINS PRODUCTS, INC.	PERKOTE 30-353-AG	6,985.61	25	1,746.40	L				III	
366	117	NFO TECHNOLOGIES, INC.	AIRLINE 10W/NR	38.00	100	38.00	L				III	
407	140	THE STUTZ COMPANY	SC-120, 180, 240, 320, 400-AGHV LAPPING COMPOUNDS	3,000.00	60	1,800.00	PST				III	
451	160	MOBIL OIL CORPORATION	MOBILUX 2	77.00	15	11.55	GEL				III	
458	163	LPS LABORATORIES, INC.	LPS 2 INDUSTRIAL-STRENGTH LUBRICANT	35.07	10	3.51	L				III	
			MAXIMUM WEIGHT AGGREGATE=	***14,372.06***		***7,602.71***						
64742-65-0		**DISTILLATES, PETROLEUM, SOLVENT-DEWAXED HEAVY PARAFFI**										
129	39	SANDVIK COROMANT COMPANY	MOLYKOTE® 1000 PASTE	10.00	48	4.80	PST				III	
323	103	ULTRACHEM, INC.	ASSEMBLY FLUID #1	5.00	60	3.00	L				III	
367	118	MOBIL OIL CORPORATION	MOBIL ALMO 525	10.00	95	9.50	L				III	
			MAXIMUM WEIGHT AGGREGATE=	***25.00***		***17.30***						
39464-70-5		**ETHOXYLATED PHENYL PHOSPHATE**										
160	45	PERKINS PRODUCTS, INC.	PERCHEM 1345-CS	465.05	1	4.65	L				III	
			MAXIMUM WEIGHT AGGREGATE=	***465.05***		***4.65***						
107-21-1		**ETHYLENE GLYCOL**										
334	106	INDEPENDENT INK, INC.	73X WHITE MARKING INK	10.86	9	0.98	L				III	

COPYRIGHT 2000, VANGUARD ENVIRONMENTAL, INC.

Target Chemical PSM / RMP
1. ≥ 10,000 Lbs.
2. At any point in time.
3. Connected to a process.

* T - Toxic, F - Flammable, R - Reactive

CAAA REPORT: ARROW GEAR COMPANY

ID	MSDS NO.	MANUFACTURER NAME	PRODUCT NAME	MAXIMUM WEIGHT	%	CHEMICAL WEIGHT	PHYSICAL STATE	TARGET CHEMICAL PSM / RMP	PROCESS SAFETY MGMT.	RISK MGMT. PROGRAM*	AIR TOXIC REG III (187)	AIR TOXIC REG VI (CLASS 1-2)
337	107	INDEPENDENT INK, INC.	73X BLACK MARKING INK	8.35	13	1.09	L				III	
			MAXIMUM WEIGHT AGGREGATE=	***19.21***		***2.06***						
122-99-6		**ETHYLENE GLYCOL PHENYL ETHER**										
243	71	MAN-GILL CHEMICAL	POWER STRIP 720	2,820.97	90	2,538.87	L				III	
			MAXIMUM WEIGHT AGGREGATE=	***2,820.97***		***2,538.87***						
822-06-0		**HEXAMETHYLENE-1,6-DIISOCYANATE**										
526	180	THE DEXTER CORPORATION	POLYURETHANE CATALYST	8.85	10	0.89	L				III	
			MAXIMUM WEIGHT AGGREGATE=	***8.85***		***0.89***						
64742-54-7		**HYDROTREATED HEAVY PARAFFINIC DISTILLATE**										
2	1	ROYAL LUBRICANTS COMPANY, INC.	AEROSHELL FLUID 5LA	37.16	60	22.30	L				III	
69	20	AMOCO OIL COMPANY	RYKON PREMIUM GREASE NO.2	50.00	100	50.00	GEL				III	
281	93	PERKINS PRODUCTS, INC.	PERKUT 955	401.16	95	381.10	L				III	
288	97	PERKINS PRODUCTS, INC.	PERLUBE RO-68	22,059.17	100	22,059.17	L	22,059.17			III	
324	103	ULTRACHEM, INC.	ASSEMBLY FLUID #1	5.00	60	3.00	L				III	
368	118	MOBIL OIL CORPORATION	MOBIL ALMO 525	10.00	95	9.50	L				III	
			MAXIMUM WEIGHT AGGREGATE=	***22,562.49***		***22,525.06***						
7439-92-1		**LEAD**										
192	49	ITW FLUID PRODUCTS GROUP	YELLOW DXX-526, DLT, DXX-340	72.65	5	3.63	L				III	
325	104	ARCONIUM SPECIALTY ALLOYS	OSTALLOY 158	30.00	27.3	8.19	S				III	
476	170	VARIOUS	CARBON STEEL - HR & CR LEADED STEEL	10,600.00	1	106.00	S				III	

COPYRIGHT 2000, VANGUARD ENVIRONMENTAL, INC.

Target Chemical PSM / RMP
1. ≥ 10,000 Lbs.
2. At any point in time.
3. Connected to a process.

* T - Toxic; F - Flammable; R - Reactive

CAAA REPORT: ARROW GEAR COMPANY

ID	MSDS NO.	MANUFACTURER NAME	PRODUCT NAME	MAXIMUM WEIGHT	%	CHEMICAL WEIGHT	PHYSICAL STATE	TARGET CHEMICAL PSM / RMP	PROCESS SAFETY MGMT.	RISK MGMT. PROGRAM*	AIR TOXIC REG III (187)	AIR TOXIC REG VI (CLASS 1-2)
497	172	VARIOUS	ALUMINUM ALLOYS, ALUMINUM ALLOYS CONTAINING LEAD	7,200.00	1	72.00	S				III	
			MAXIMUM WEIGHT AGGREGATE=	***17,902.65***		***189.82***						
64742-89-8		**LIGHT ALIPHATIC SOLVENT NAPHTHA**										
59	18	CARBIT PAINT COMPANY	28Y10LF ORANGE S.D. GLOSS EN	10.00	40	4.00	L				III	
65	19	CARBIT PAINT COMPANY	28E9 ANSI 49 MED LT GREY SD GL	50.00	40	20.00	L				III	
318	102	MAYWOOD COMPANY	MAYWOOD ACRYL LACQUER THINNER	136.96	7	9.59	L				III	
345	110	RANDOLPH PRODUCTS COMPANY	AMS-3100-YELLOW ZINC CHROMATE PRIMER REV G PRIMER	38.80	20	7.76	L				III	
			MAXIMUM WEIGHT AGGREGATE=	***235.76***		***41.35***						
		LUBRICATING OIL MIXTURE										
258	80	ROYAL LUBRICANTS COMPANY, INC.	ROYCO 885	15.53	100	15.53	L				III	
			MAXIMUM WEIGHT AGGREGATE=	***15.53***		***15.53***						
7439-96-5		**MANGANESE**										
53	14	FELLOWS CORPORATION	HIGH SPEED STEELS AND TUNGSTEN CARBIDES	100.00	0.8	0.80	S				III	
181	48	NORTON COMPANY	DIAMOND OR CUBIC BORON NITRIDE GRINDING WHEELS	5,000.00	3	150.00	S				III	
313	101	SUNNEN PRODUCTS COMPANY	SUNNEN HONING STONES	100.00	1	1.00	S				III	
473	170	VARIOUS	CARBON STEEL - HR & CR LEADED STEEL	10,600.00	2	212.00	S				III	
494	172	VARIOUS	ALUMINUM ALLOYS, ALUMINUM ALLOYS CONTAINING LEAD	7,200.00	2	144.00	S				III	
504	173	VARIOUS	STAINLESS STEEL	5,700.00	6	342.00	S				III	
			MAXIMUM WEIGHT AGGREGATE=	***28,700.00***		***849.80***						

COPYRIGHT 2000, VANGUARD ENVIRONMENTAL, INC.

Target Chemical PSM / RMP
1. ≥ 10,000 Lbs.
2. At any point in time.
3. Connected to a process.

* T - Toxic; F - Flammable; R - Reactive

CAAA REPORT: ARROW GEAR COMPANY

ID	MSDS NO.	MANUFACTURER NAME	PRODUCT NAME	MAXIMUM WEIGHT	%	CHEMICAL WEIGHT	PHYSICAL STATE	TARGET CHEMICAL PSM / RMP	PROCESS SAFETY MGMT.	RISK MGMT. PROGRAM*	AIR TOXIC REG III (187)	AIR TOXIC REG VI (CLASS 1-2)
67-56-1		**METHYL ALCOHOL**										
272	86	METHANEX CORPORATION	METHANOL	1,828.03	99.85	1,825.29	L				III	
316	102	MAYWOOD COMPANY	MAYWOOD ACRYL LACQUER THINNER	136.96	21	28.76	L				III	
			MAXIMUM WEIGHT AGGREGATE=	***1,964.99***		***1,854.05***						
78-93-3		**METHYL ETHYL KETONE**										
230	65	THE TOLBER DIVISION	MICCROSTOP	7.93	75	5.95	L				III	
317	102	MAYWOOD COMPANY	MAYWOOD ACRYL LACQUER THINNER	136.96	9	12.33	L				III	
			MAXIMUM WEIGHT AGGREGATE=	***144.89***		***18.28***						
101-68-8		**METHYLENEBIS(PHENYLISOCYANATE)**										
250	76	SEALED AIR CORPORATION	INSTAPAK® COMPONENT "A"	828.42	45	372.79	L				III	
			MAXIMUM WEIGHT AGGREGATE=	***828.42***		***372.79***						
		MINERAL OIL MIXTURE										
417	146	MOBIL OIL CORPORATION	MOBILFLUID 424	148.65	100	148.65	L				III	
			MAXIMUM WEIGHT AGGREGATE=	***148.65***		***148.65***						
7440-02-0		**NICKEL**										
12	7	T.J. MARTIN COMPANY	NICKEL PLATED ABRASIVE PRODUCTS	10.00	100	10.00	S				III	
14	9	SAF-T-EZE DIV., STL COMPOUND CORPORATION	SAF-T-EZE NICKEL PREMIUM ANTI-SEIZE	5.00	100	5.00	GEL				III	
44	14	FELLOWS CORPORATION	HIGH SPEED STEELS AND TUNGSTEN CARBIDES	100.00	91.9	91.90	S				III	
146	40	SANDVIK COROMANT COMPANY	CBN	10.00	0.35	0.04	S				III	
168	48	NORTON COMPANY	DIAMOND OR CUBIC BORON NITRIDE GRINDING WHEELS	5,000.00	82	4,100.00	S				III	

COPYRIGHT 2000, VANGUARD ENVIRONMENTAL, INC.

Target Chemical PSM / RMP
1. ≥ 10,000 Lbs.
2. At any point in time.
3. Connected to a process.

* T - Toxic, F - Flammable, R - Reactive

CAAA REPORT: ARROW GEAR COMPANY

ID	MSDS NO.	MANUFACTURER NAME	PRODUCT NAME	MAXIMUM WEIGHT	%	CHEMICAL WEIGHT	PHYSICAL STATE	TARGET CHEMICAL PSM / RMP	PROCESS SAFETY MGMT.	RISK MGMT. PROGRAM*	AIR TOXIC REG III (187)	AIR TOXIC REG VI (CLASS 1-2)
238	69	BRUSH WELLMAN ENGINEERING MATERIALS	COPPER BERYLLIUM WROUGHT ALLOYS	168.00	22	36.96	S				III	
485	171	BRUSH WELLMAN ENGINEERED MATERIALS	COPPER BERYLLIUM WROUGHT ALLOY	275.00	2.2	6.05	S				III	
499	172	VARIOUS	ALUMINUM ALLOYS, ALUMINUM ALLOYS CONTAINING LEAD	7,200.00	0.5	36.00	S				III	
502	173	VARIOUS	STAINLESS STEEL	5,700.00	27	1,539.00	S				III	
531	183	SANDVIK COROMANT COMPANY	ALL SANDVIK COROMANT CERMET GRADES	10.00	15	1.50	S				III	
			MAXIMUM WEIGHT AGGREGATE=	***18,478.00***		***5,826.45***						
1313-99-1		**NICKEL OXIDE**										
56	15	KOEBEL METALLURGICAL SERVICES, INC.	KOEBEL SUPER CATALYST	500.00	10	50.00	S				III	
			MAXIMUM WEIGHT AGGREGATE=	***500.00***		***50.00***						
		OIL MIXTURE										
278	89	LAROCHE INDUSTRIES, INC.	AMMONIA	450.00	0.1	0.45	L				III	
			MAXIMUM WEIGHT AGGREGATE=	***450.00***		***0.45***						
7723-14-0		**PHOSPHORUS**										
184	48	NORTON COMPANY	DIAMOND OR CUBIC BORON NITRIDE GRINDING WHEELS	5,000.00	1	50.00	S				III	
479	170	VARIOUS	CARBON STEEL - HR & CR LEADED STEEL	10,600.00	1	106.00	S				III	
511	173	VARIOUS	STAINLESS STEEL	5,700.00	2	114.00	S				III	
			MAXIMUM WEIGHT AGGREGATE=	***21,300.00***		***270.00***						
28182-81-2		**POLYHEXAMETHYLENE DIISOCYANATE**										
523	180	THE DEXTER CORPORATION	POLYURETHANE CATALYST	8.85	80	7.08	L				III	
			MAXIMUM WEIGHT AGGREGATE=	***8.85***		***7.08***						

COPYRIGHT 2000, VANGUARD ENVIRONMENTAL, INC.

Target Chemical PSM / RMP
1. ≥ 10,000 Lbs.
2. At any point in time.
3. Connected to a process.

* T - Toxic; F - Flammable; R - Reactive

CAAA REPORT: ARROW GEAR COMPANY

ID	MSDS NO.	MANUFACTURER NAME	PRODUCT NAME	MAXIMUM WEIGHT	%	CHEMICAL WEIGHT	PHYSICAL STATE	TARGET CHEMICAL PSM / RMP	PROCESS SAFETY MGMT.	RISK MGMT. PROGRAM*	AIR TOXIC REG III (187)	AIR TOXIC REG VI (CLASS 1-2)
75-56-9		**PROPYLENE OXIDE**										
231	65	THE TOLBER DIVISION	MICCROSTOP	7.93	7	0.56	L			10000 T / F	III	
			MAXIMUM WEIGHT AGGREGATE=	***7.93***		***0.56***						
108-88-3		**TOLUENE**										
195	49	ITW FLUID PRODUCTS GROUP	YELLOW DXX-526, DLT, DXX-340	72.65	5	3.63	L				III	
242	70	MALLINCKRODT BAKER, INC.	TOLUENE	43.09	100	43.09	L				III	
314	102	MAYWOOD COMPANY	MAYWOOD ACRYL LACQUER THINNER	136.96	25	34.24	L				III	
349	110	RANDOLPH PRODUCTS COMPANY	AMS-3100~YELLOW ZINC CHROMATE PRIMER REV G PRIMER	38.80	5	1.94	L				III	
382	127	MOBIL OIL CORPORATION	MOBIL VELOCITE OIL NO. 10	1,436.37	0.01	0.14	L				III	
466	166	MOBIL OIL CORPORATION	MOBIL MULTI-PURPOSE ATF	2,204.66	0.09	1.98	L				III	
			MAXIMUM WEIGHT AGGREGATE=	***3,932.54***		***85.03***						
25498-49-1		**TRIPROPYLENE GLYCOL METHYL ETHER**										
213	54	SEALED AIR CORPORATION	HOLSTER/INSTAPACKER™ SOLVENT	5.00	99	4.95	L				III	
			MAXIMUM WEIGHT AGGREGATE=	***5.00***		***4.95***						
1330-20-7		**XYLENE**										
63	18	CARBIT PAINT COMPANY	28Y10LF ORANGE S.D. GLOSS EN	10.00	2	0.20	L				III	
67	19	CARBIT PAINT COMPANY	28E9 ANSI 49 MED LT GREY SD GL	50.00	3	1.50	L				III	
156	43	ERICH NUSSLE OHG	CONDURSAL 0090	20.00	25	5.00	L				III	
158	44	ERICH NUSSLE OHG	CONDURSAL N523	20.00	100	20.00	PST				III	
322	102	MAYWOOD COMPANY	MAYWOOD ACRYL LACQUER THINNER	136.96	2	2.74	L				III	

COPYRIGHT 2000, VANGUARD ENVIRONMENTAL, INC.

Target Chemical PSM / RMP
1. ≥ 10,000 Lbs.
2. At any point in time.
3. Connected to a process.

* T - Toxic
F - Flammable
R - Reactive

CAAA REPORT: ARROW GEAR COMPANY

ID	MSDS NO.	MANUFACTURER NAME	PRODUCT NAME	MAXIMUM WEIGHT	%	CHEMICAL WEIGHT	PHYSICAL STATE	TARGET CHEMICAL PSM / RMP	PROCESS SAFETY MGMT.	RISK MGMT. PROGRAM*	AIR TOXIC REG III (187)	AIR TOXIC REG VI (CLASS 1-2)
350	110	RANDOLPH PRODUCTS COMPANY	AMS-3100-YELLOW ZINC CHROMATE PRIMER REV G PRIMER	38.80	5	1.94	L				III	
427	149	MOBIL OIL CORPORATION	MOBILITH AW-2	100.00	0.13	0.13	GEL				III	
525	180	THE DEXTER CORPORATION	POLYURETHANE CATALYST	8.85	20	1.77	L				III	
			MAXIMUM WEIGHT AGGREGATE=	***384.61***		***33.28***						
11103-86-9		**ZINC POTASSIUM CHROMATE PIGMENT**										
344	110	RANDOLPH PRODUCTS COMPANY	AMS-3100-YELLOW ZINC CHROMATE PRIMER REV G PRIMER	38.80	30	11.64	L				III	
			MAXIMUM WEIGHT AGGREGATE=	***38.80***		***11.64***						
			AGGREGATE WEIGHT FOR ALL CLEAN AIR ACT CHEMICALS=			***54,962.67***						

COPYRIGHT 2000, VANGUARD ENVIRONMENTAL, INC.

Target Chemical PSM / RMP
1. ≥ 10,000 Lbs.
2. At any point in time.
3. Connected to a process.

* T - Toxic
F - Flammable
R - Reactive

VANGUARD
ENVIRONMENTAL, INC.
ENVIRONMENTAL & SAFETY COMPLIANCE SPECIALISTS

Part 14

ISO 14001 Certification
Environmental Management System (EMS)

International Business/Environmental Protection

The International Organization for Standardization (ISO) is composed of standards groups from 120 member nations. Founded in 1947, the ISO has set international standards for products and services in virtually all settings in business and industry. In the past few years, achieving ISO Certification has become the key to business success for firms actively involved in the global marketplace. Currently, more than 70,000 firms worldwide have made ISO 9000 Certification an integral part of their overall strategic plan to international business. The official American authority linked to ISO is the American National Standards Institute (ANSI) which is both a private and multi-sectorial organization.

ISO 14000 is a series of process standards: a family of environmental management standards and guidelines. It strives to establish an organization's environmental ethic and enhance its ability to attain and measure environmental performance. The standards influence all aspects of the industrial process from design to manufacturing and marketing. ISO 14000 Compliance is completely voluntary. All organizations who obtain Certification do so because they recognize that the benefits of ISO Certification in practice include cost cutting, improved production efficiency,

decreased liability, and enhanced global competitiveness. Policy experts also project that Certification will become a key factor in enforcement interaction between the corporate citizen and regulatory agencies, resulting in reduced governmental oversight and reduced insurance premiums. The international consensus is that both ISO-series standards encourage free trade and break down age-old trade barriers. Other benefits include improved regulatory compliance, risk management against enforcement penalties, pollution prevention, waste reduction, improvements in employee health and safety, and image enhancement in the community-at-large.

Adoption of ISO 9000 has skyrocketed. It is anticipated that 190,000 U.S. organizations will achieve ISO 9000 Certification by the year 2000 and ISO 14000 joins ISO 9000 as the second family of process standards developed by the ISO. When comparing the two series of process standards, the U.S. Environmental Protection Agency has declared, "ISO's 14000-series Environmental Management Standards are expected to have a significant impact on trade in the same way that ISO 9000-series Quality Management standards have." This is reflected in a poll commissioned by Dunn & Bradstreet, revealing that a third of all organizations currently certified under ISO 9000 also intend to seek ISO 14000 Certification.

It would be shortsighted to view the ISO 14000 series as merely a tool to achieve compliance, and those who insist on doing so will incur the costs of implementing an Environmental Management System (EMS) without reaping the full benefits of ISO 14000 Certification. Compliance, of course, will lose none of its importance in an organization's operations--on the contrary, compliance will gain in status as an organization strives to conform to its ever-dynamic, living EMS. Moreover, those companies who have not yet developed an agenda-oriented strategic plan for Environmental Compliance and Protection have a formidable challenge awaiting its endeavors to become ISO 14000 Certified. It is no secret that strategic planning in the environmental management field lags far beyond that of conducting business in general.

The Challenges of Achieving ISO 14000 Certification

There should be no illusion that the ISO 14000 Series will be easy to implement, even for organizations with sophisticated environmental programs. An organization must inventory and then assess all environmental aspects of its operations, products, and services. For expertise and objectivity, many firms seek assistance and leadership through a ***third-party guidance*** resource mixing a vast experience between environmental compliance management and management consulting. The majority of firms facing the need for Certification have simply found themselves lacking the time, talent, expertise, experience, manpower, and technical capability demanded over the 6-18 months it takes to achieve Certification with ISO 14000, and then to install the subsequent Continuous Improvement program required to monitor and maintain EMS Conformance over the

ensuing years. Costs for such third-party assistance are estimated by CEEM Information Services (Virginia) to run between $17,000 to over $100,000 per facility, depending on size, scope, and breadth of a company's products, processes, and environmental impact. Of course, this excludes costs associated with installing compliance programs as a part of satisfying regulatory compliance mandates. While these costs seem staggering, the benefits of Certification far outweigh the up-front investment in the long run. Those companies electing to decline on ISO 14000 Certification will definitely suffer through the loss of international business opportunities, and will also sacrifice the key aspects of "environmental economics": silver-lining benefits for those with the foresight to become certified. Many companies will feel there is no choice but to achieve Certification owing to marketplace competition it already faces on the one hand, and the unthinkable repercussions of losing market share from those customers, domestic and foreign, who will require Certification for maintaining continued business relationships on the other. This will force corporate cultures to shift employer and employee attitudes from ever-sacred production schedules and product design to environmental sensitivity, protection, and compliance monitoring and documentation. As ISO 9000 registration is a current prerequisite for many firms seeking to do international business, ISO 14000 Certification could be used by the World Bank and other financial institutions as a benchmark of an applicant's environmental management effectiveness when seeking loans and international aid. Small domestic businesses which supply international companies will often find the demand for ISO Certification being passed along to them. Therefore, the significant edge that ISO Certification gives a firm in international markets may provide small business with the same competitive benefits in the domestic market.

Certainly ISO 14000 standards have been designed to prevent environmental protection issues from becoming trade barriers. Certification of ISO 9000 and 14000 have become a passport to international trade for the 21st Century. Stakeholders need assurance that environmental systems are properly managed. Many experts anticipate the U.S. EPA to view ISO 14000 Certification as a part of "due diligence" regarding environmental compliance and enforcement.

Various Standards of the ISO 14000 Series

The ISO 14000 series is composed of some 20 standards. The ISO 14001 (Environmental Management Systems Specification with Guidance for Use) and the ISO 14004 (Guidance on Developing and Continuing Environmental Management Systems) have been adopted for publication as of July, 1996. The other standards will be adopted and released through late 1996 and early 1997. Because of this wide breadth of coverage, there is potential for confusion regarding what is required and what is not required for ISO 14000 Certification. The answer is surprisingly simple. To become certified under ISO 14000, a company need only show conformance to the EMS document: ISO 14001.

SURVEY OF ISO 14000 ELEMENTS IN THE SERIES

The first series of requirements begins with the environmental policy: the foundation of the system. The second part establishes the EMS and the necessary operational mechanisms. The third part mandates the reviews to ensure EMS conformance with the requirements of the EMS. The fourth requires a commitment to continual improvement of the EMS. This is called the plan-do-check-act cycle.

ISO 14001 - "Environmental Management Systems--Specification with Guidance for Use"

ISO 14001 is the cornerstone for the entire certification process. It first requires that a company have a publicly available environmental policy articulated by top management. This policy should be specific to the nature of the organization and include commitments toward legal and regulatory compliance, prevention of pollution, and continual improvement of the EMS itself. Procedures shall be established and maintained to identify environmental aspects and their associated significant impacts. Legal and other aspects must be made available to employees, and procedures to ensure conformance must be consistent with the environmental policy. Objectives and targets must also be developed and documented in alignment with the environmental policy.

The three most challenging requirements for companies seeking ISO 14001 Certification are:

- Identifying the steps required to meet regulatory compliance requirements, especially if these steps have had cursory attention prior to Certification launch;
- Installing and managing a coherent documentation system in a practical, usable, and inspection-ready manner;
- Securing a compliance commitment from every employee. Certification standards require total corporate awareness and acceptance of environmental responsibilities from every employee from top management to the floor.

ISO 14004 - "Environmental Management Systems --General Guidelines on Principles, Systems, and Supporting Techniques"

ISO 14004 is used as a barometer for conformance to the 14001 standard. It provides practical help in tailoring the EMS to the company's operation and processes, setting forth adherence principles to the EMS. The recommendations from this document include:

- identification of legislative and regulatory requirements applicable to company of record;

- identification of environmental aspects, to determine those that have or can have significant environmental impacts and liabilities;
- evaluation of environmental performance compared with relevant internal criteria, external standards, regulations, codes of practice, and sets of principles, and guidelines;
- identification of existing environmental management practices and procedures;
- identification of the policies and procedures dealing with procurement and contracting activities;
- acquisition of feedback through the investigation of previous incidents of noncompliance;
- evaluation of opportunities and strategies for competitive advantage;
- reception of input from interested and involved parties;
- identification of functions or activities of other organizational systems that can enable or impede the company's environmental performance.

ISO 14010 - 14012 - "Guidelines for Environmental Auditing"

Once a company has its EMS in place, it must have a system to objectively evaluate its effectiveness. Therefore, ISO has developed three auditing standards to be used as guidelines for internal and external auditors. The first, **ISO 14010 - "Guidelines for Environmental Auditing --General Principles of Environmental Auditing,"** is intended to give guidance on the general principles necessary to conduct environmental audits. The second, **ISO 14011/1 - "Guidelines for Environmental Auditing --Audit Procedures -- Auditing of EMS's,"** establishes procedures for planning and performing an audit of the EMS for conformance to expressed company intentions. This is a companion piece to 14010. The third, **ISO 14012 - "Guidelines for Environmental Auditing--Qualification Criteria for Environmental Auditors,"** addresses the qualifications of auditors and auditing teams. The standard applies to both internal and third-party auditors.

ISO 14020 - 14024 Labeling Standards

ISO 14020 - "Environmental Labeling--General Principles" is a standard to be used in the drafting process of all the labeling standards. It provides general principles to guide the development of specific environmental claims. **ISO 14021 - "Terms & Definitions for Self-Declaration Environmental Claims"** establishes general guidelines regarding environmental claims in relation to the supply of goods and services. The objective is to effect a reduction in the environmental burdens and impacts associated with the consumption of goods and services and to harmonize the use of environmental claims. **ISO 14022 - "Symbols"** is a standard to ensure that symbols used to denote such things as recyclability and recycled content are understood to mean the same thing universally. **ISO 14023 - "Testing and Verification Methodologies"** is still under evaluation. **ISO 14024 - "Guide for Certification Procedures"** is a guide for practitioner programs to certify labeling and overcome the problems associated with the 25 contradictory national labeling programs now in existence.

ISO 14031 - "Evaluation of Environmental Performance"

ISO 14031 is the standard intended to define Environmental Performance Evaluation (EPE) of management and operational systems of companies, and to provide guidance for adopting such a process in the context of an EMS, thus using a measurement/evaluation system, as well as a system for setting strategy.

ISO 14040 - "Life-Cycle Assessment Standards"

ISO 14040 is dedicated to actively assessing the entire 14000 Series once the cycle begins for a company.

ISO 14060 - "Product Standard-Development Guide"

ISO 14060 defines standards to reduce adverse environmental effects and to achieve intended product performance.

THE ISO 14000 CERTIFICATION PROCESS

It is widely understood that the steps in the ISO 14001 Certification will mirror those of the model set by the ISO 9000 quality system certification. The seven-step process is as follows:

- **Scope and Implementation.** The scope of the certification and the site to which it applies will be identified. An initial review will be conducted, comparing existing systems in the company against the ISO 14000 benchmark requirements. Having discovered those gaps in the company's compliance *vis-a-vis* the benchmark, the conformance will be effected and the requirements of the standard implemented. Once implementation assures confidence that requirements have been, or are on schedule to be met, the certification process can begin.
- **Application.** The certification body or "registrar" requires a completed application. The application will contain the rights and obligations of both the certification body and the client.
- **Document Review.** The certification body will require submission of documentation relative to the Environmental Management System (EMS) developed site- and operations-specific to the company. Some certification bodies will perform this review at your facility; many do it in their own office.
- **Pre-Assessment.** Most registrars will recommend a pre-assessment review; some require it. Pre-assessment means a complete assessment of the operation's current status.

- **Assessment.** After pre-assessment, or after it has been determined that the company's documented EMS conforms to the requirements of the ISO 14001 standard, a full assessment is conducted. Depending on the size of the operation, this can take several days.
- **Certification.** There are three possible results of an assessment: One is certification. If the company has successfully implemented all the elements of ISO 14001 with

perhaps only minor nonconformances detected, it will become certified. Another possible result could be a conditional or provisional approval. If all of the elements of the standard have been addressed and documented, but perhaps not fully implemented, or there are a number of nonconformances detected in a particular area, showing a negative trend, the company or site may be conditionally approved. Conditional approval requires you to respond to any nonconformances noted during the time defined by the certification body. The certification body will evaluate corrective action and decide whether or not to approve certification. Disapproval usually occurs when the system is documented but has not been implemented properly, or when basic elements of the standard, such as auditing, corrective action, or process control have not been fully addressed. This situation will definitely result in a re-evaluation by the certification body prior to issuing a certificate. Once Certification has been awarded, the company receives a certificate and is listed in appropriate registers and directories published for the purpose of recognizing those achieving official Certification.

- **Surveillance.** Because an EMS is a living system, certificates must be renewed. Most certification bodies conduct surveillance on a semi-annual or annual basis.

VANGUARD
ENVIRONMENTAL, INC.
ENVIRONMENTAL & SAFETY COMPLIANCE SPECIALISTS

Part 15

Glossary: Terms, Definitions, Acronyms, & MSDS Terminology

ACGIH:	American Conference of Governmental Industrial Hygienists
ATSDR:	Agency for Toxic Substances and Disease Registry
BATF:	Bureau of Alcohol, Tobacco and Firearms
BEI:	Biological Exposure Index
CI:	Color Index
CAA:	Clean Air Act
CAG:	Carcinogen Assessment Group, EPA
CAS#:	Chemical Abstracts Service Registry Number
CDB:	Center for Drugs and Biologics
CDC:	Centers for Disease Control
CDRH:	Center for Devices and Radiological Health
CEC:	Chemical Evaluation Committee, NTP
CERCLA:	Comprehensive Environmental Response, Compensation, and Liability Act
CFR:	Code of Federal Regulations
CFSAN:	Center for Food Safety and Applied Nutrition
CHEMTREC:	Chemical Transportation Emergency Center
CIIT:	Chemical Industry Institute of Toxicology
CL:	Chemical List
CMA:	Chemical Manufacturer's Association
CMR:	Chemical Marketing Register
CPSA:	Consumer Product Safety Act

CPSC:	Consumer Product Safety Commission
CVM:	Center for Veterinary Medicine
CWA:	Clean Water Act
DCCR:	Division of Cancer Control and Rehabilitation, NCI
DCE:	Division of Cancer Etiology, NCI
DEQ:	Department of Environmental Quality
DHEW:	United States Department of Health, Education, and Welfare
DHHS:	United States Department of Health and Human Services
DNCP:	Diet, Nutrition and Cancer Programs
DOE:	United States Department of Energy
ECAD:	Existing Chemical Assessment Division
ED:	Effective Dose (i.e., affects 1% of study group)
EDF:	Environmental Defense Fund
EEC:	European Economic Community
EHS:	Extremely Hazardous Substance, EPA
EPA:	Environmental Protection Agency
EPCRA:	Emergency Planning and Community Right-to-Know Act (Public Law 99-499)
ETS:	Emergency Temporary Standard
FAO:	Food and Agricultural Organization
FD&CA:	Food, Drug and Cosmetic Act
FDA:	Food and Drug Administration
FHSA:	Federal Hazardous Substance Act
FIFRA:	Federal Insecticide, Fungicide, and Rodenticide Act
FORM (R):	Used to comply with SECTION 313
FR:	Federal Register
FY:	Fiscal Year
GRAS:	Generally Recognized As Safe
Hr:	Hour
HSDB:	Hazardous Substances Data Bank
I.M.:	Intramuscular
I.P.:	Intraperitoneal
I.V.:	Intravenous
IARC:	International Agency for Research on Cancer

IDLH:	Immediately Dangerous to Life and Health
ITC:	Interagency Testing Committee
LEPC:	Local Emergency Planning Committee
MCL:	Maximum Contaminant Level
MCLG:	Maximum Contaminant Level Goal
Min.:	Minute
MSDS:	Material Safety Data Sheet
MSHA:	Mine Safety and Health Administration
MW:	Milliwatt(s)
NCI:	National Cancer Institute
NOS:	Not Otherwise Specified
NESHAP:	National Emissions Standards for Hazardous Air Pollutants
NFPA:	National Fire Protection Association
NIOSH:	National Institute for Occupational Safety and Health
NIEHS:	National Institute of Environmental Health Sciences
NIH:	National Institutes of Health
NLM:	National Library of Medicine
NO:	Nitrogen Oxides
NOES:	National Occupational Exposure Survey
NOHS:	National Occupational Hazard Survey
NORS:	National Organic Reconnaissance Survey
NPDES:	National Pollutant Discharge Elimination System
NPRM:	Notice of Proposed Rule making
NRC:	National Response Center
NTP:	National Toxicology Program
NWF:	National Wildlife Federation
OAQPS:	Office of Air Quality Planning and Standards, EPA
ODW:	Office of Drinking Water, EPA
OHEA:	Office of Health and Environmental Assessment, EPA
OMB:	Office of Management and Budget
OPP:	Office of Pesticide Programs, EPA
OPTS:	Office of Pesticide Programs and Toxic Substances, EPA
OSH Act:	Occupational Safety and Health Act

OSHA:	Occupational Safety and Health Administration
OSW:	Office of Solid Wastes, EPA
OTA:	Office of Technology Assessment
OTC:	Over-The-Counter, EPA
OTS:	Office of Toxic Substances
OWPS:	Office of Water Planning and Standards, EPA
OWRS:	Office of Water Regulations and Standards, EPA
PAH:	Polycyclic Aromatic Hydrocarbon
PEL:	Permissible Exposure Limit
PHS:	Public Health Service
PMN:	Premanufacture Notice
PO:	Phosphorus Oxides
PPM:	Parts *Per* Million
PPPA:	Poison Prevention Packaging Act
PR:	Pesticide Registration
R&D:	Research and Development
RCRA:	Resource Conservation and Recovery Act
RMCL:	Recommended Maximum Contaminant Level
RPAR:	Rebuttable Presumption Against Registration
RQ:	Reportable Quantity (measured in pounds)
RETECS:	Registry of Toxic Effects of Chemical Substances
SARA Title III:	Super Fund Amendments and Reauthorization Act of 1986
SDWA:	Safe Drinking Water Act
SERC:	State Emergency Response Commission
SIC:	Standard Industrial Code
SNUR:	Significant New Use Rule
SO:	Sulfur Oxides
SPRD:	Special Pesticide Review Division
SUS:	Sibilate Universal Seconds
TB:	Tuberculosis
Tier I and II:	Forms required SARA TITLE III, Section 312.
TLV:	Threshold Limit Value
TPQ:	Threshold Planning Quantity (measured in pounds)

TSCA:	Toxic Substances Control Act
TWA:	Time-Weighted Average
USDA:	United States Department of Agriculture
USDOC:	United States Department of Commerce
USDOI:	United States Department of the Interior
USDOT:	United States Department of Transportation
USITC:	United States International Trade Commission
USP:	United States Pharmacopoeia
Vol.:	Volume
WHO:	World Health Organization

MSDS TERMINOLOGY

Action Level - A term used by OSHA and NIOSH to express the level of toxicant that requires medical surveillance, usually one half of the permissible exposure limit.

Acute - short term period of action measured in seconds, minutes, hours or days.

Acute effects of Overexposure - the adverse effects that normally are evident immediately or shortly after exposure to a hazardous material, without implying a degree of severity.

Air Monitoring - The sampling for and measuring of pollutants in the atmosphere.

Audiogram - A record of hearing loss or hearing level measured at several different frequencies. Record of audiometric examination.

Carcinogen - chemical which has been demonstrated to cause cancer in humans, or to cause cancer in animals and therefore is considered capable of causing cancer in humans.

CAS No. - the Chemical Abstract Service assigned number which uniquely identifies a chemical.

Chronic - a long-time period of action in weeks, months, or years.

Chronic effect of Overexposure - the adverse effects that develop slowly over long period of time or upon repeated prolonged exposure to hazardous material, without implying a degree of severity.

CERCLA Hazardous Substance - substance on the list defined in Section 101(14) of CERCLA. The list includes: Any substance designated under section 311(b)(2)(A) of the Clean Air Act; any element, compound, mixture, solution or substance designated under Section 102 of CERCLA: any hazardous waste having the characteristics identified under or listed pursuant to Section 3001 of the Resource Conservation and Recovery Act; any toxic pollutant listed under Section 307 of the Clean Water Act; any hazardous air pollutant listed under Section 112 of the Clean Air Act; and any imminently hazardous chemical substance or mixture on which EPA has taken action under Section 7 of the Toxic Substances Control Act.

CFR - Code of Federal Regulations, the rules promulgated under U.S. law, published in the Federal Register.

Chemical - Any element, chemical compound or mixture of elements and or compounds.

Chemical Manufacturer - an employer with a workplace where chemicals are produced for use or distribution.

Chemical Name - the scientific designation of a chemical in accordance with the nomenclature system developed by the International Union of Pure and Applied Chemistry (IUPAC) or the Chemical Abstract Service (CAS) rules of nomenclature, or a name that will clearly identify the chemical for the purpose of conducting a hazard evaluation.

Combustible - able to catch on fire and burn.

Combustible liquid - a liquid having a flash point at or above 100 deg. F (37.8 deg. C) but below 200 deg. F (93.3 deg. C), excluding any liquid mixture that has one or more components with flash point above 200 deg. F (93.3 deg. C).

Common Name - any designation or identification of a chemical - other that its chemical name - such as code name, code number, trade name, brand name or generic name.

Compressed Gas - (A) a gas or mixture of gases having, in a container, an absolute pressure exceeding 40 psi at 70 degrees F (21 degrees C); or (B) a gas or mixture of gases having, in a container, an absolute pressure exceeding 104 psi at 130 degrees F (54.4 degrees C) regardless of the pressure at 70 degrees F; or © a liquid having a vapor pressure exceeding 40 psi at 100 degrees F (37.8 degrees C) as determined by ASTM D-323-72.

Concentration - the amount of one substance in another substance.

Container - any bag , barrel, bottle, box, can, cylinder, drum, reaction vessel, storage tank or the like that contains a hazardous chemical. Pipes or piping systems, engines, fuel tanks or other operating systems in a vehicle are not considered containers under the HCS.

Corrosive - a chemical that causes visible destruction of, or irreversible alterations in, living tissue by chemical action at the site of contact.

Cutaneous Hazards - chemicals that affect the dermal layer of the body.

Dermal - By or through the skin.

Dispersability - the degree of distributability, spreadability, or scatterability.

Distributor - a business, other than a chemical manufacturer or importer, that supplies hazardous chemicals to other distributors or to purchasers.

Environment - water, air, and land and the interrelationship that exists among and between water, air, and land and all living things.

Explosive - a chemical that causes a sudden, almost instantaneous release of pressure, gas and heat when subjected to sudden shock, pressure or high temperature.

Extremely Hazardous Substance - a substance listed under section 302(a)(2) of SARA Title III. Under Title III, revision to the list must take into account a chemical's toxicity, reactivity, volatility, dispersability, combustibility or flammability.

Facility - all buildings, equipment, structures and other stationary items that are located on a single site or on contiguous or adjacent sites and are owned or operated by the same person (or by any person who controls, is controlled by, or under common control with, such person). Under SARA Title III section 304, the term also includes motor vehicles, rolling stock and aircraft.

Flammable - Catches on fire easily and burns readily.

Flammable liquid - a liquid having a flash point below 100 deg. F (37.8 deg. C), excluding any liquid mixture. (For test method, see definition of "Flash Point".) 1910.106(a); CFR 173.115(a).

Flash Point - the minimum temperature at which a liquid gives off a vapor in sufficient concentration

to ignite when tested.

Hazardous Air Pollutants (HAP's) - also known as air toxics, these are chemicals listed under Section 112 of the Clean Air Act.

Hazardous Chemical - any chemical that is a physical hazard or a health hazard (HSC and Title III definition), Both Title III section 311 and the HCS provide for certain exemptions from this definition.

Hazardous Chemical Substance or Mixture - a substance that is one or more of the following: an extremely toxic material, highly toxic material, toxic material, corrosive material, irritant, strong sensitizer, flammable liquid, combustible liquid, strong oxidizer or pressure-generating material.

Hazard Warning - any words, pictures or combination thereof appearing on a label or another appropriate form of warning that convey the hazards of the chemical(s) in the container(s).

Health Hazard - a chemical for which there is statistically significant evidence based on at least one study conducted in accordance with established scientific principles that acute or chronic health effects may occur in exposed employees. The term includes chemicals that are carcinogens, toxic or highly toxic agents, reproductive toxins, irritants, corrosives, sensitizers, hepatotoxins, nephrotoxins, neurotoxins, agents that act on the hematopoietic system, and agents that damage the lungs, skin, eyes or mucous membranes.

Hearing Conservation - The prevention or minimization of noise-induced deafness through the use of hearing protection devices; the control of noise through engineering methods, annual audiometric tests, and employee training.

Hematopoietic System - the body's blood system, including the production and circulation of blood and the blood itself.

Hepatotoxins - chemicals that cause liver damage.

Import - to cause a chemical to be imported into the customs territory of the United States. For purposes of this definition, "to cause" means to intend that the chemical be imported and to control

the identity of the imported chemical and the amount to be imported.

Importer - the first business with employees within the Customs Territory of the United States that receives hazardous chemicals produced in other countries for the purpose of supplying them to distributors or manufacturing purchasers within the United States.

Impurity - a chemical substance which is unintentionally present with another chemical substance or mixture.

Irritant - a chemical substance or mixture, not a corrosive, which on immediate, prolonged, or repeated contact with normal living tissue induces a local inflammatory response in the skin, eyes, or mucous membranes. 16 CFR 1500.41.

Label - written or graphic matter displayed or affixed to the container of a hazardous product.

LEL (Lower Explosive Limit) - the lowest concentration of gas or vapor (% by volume in air) which will burn or explode if an ignition source is present.

Manufacture - to produce, prepare, import or compound a toxic chemical. Manufacture also applies to a toxic chemical that is produced coincidentally during the manufacture, processing, use or disposal of another chemical or mixture of chemicals, including a toxic chemical or mixture of chemicals as a by-product, and a toxic chemical that remains in that other chemical or mixture of chemicals as an impurity.

Material Safety Data Sheet (MSDS) - a document that contains information and instructions on the chemical and physical characteristics of a substance, its hazards and risks, the safe handling requirements and actions to be taken in the event of a fire, spill, or overexposure, etc.

mg/m^3 - the weight in milligrams of a substance *per* cubic meter of air.

Mixture - a heterogeneous association of substances where the various individual substances retain their identities and can usually be separated by mechanical means. This includes solutions or compounds but does not include alloys or amalgams (Title III definition - Section 302 regulations). The OSHA/HSC

defines a mixture as any combination of two or more chemicals if the combination is not, in whole or in part, the result of a chemical reaction.

Multi-Media - Water, air, land, or any combination thereof.

Nephrotoxins - chemicals that cause kidney damage.

Neurotoxins - chemicals that produce their primary toxic effect on the nervous system.

National Pollutant Discharge Elimination Systems (NPDES) - the national program for issuing, modifying, revoking, and reissuing, terminating, monitoring and enforcing permits, and imposing and enforcing pre-treatment requirements under Section(s) 307, 402, 318 and 405 of the Clean Water Act.

Organic Peroxide - an organic compound that contains the bivalent-0-0-structure and that may be considered to be a structural derivative of hydrogen peroxide where one or both of the hydrogen atoms has been replaced by an organic radical.

Otherwise Used - under Section 313 of SARA Title III, any use of a toxic chemical that is not covered by the terms "manufacture" or "process" and includes use of a toxic chemical contained in a mixture or trade name product. Relabeling or redistributing a container of a toxic chemical where no repackaging of the toxic chemical occurs does not constitute use or processing of the toxic chemical.

Oxidizer - a chemical other than a blasting agent or explosive that initiates or promotes combustion in other materials, thereby causing fire either of itself or through the release of oxygen or other gases.

Physical Hazard - a chemical for which there is scientifically valid evidence that it is a combustible liquid; a compressed gas, explosive, flammable, an organic peroxide, an oxidizer, pyrophoric, unstable (reactive) or water-reactive.

PEL (Permissible Exposure Limit) - the OSHA -established maximum level to which employees may be exposed to a given material during an 8 hour day, 40 hour work week.

Pollution Prevention - source reduction, as defined under the Pollution Prevention Act, and other

practices that reduce or eliminate the creation of pollutants through: (1) increased efficiency in the use of raw materials, energy, water or other resources; (2) or protection of natural resources by conservation.

PPE - Personal protective equipment.

PPM/B - Parts *per* million/billion.

Process - the preparation of a toxic chemical, after its manufacture, for distribution in commerce in the same form or physical state as or in a different form or physical state from that in which it was received by the person so preparing such substance or as part of an article containing the toxic chemical. Process also applies to the processing of a toxic chemical contained in a mixture or trade name product.

Produce - to manufacture, process, formulate or repackage.

Pyrophoric - a chemical that will ignite spontaneously in air at a temperature of 130 degrees F (54.4 degrees C) or below.

Reactive - See "Unstable."

Release - any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping or disposing into the environment (including the abandonment or discarding of barrels, containers and other closed receptacles) of any hazardous substance or toxic chemical.

Reportable Quantity (RQ) - the chemical quantity at or above which a non-exempt accidental release of a CERCLA hazardous substance or a SARA Title III EHS must be reported to emergency response officials.

Reproductive Toxins - chemicals that affect the reproductive capabilities including chromosomal damage (mutations) or effects on fetuses (teratogenesis).

Section 313 Water Priority Chemicals - Under the National Pollutant Discharge Elimination System (NPDES) permit system this means a chemical category that is: (1) listed under Section 313 of SARA Title III; (2) present at or above threshold levels at a facility subject to Section 313 reporting

requirements: (3)or meets at least one of the following criteria: (i) is listed in Appendix D of 40 CFR 122 on either Table II (organic priority pollutants), Table III (certain metals, cyanide and phenols) or table V (certain toxic pollutants and hazardous substances); (ii) are listed as a hazardous substance pursuant to Section 311 (b)(2)(A) of the Clean Water Act at 40 CFR 116.4; or (iii) is comprised of pollutants for which EPA has published acute or chronic water quality criteria.

Sensitizer - a chemical that causes a substantial proportion of exposed people or animals to develop an allergic reaction in normal tissue after repeated exposure to the chemical.

Source Reduction - any practice that (1) reduces the amount of any hazardous substance, pollutant or contaminant entering any waste stream or otherwise released into the environment (including fugitive emissions) prior to recycling, treatment or disposal; and (2) reduces the hazards to public health and the environment associated with the release of such substances, pollutants or contaminants. The term does not include any practice that alters the physical, chemical or biological characteristics of the volume of a hazardous substance, pollutant or contaminant through a process or activity which itself is not integral to and necessary for the production of a product or the providing of a service. Examples of practices not covered include recycling, energy recovery, treatment and disposal.

State - any state of the United States, the District of Columbia, the Commonwealth of Puerto Rico, Guam, American Samoa, the United States Virgin Islands, the Northern Mariana Islands, and any other territory or possession over which the United States has jurisdiction.

Teratogen - a chemical or other agent that causes malformation of the fetus.

TWA - the time weighted average concentration for a normal 8-hour work day or 40- hour work week, to which nearly all workers may be exposed, day after day, without adverse effect.

Threshold Planning Quantity (TPQ) - the chemical quantity that triggers facility coverage under Section 302 of SARA Title III. The amount is calculated as the total amount of an extremely hazardous substance present at any one time at a facility at concentrations greater than 1 percent by weight, regardless of location, number of containers or method of storage.

Title - the Emergency Planning and Community Right-to-Know Act of 1986 (Title III of the

Superfund Amendments and Reauthorization Act of 1986).

TLV (Threshold Limit Values) - the airborne concentration of the substance which represents conditions under which it is believed nearly all workers may be repeatedly exposed day after day without adverse effect.

Toxic - Causing acute or chronic injury to the human body or suspected of being able to cause disease or injury under some conditions. The HC defines "toxic" and "highly toxic" specifically by the chemicals median lethal dose and median lethal concentration for laboratory animals.

Toxic Chemical - a chemical or chemical category listed under section 313C of Title III. A chemical may be added to the list if it is known to cause, or can reasonably be anticipated to cause, significant adverse human health effects at concentration levels that are reasonably likely to exist beyond facility site boundaries as a result of continuous or frequently occurring releases. In addition, chemicals may be added if they cause, or may reasonably be anticipated to cause, cancer or teratogenic effects or serious or irreversible reproductive dysfunctions, neurological disorders, inheritable genetic mutations or other chronic health effects. A chemical that causes or may cause a significant adverse effect on the environment may be included.

Trade Name Product - a chemical or mixture of chemicals that is distributed to other persons and that incorporates a toxic chemical component not identified by the applicable chemical name or Chemical Abstracts Service number listed in 40 CFR 372.65.

Trade Secret - under the HCS, a trade secret is any confidential formula, pattern, process, device, information or compilation of information that is used in a submitter's business, and that gives the submitter an opportunity to obtain an advantage over competitors who do not know or use it. Title III allows only chemical identity to be claimed trade secret.

Unstable (Reactive) - a chemical that in the pure state, or as produced or transported, will vigorously polymerize, decompose, condense, or will become self-reactive under conditions of shocks, pressure or temperature.

Vapor - the gas given off by a solid or liquid substance at ordinary temperatures.