CONTAINS NO CBI

89 JUL -3 PM 3:19

SECTION 1 GENERAL MANUFACTURER, IMPORTER, AND PROCESSOR INFORMATION

PART A GENERAL REPORTING INFORMATION

1.01 This Comprehensive Assessment Information Rule (CAIR) Reporting Form has been completed in response to the Federal Register Notice of..... [1][2] [2][2] [8][8]
mo. day year

CBI

[ ] a. If a Chemical Abstracts Service Number (CAS No.) is provided in the Federal Register, list the CAS No. ..... [0][2][6][4][7][7]-[6][2]-[5]

b. If a chemical substance CAS No. is not provided in the Federal Register, list either (i) the chemical name, (ii) the mixture name, or (iii) the trade name of the chemical substance as provided in the Federal Register.

(i) Chemical name as listed in the rule ..... _____

(ii) Name of mixture as listed in the rule .... _____

(iii) Trade name as listed in the rule ..... _____

c. If a chemical category is provided in the Federal Register, report the name of the category as listed in the rule, the chemical substance CAS No. you are reporting on which falls under the listed category, and the chemical name of the substance you are reporting on which falls under the listed category.

Name of category as listed in the rule ..... _____

CAS No. of chemical substance ..... [ ][ ][ ][ ][ ][ ]-[ ][ ]-[ ]

Name of chemical substance ..... _____

1.02 Identify your reporting status under CAIR by circling the appropriate response(s).

CBI

Manufacturer 1

[ ] Importer 2

Processor ..... (3)

X/P manufacturer reporting for customer who is a processor 4

X/P processor reporting for customer who is a processor 5

EPA-OTS

000611066K

90-890000494

[ ] Mark (X) this box if you attach a continuation sheet.

1.03 Does the substance you are reporting on have an "x/p" designation associated with it in the above-listed Federal Register Notice?

CBI

[ ]

Yes ..... [X] Go to question 1.04

No ..... [ ] Go to question 1.05

1.04 a. Do you manufacture, import, or process the listed substance and distribute it under a trade name(s) different than that listed in the Federal Register Notice? Circle the appropriate response.

CBI

[ ]

Yes 1

No 2

b. Check the appropriate box below:

[ ] You have chosen to notify your customers of their reporting obligations

Provide the trade name(s) .... _____

_____

[ ] You have chosen to report for your customers

[X] You have submitted the trade name(s) to EPA one day after the effective date of the rule in the Federal Register Notice under which you are reporting.

1.05 If you buy a trade name product and are reporting because you were notified of your reporting requirements by your trade name supplier, provide that trade name.

CBI

[ ]

Trade name ..... LUPRANATE T80 — TYPE 2

Is the trade name product a mixture? Circle the appropriate response.

Yes 1

No ..... (2)

1.06 Certification -- The person who is responsible for the completion of this form must sign the certification statement below:

CBI

[ ]

"I hereby certify that, to the best of my knowledge and belief, all information entered on this form is complete and accurate."

ALBERT A. KILCHESTY — NAME

Albert A. Kilchesty — SIGNATURE

7-3-89 — DATE SIGNED

TECH. SERVICE DIRECTOR — TITLE

(215) 723 - 6051 — TELEPHONE NO.

[ ] Mark (X) this box if you attach a continuation sheet.

1.07 Exemptions From Reporting -- If you have provided EPA or another Federal agency with the required information on a CAIR Reporting Form for the listed substance within the past 3 years, and this information is current, accurate, and complete for the time period specified in the rule, then sign the certification below. You are required to complete section 1 of this CAIR form and provide any information now required but not previously submitted. Provide a copy of any previous submissions along with your Section 1 submission.

CBI
[__]

"I hereby certify that, to the best of my knowledge and belief, all required information which I have not included in this CAIR Reporting Form has been submitted to EPA within the past 3 years and is current, accurate, and complete for the time period specified in the rule."

N/A		
NAME	SIGNATURE	DATE SIGNED
TITLE	(_____) _____ - _____ TELEPHONE NO.	DATE OF PREVIOUS SUBMISSION

1.08 CBI Certification -- If you have asserted any CBI claims in this report you must certify that the following statements truthfully and accurately apply to all of those confidentiality claims which you have asserted.

CBI
[__]

"My company has taken measures to protect the confidentiality of the information, and it will continue to take these measures; the information is not, and has not been, reasonably ascertainable by other persons (other than government bodies) by using legitimate means (other than discovery based on a showing of special need in a judicial or quasi-judicial proceeding) without my company's consent; the information is not publicly available elsewhere; and disclosure of the information would cause substantial harm to my company's competitive position."

N/A		
NAME	SIGNATURE	DATE SIGNED
TITLE	(_____) _____ - _____ TELEPHONE NO.	

[__] Mark (X) this box if you attach a continuation sheet.

PART B CORPORATE DATA

1.09 Facility Identification

CBI Name [P][E][C][O][R][A] [C][O][R][P][O][R][A][T][I][O][N]

[ ] Address [1][6][5] [W][A][M][B][O][L][D] [R][O][A][D]
Street

[H][A][R][L][E][Y][S][V][I][L][L][E]
City

[P][A] [1][9][4][3][8]--[2][0][9][1]
State Zip

Dun & Bradstreet Number .....[0][0]-[2][2][6]-[6][8][4][9]

EPA ID Number .....PAD[0][0][2][2][6][6][8][4][9]

Employer ID Number .....2.[3][2][2][8][7][5][4][5]

Primary Standard Industrial Classification (SIC) Code .....[2][8][9][1]

Other SIC Code .....[ ][ ][ ][ ]

Other SIC Code .....[ ][ ][ ][ ]

1.10 Company Headquarters Identification

CBI Name [P][E][C][O][R][A] [C][O][R][P][O][R][A][T][I][O][N]

[ ] Address [1][6][5] [W][A][M][B][O][L][D] [R][O][A][D]
Street

[H][A][R][L][E][Y][S][V][I][L][L][E]
City

[P][A] [1][9][4][3][8]--[2][0][9][1]
State Zip

Dun & Bradstreet Number .....[0][0]-[2][2][6]-[6][8][4][9]

Employer ID Number .....2.[3][2][2][8][7][5][4][5]

[ ] Mark (X) this box if you attach a continuation sheet.

1.11 Parent Company Identification

CBI Name [P E C O R A C O R P O R A T I O N]

[ ] Address [1 6 5 W A M B O L D R O A D]
Street

[H A R L E Y S V I L L E]
City

[P A] [1 9 4 3 8]--[2 0 9 1]
State Zip

Dun & Bradstreet Number .....[0 0]-[2 2 6]-[6 8 4 9]

1.12 Technical Contact

CBI Name [A L B E R T A K I L C H E S T Y]

[ ] Title [T E C H N I C A L S E R V I C E D I R E C T O R]

Address [1 6 5 W A M B O L D R O A D]
Street

[H A R L E Y S V I L L E]
City

[P A] [1 9 4 3 8]--[2 0 9 1]
State Zip

Telephone Number .....[2 1 5]-[7 2 3]-[6 0 5 1]

1.13 This reporting year is from ..... [0 1] [8 8] to [1 2] [8 8]
Mo. Year Mo. Year

[ ] Mark (X) this box if you attach a continuation sheet.

1.14 Facility Acquired -- If you purchased this facility during the reporting year, provide the following information about the seller:

N/A

CBI Name of Seller [__]

[__] Mailing Address [__]
Street

[__]
City

[__][__] [__][__][__][__][__]--[__][__][__][__]
State Zip

Employer ID Number .....[__][__][__][__][__][__][__][__]

Date of Sale .....[__][__] [__][__] [__][__]
Mo. Day Year

Contact Person [__]

Telephone Number .....[__][__][__]-[__][__][__]-[__][__][__][__]

1.15 Facility Sold -- If you sold this facility during the reporting year, provide the following information about the buyer:

N/A

CBI Name of Buyer [__]

[__] Mailing Address [__]
Street

[__]
City

[__][__] [__][__][__][__][__]--[__][__][__][__]
State Zip

Employer ID Number .....[__][__][__][__][__][__][__][__]

Date of Purchase .....[__][__] [__][__] [__][__]
Mo. Day Year

Contact Person [__]

Telephone Number .....[__][__][__]-[__][__][__]-[__][__][__][__]

[__] Mark (X) this box if you attach a continuation sheet.

1.16 For each classification listed below, state the quantity of the listed substance that was manufactured, imported, or processed at your facility during the reporting year.

CBI

[__]

Classification	Quantity (kg/yr)
Manufactured	NA
Imported	NA
Processed (include quantity repackaged)	77022 Kg.
Of that quantity manufactured or imported, report that quantity:	
In storage at the beginning of the reporting year	NA
For on-site use or processing	NA
For direct commercial distribution (including export)	NA
In storage at the end of the reporting year	NA
Of that quantity processed, report that quantity:	
In storage at the beginning of the reporting year	5750 Kg.
Processed as a reactant (chemical producer)	77022 Kg.
Processed as a formulation component (mixture producer)	NA
Processed as an article component (article producer)	NA
Repackaged (including export)	NA
In storage at the end of the reporting year	5801 Kg

[__] Mark (X) this box if you attach a continuation sheet.

PART C IDENTIFICATION OF MIXTURES

1.17 Mixture -- If the listed substance on which you are required to report is a mixture or a component of a mixture, provide the following information for each component chemical. (If the mixture composition is variable, report an average percentage of each component chemical for all formulations.)

CBI

[ ]

Component Name	Supplier Name	Average % Composition by Weight (specify precision, e.g., 45% ± 0.5%)
NA	NA	NA
		Total 100%

[ ] Mark (X) this box if you attach a continuation sheet.

2.04 State the quantity of the listed substance that your facility manufactured, imported, or processed during the 3 corporate fiscal years preceding the reporting year in descending order.

CBI

[__] Year ending ..... [1][2] [8][7]
Mo. Year

Quantity manufactured ..... NA kg

Quantity imported ..... NA kg

Quantity processed ..... 82,127 kg

Year ending ..... [1][2] [8][6]
Mo. Year

Quantity manufactured ..... NA kg

Quantity imported ..... NA kg

Quantity processed ..... 80,145 kg

Year ending ..... [1][2] [8][5]
Mo. Year

Quantity manufactured ..... NA kg

Quantity imported ..... NA kg

Quantity processed ..... 45,992 kg

2.05 Specify the manner in which you manufactured the listed substance. Circle all appropriate process types.

CBI

NA

[__]

Continuous process 1

Semicontinuous process 2

Batch process 3

[__] Mark (X) this box if you attach a continuation sheet.

2.06 Specify the manner in which you processed the listed substance. Circle all appropriate process types.
CBI

[__]

Continuous process 1

Semicontinuous process 2

Batch process ..... (3)

2.07 State your facility's name-plate capacity for manufacturing or processing the listed substance. (If you are a batch manufacturer or batch processor, do not answer this question.)
CBI

[__]

Manufacturing capacity ..... _____ kg/yr

Processing capacity ..... _____ kg/yr

2.08 If you intend to increase or decrease the quantity of the listed substance manufactured, imported, or processed at any time after your current corporate fiscal year, estimate the increase or decrease based upon the reporting year's production volume.
CBI

[__]

	Manufacturing Quantity (kg)	Importing Quantity (kg)	Processing Quantity (kg)
Amount of increase	NA	NA	1155 Kg.
Amount of decrease			

[__] Mark (X) this box if you attach a continuation sheet.

2.09 For the three largest volume manufacturing or processing process types involving the listed substance, specify the number of days you manufactured or processed the listed substance during the reporting year. Also specify the average number of hours per day each process type was operated. (If only one or two operations are involved, list those.)

CBI

[ ]

	Days/Year	Average Hours/Day
Process Type #1 (The process type involving the largest quantity of the listed substance.)		
Manufactured	NA	NA
Processed	82	8
Process Type #2 (The process type involving the 2nd largest quantity of the listed substance.)		
Manufactured	NA	NA
Processed	NA	NA
Process Type #3 (The process type involving the 3rd largest quantity of the listed substance.)		
Manufactured	NA	NA
Processed	NA	NA

2.10 State the maximum daily inventory and average monthly inventory of the listed substance that was stored on-site during the reporting year in the form of a bulk chemical.

CBI

[ ]

Maximum daily inventory ..... _____ kg

Average monthly inventory ..... _____ kg

[ ] Mark (X) this box if you attach a continuation sheet.

2.11 Related Product Types -- List any byproducts, coproducts, or impurities present with the listed substance in concentrations greater than 0.1 percent as it is manufactured, imported, or processed. The source of byproducts, coproducts, or impurities means the source from which the byproducts, coproducts, or impurities are made or introduced into the product (e.g., carryover from raw material, reaction product, etc.).

CBI

[ ]

CAS No.	Chemical Name	Byproduct, Coproduct or Impurity[1]	Concentration (%) (specify ± % precision)	Source of Byproducts, Coproducts, or Impurities
7647-01-0	HYDROCHLORIC ACID	I	0.1 ± 0.1	IN CAIR SUBSTANCE

[1]Use the following codes to designate byproduct, coproduct, or impurity:

B = Byproduct
C = Coproduct
I = Impurity

[ ] Mark (X) this box if you attach a continuation sheet.

2.12 Existing Product Types -- List all existing product types which you manufactured, imported, or processed using the listed substance during the reporting year. List the quantity of listed substance you use for each product type as a percentage of the total volume of listed substance used during the reporting year. Also list the quantity of listed substance used captively on-site as a percentage of the value listed under column b., and the types of end-users for each product type. (Refer to the instructions for further explanation and an example.)

CBI
[ ]

a. Product Types[1]	b. % of Quantity Manufactured, Imported, or Processed	c. % of Quantity Used Captively On-Site	d. Type of End-Users[2]
K	5	0	I, CM, CS
X	95	0	CM, CS, I

[1]Use the following codes to designate product types:

A = Solvent
B = Synthetic reactant
C = Catalyst/Initiator/Accelerator/Sensitizer
D = Inhibitor/Stabilizer/Scavenger/Antioxidant
E = Analytical reagent
F = Chelator/Coagulant/Sequestrant
G = Cleanser/Detergent/Degreaser
H = Lubricant/Friction modifier/Antiwear agent
I = Surfactant/Emulsifier
J = Flame retardant
K = Coating/Binder/Adhesive and additives
L = Moldable/Castable/Rubber and additives
M = Plasticizer
N = Dye/Pigment/Colorant/Ink and additives
O = Photographic/Reprographic chemical and additives
P = Electrodeposition/Plating chemicals
Q = Fuel and fuel additives
R = Explosive chemicals and additives
S = Fragrance/Flavor chemicals
T = Pollution control chemicals
U = Functional fluids and additives
V = Metal alloy and additives
W = Rheological modifier
X = Other (specify) SEALANTS

[2]Use the following codes to designate the type of end-users:

I = Industrial
CM = Commercial
CS = Consumer
H = Other (specify) _____

[ ] Mark (X) this box if you attach a continuation sheet.

2.13 Expected Product Types -- Identify all product types which you expect to manufacture, import, or process using the listed substance at any time after your current corporate fiscal year. For each use, specify the quantity you expect to manufacture, import, or process for each use as a percentage of the total volume of listed substance used during the reporting year. Also list the quantity of listed substance used captively on-site as a percentage of the value listed under column b., and the types of end-users for each product type. (Refer to the instructions for further explanation and an example.)

CBI
[ ]

a. Product Types[1]	b. % of Quantity Manufactured, Imported, or Processed	c. % of Quantity Used Captively On-Site	d. Type of End-Users[2]
K	4	0	I, CM, CS
X	96	0	I, CM, CS

[1]Use the following codes to designate product types:

A = Solvent
B = Synthetic reactant
C = Catalyst/Initiator/Accelerator/Sensitizer
D = Inhibitor/Stabilizer/Scavenger/Antioxidant
E = Analytical reagent
F = Chelator/Coagulant/Sequestrant
G = Cleanser/Detergent/Degreaser
H = Lubricant/Friction modifier/Antiwear agent
I = Surfactant/Emulsifier
J = Flame retardant
K = Coating/Binder/Adhesive and additives
L = Moldable/Castable/Rubber and additives
M = Plasticizer
N = Dye/Pigment/Colorant/Ink and additives
O = Photographic/Reprographic chemical and additives
P = Electrodeposition/Plating chemicals
Q = Fuel and fuel additives
R = Explosive chemicals and additives
S = Fragrance/Flavor chemicals
T = Pollution control chemicals
U = Functional fluids and additives
V = Metal alloy and additives
W = Rheological modifier
X = Other (specify) SEALANTS

[2]Use the following codes to designate the type of end-users:

I = Industrial
CM = Commercial
CS = Consumer
H = Other (specify) _____

[ ] Mark (X) this box if you attach a continuation sheet.

2.14 Final Product -- Complete the following table for each type of final product manufactured, imported, or processed at your facility that contains the listed substance other than as an impurity.

CBI

[ ]

a. Product Type[1]	b. Final Product's Physical Form[2]	c. Average % Composition of Listed Substance in Final Product	d. Type of End-Users[3]
K	B, D	4	I, CM, CS
X	D	5	I, CM, CS

[1]Use the following codes to designate product types:

A = Solvent
B = Synthetic reactant
C = Catalyst/Initiator/Accelerator/Sensitizer
D = Inhibitor/Stabilizer/Scavenger/Antioxidant
E = Analytical reagent
F = Chelator/Coagulant/Sequestrant
G = Cleanser/Detergent/Degreaser
H = Lubricant/Friction modifier/Antiwear agent
I = Surfactant/Emulsifier
J = Flame retardant
K = Coating/Binder/Adhesive and additives
L = Moldable/Castable/Rubber and additives
M = Plasticizer
N = Dye/Pigment/Colorant/Ink and additives
O = Photographic/Reprographic chemical and additives
P = Electrodeposition/Plating chemicals
Q = Fuel and fuel additives
R = Explosive chemicals and additives
S = Fragrance/Flavor chemicals
T = Pollution control chemicals
U = Functional fluids and additives
V = Metal alloy and additives
W = Rheological modifier
X = Other (specify) SEALANTS

[2]Use the following codes to designate the final product's physical form:

A = Gas
B = Liquid
C = Aqueous solution
D = Paste
E = Slurry
F1 = Powder
F2 = Crystalline solid
F3 = Granules
F4 = Other solid
G = Gel
H = Other (specify) _____

[3]Use the following codes to designate the type of end-users:

I = Industrial
CM = Commercial
CS = Consumer
H = Other (specify) _____

[ ] Mark (X) this box if you attach a continuation sheet.

2.15 Circle all applicable modes of transportation used to deliver bulk shipments of the listed substance to off-site customers.
CBI

[ ] Truck 1

Railcar 2

Barge, Vessel 3

Pipeline 4

Plane 5

Other (specify) WE SELL A FINISHED PRODUCT AND DO NOT DELIVER BULK SHIPMENTS OF THE LISTED SUBSTANCE. 6

2.16 Customer Use -- Estimate the quantity of the listed substance used by your customers or prepared by your customers during the reporting year for use under each category of end use listed (i-iv).
CBI

[ ]

Category of End Use

i. Industrial Products

Chemical or mixture ..... NA kg/yr

Article ..... 15404 kg/yr

ii. Commercial Products

Chemical or mixture ..... NA kg/yr

Article ..... 46213 kg/yr

iii. Consumer Products

Chemical or mixture ..... NA kg/yr

Article ..... 2651 kg/yr

iv. Other

Distribution (excluding export) ..... NA kg/yr

Export ..... 1200 kg/yr

Quantity of substance consumed as reactant ..... NA kg/yr

Unknown customer uses ..... NA kg/yr

[ ] Mark (X) this box if you attach a continuation sheet.

SECTION 3 PROCESSOR RAW MATERIAL IDENTIFICATION

PART A GENERAL DATA

3.01 Specify the quantity purchased and the average price paid for the listed substance for each major source of supply listed. Product trades are treated as purchases.
CBI The average price is the market value of the product that was traded for the listed substance.
[ ]

Source of Supply	Quantity (kg)	Average Price ($/kg)
The listed substance was manufactured on-site.	NA	NA
The listed substance was transferred from a different company site.	NA	NA
The listed substance was purchased directly from a manufacturer or importer.	77022	2.55
The listed substance was purchased from a distributor or repackager.	NA	NA
The listed substance was purchased from a mixture producer.	NA	NA

3.02 Circle all applicable modes of transportation used to deliver the listed substance to your facility.
CBI
[ ]

Truck ..... (1)

Railcar 2

Barge, Vessel 3

Pipeline 4

Plane 5

Other (specify) _____ 6

[ ] Mark (X) this box if you attach a continuation sheet.

3.03 a. Circle all applicable containers used to transport the listed substance to your facility.
CBI

[ ]

Bags 1

Boxes 2

Free standing tank cylinders 3

Tank rail cars 4

Hopper cars 5

Tank trucks 6

Hopper trucks 7

Drums 8

Pipeline 9

Other (specify) _____ 10

b. If the listed substance is transported in pressurized tank cylinders, tank rail cars, or tank trucks, state the pressure of the tanks.

Tank cylinders ..... NA mmHg

Tank rail cars ..... NA mmHg

Tank trucks ..... NA mmHg

[ ] Mark (X) this box if you attach a continuation sheet.

PART B RAW MATERIAL IN THE FORM OF A MIXTURE

3.04 If you obtain the listed substance in the form of a mixture, list the trade name(s) of the mixture, the name of its supplier(s) or manufacturer(s), an estimate of the average percent composition by weight of the listed substance in the mixture, and the amount of mixture processed during the reporting year.

CBI

[ ]

Trade Name	Supplier or Manufacturer	Average % Composition by Weight (specify ± % precision)	Amount Processed (kg/yr)
NA	NA	NA	NA

[ ] Mark (X) this box if you attach a continuation sheet.

PART C RAW MATERIAL VOLUME

3.05 CBI [ ] State the quantity of the listed substance used as a raw material during the reporting year in the form of a class I chemical, class II chemical, or polymer, and the percent composition, by weight, of the listed substance.

	Quantity Used (kg/yr)	% Composition by Weight of Listed Substance in Raw Material (specify ± % precision)
Class I chemical	77022	99.7 ± 0.3
Class II chemical	NA	NA
Polymer	NA	NA

[ ] Mark (X) this box if you attach a continuation sheet.

SECTION 4 PHYSICAL/CHEMICAL PROPERTIES

General Instructions:

If you are reporting on a mixture as defined in the glossary, reply to questions in Section 4 that are inappropriate to mixtures by stating "NA -- mixture."

For questions 4.06-4.15, if you possess any hazard warning statement, label, MSDS, or other notice that addresses the information requested, you may submit a copy or reasonable facsimile in lieu of answering those questions which it addresses.

PART A PHYSICAL/CHEMICAL DATA SUMMARY

4.01 Specify the percent purity for the three major[1] technical grade(s) of the listed substance as it is manufactured, imported, or processed. Measure the purity of the substance in the final product form for manufacturing activities, at the time you import the substance, or at the point you begin to process the substance.

CBI [ ]

	Manufacture	Import	Process
Technical grade #1	NA % purity	NA % purity	99.7 % purity
Technical grade #2	_____ % purity	_____ % purity	_____ % purity
Technical grade #3	_____ % purity	_____ % purity	_____ % purity

[1]Major = Greatest quantity of listed substance manufactured, imported or processed.

4.02 Submit your most recently updated Material Safety Data Sheet (MSDS) for the listed substance, and for every formulation containing the listed substance. If you possess an MSDS that you developed and an MSDS developed by a different source, submit your version. Indicate whether at least one MSDS has been submitted by circling the appropriate response.

Yes ..... (1)

No 2

Indicate whether the MSDS was developed by your company or by a different source.

Your company ..... (1)

Another source 2

[ ] Mark (X) this box if you attach a continuation sheet.

403-0

MATERIAL SAFETY DATA SHEET

BASF Corporation Chemicals Division
100 Cherry Hill Road, Parsippany, New Jersey 07054 (201) 263-3400

NOV 19 198 BASF

PRODUCT NUMBER: 585622 LUPRANATE* T80 "PRELIMINARY"

SECTION I

*Registered Trademark

TRADE NAME: LUPRANATE* T80 "PRELIMINARY"

CHEMICAL NAME: Toluene Diisocyanate

SYNONYMS: TDI; Tolylene Diisocyanate

FORMULA: CH(3)C(6)H(3){NCO}2

CHEMICAL FAMILY: Aromatic Isocyanates

MOL. WGT.: 174.16

SECTION II - INGREDIENTS

COMPONENT	CAS NO.	%	PEL/TLV - SOURCE
LUPRANATE* T80		100	Not established
2,4 Toluene Diisocyanate	584-84-9	80	0.005 ppm ACGIH, 1983 The OSHA P.E.L. is 0.02 ppm Ceiling
2,6 Toluene Diisocyanate	91-08-7	20	

SECTION III - PHYSICAL DATA

BOILING/MELTING POINT @760 mm Hg: 484 F/ N/A

pH: N/A

VAPOR PRESSURE mm Hg @20 C: .01

Vapor Density (Air=1): 6.0

SPECIFIC GRAVITY OR BULK DENSITY: 1.22

Freezing Point: 51.8-53.6 F

SOLUBILITY IN WATER: Water Reacts

APPEARANCE: Colorless Liquid ODOR: Pungent INTENSITY: Strong

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (TEST METHOD): 270 F TAG Open Cup

AUTOIGNITION TEMP: N/A

FLAMMABILITY LIMITS IN AIR (% BY VOL) LOWER: 0.9% UPPER: 9.5%

EXTINGUISHING MEDIUM	Use water fog, foam or CO2 extinguishing media.
SPECIAL FIREFIGHTING PROCEDURES	Personnel engaged in fighting isocyanate fires must be protected against nitrogen dioxide fumes as well as isocyanate vapors. Firefighters must wear self-contained breathing apparatus and turnout gear.
UNUSUAL FIRE AND EXPLOSION HAZARDS	Avoid water contamination in closed containers or confined areas; carbon dioxide gas is generated.

EMERGENCY TELEPHONE NUMBER

CHEMTREC 800-424-9300 201-263-3400

THIS NUMBER IS AVAILABLE DAYS, NIGHTS, WEEKENDS, AND HOLIDAYS

SECTION V - HEALTH DATA

TOXICOLOGICAL TEST DATA:	RESULT:
LUPRANATE* T80	
2,4 Toluene Diisocyanate	Severe eye and skin irritant, sensitizer
Rat, Oral LD50	5.8 g/kg.
Mouse, Inhalation LC50	10 ppm/4H

EFFECTS OF OVEREXPOSURE:

Inhalation of the vapors causes severe irritation to lungs, and pulmonary edema can occur after a serious vapor exposure.
Liquid contact causes serious skin and eye burns.
Pulmonary sensitization can occur in some individuals leading to asthma-type spasms of the bronchial tubes and difficulty in breathing.
Preclude from exposure those individuals having a history of respiratory illness, asthmatic conditions, eye damage or TDI sensitization.
Recent studies indicate that overexposure may be associated with chronic lung impairment.
In a National Toxicology Program (NTP) study, TDI was carcinogenic when given orally to rats and mice at maximum tolerated doses.
TDI was not carcinogenic to rats in a two-year inhalation study.
Based on the results of the oral study, TDI was included in the NTP Annual Report on Carcinogens.

FIRST AID PROCEDURES:

Eyes--Flush eyes with flowing water for at least 15 minutes
If irritation develops, consult a physician.
Skin--Wash affected skin areas thoroughly with soap and water.
Remove clothing and launder contaminated clothing before reuse. If irritation develops, consult a physician.
Ingestion--If swallowed, dilute with water.
Do NOT induce vomiting.
Never give fluids or induce vomiting if the victim is unconscious or having convulsions.
Get medical attention immediately.
Inhalation--If inhaled, move to fresh air. Aid in breathing if necessary, and get medical attention.

SECTION VI - REACTIVITY DATA

STABILITY: Stable.
CONDITIONS TO AVOID: Avoid temperatures >40 C for extended periods of time.

CHEMICAL INCOMPATIBILITY: Basic compounds, caustic soda, tertiaryamines, water

HAZARDOUS DECOMPOSITION PRODUCTS: TDI vapors, NOx, CO and HCN.

HAZARDOUS POLYMERIZATION: May occur.
CONDITIONS TO AVOID: Avoid contamination with moisture and other products that react with isocyanates.

CORROSIVE TO METAL: No | **OXIDIZER:** No

SECTION VII - SPECIAL PROTECTION

RESPIRATORY PROTECTION:
Approved respirator for transferring operations or escape.
Self-contained breathing apparatus if the P.E.L. is exceeded, or in confined areas or if a leak occurs.

EYE PROTECTION: Wear fitted goggles or face shield and safety glasses.

PROTECTIVE CLOTHING: Rubber gloves, coveralls, boots and rubber apron which must be cleaned after each use.

VENTILATION: Use local exhaust wherever vapors are generated.

OTHER: Maintain work area below P.E.L.

SECTION VIII - ENVIRONMENTAL DATA

ENVIRONMENTAL TOXICITY DATA:

Aquatic toxicity rating: TLm 96: 10 ppm - 1 ppm.

SPILL AND LEAK PROCEDURES:

LUPRANATE* T80 is a RCRA-regulated product. Wear protective clothing, evacuate all not involved in the cleanup. For minor spills, absorb with absorbent and containerize into open top drums. Decontaminate spill area with a mixture of 90% water, 8% concentrated ammonia and 2% detergent. Dispose of

HAZARDOUS SUBSTANCE SUPERFUND: Yes RQ (lbs): 100

WASTE DISPOSAL METHOD:

waste in a RCRA-permitted facility.
Incinerate or landfill in a RCRA-permitted facility.

HAZARDOUS WASTE 40CFR261: Yes HAZARDOUS WASTE NUMBER: U 223

CONTAINER DISPOSAL:

Containers should be neutralized with liquid decontaminant. Empty containers, containing less than 1" of residue, may be landfilled. If containers are not empty, they must be disposed as a hazardous waste in a RCRA-licensed facility.

SECTION IX - SHIPPING DATA

D.O.T. PROPER SHIPPING NAME (49CFR172.101-102)	HAZARDOUS SUBSTANCE (49CFR CERCLA LIST)
Toluene Diisocyanate	Yes REPORTABLE QUANTITY (RQ) 1.0 lb

D.O.T. HAZARD CLASSIFICATION (CFR172.101-102) PRIMARY	SECONDARY
Poison B	

D.O.T. LABELS REQUIRED (49CFR172.101-102)	D.O.T. PLACARDS REQUIRED (CFR172.504)	POISON CONSTITUENT (49CFR172.203(K))
Poison	Poison	TDI

BILL OF LADING DESCRIPTION
Toluene Diisocyanate--Poison B--UN 2078

CC NO. 190	UN/NA CODE 2078

DATE PREPARED: 4 / 17 / 86 UPDATED: 10 / 31 / 86

WHILE BASF CORPORATION BELIEVES THE DATA SET FORTH HEREIN ARE ACCURATE AS OF THE DATE HEREOF, BASF CORPORATION MAKES NO WARRANTY WITH RESPECT THERETO AND EXPRESSLY DISCLAIMS ALL LIABILITY FOR RELIANCE THEREON. SUCH DATA ARE OFFERED SOLELY FOR YOUR CONSIDERATION, INVESTIGATION, AND VERIFICATION.

SECTION X - PRODUCT LABEL

LUPRANATE* T80

DANGER: POISON
CONTACT WITH EYES AND SKIN RESULTS IN SERIOUS BURNS. INHALATION OF VAPORS CAUSES SEVERE IRRITATION TO LUNGS. PULMONARY EDEMA MAY OCCUR. PULMONARY SENSITIZATION CAN OCCUR IN SOME INDIVIDUALS, LEADING TO ASTHMA-TYPE SPASMS OF THE BRONCHIAL TUBES AND DIFFICULTY IN BREATHING. INDIVIDUALS WITH A HISTORY OF RESPIRATORY ILLNESS, ASTHMATIC CONDITIONS, EYE DAMAGE OR TDI SENSITIZATION SHOULD NOT BE EXPOSED TO THIS PRODUCT.
IN AN NTP STUDY, TDI WAS CARCINOGENIC TO RODENTS GIVEN HIGH ORAL DOSES AND IS INCLUDED IN THE NTP ANNUAL REPORT ON CARCINOGENS. TDI WAS NOT CARCINOGENIC TO RATS IN A TWO-YEAR INHALATION STUDY.

Use with local exhaust. Wear an approved respirator or self-contained breathing apparatus, fitted goggles or face shield and safety glasses, rubber gloves, coveralls, boots, apron and other protective clothing as necessary to prevent contact.

FIRST AID:
Eyes-Immediately wash eyes with running water for 15 minutes. If irritation develops, consult a physician.
Skin-Wash affected areas with soap and water. Remove and launder contaminated clothing before reuse. If irritation develops, consult a physician.
Ingestion-If swallowed, DO NOT INDUCE VOMITING. Dilute with water or milk and call a physician immediately. Never give fluids or induce vomiting if the victim is unconscious or having convulsions.
Inhalation-Move to fresh air. Aid in breathing, if necessary, and get immediate medical attention.

HANDLING AND STORAGE: Keep containers closed and store in a well-ventilated cool, dry place. Outage of any partial container should be filled with dry inert gas at atmospheric pressure to avoid reaction with moisture. Contamination by moisture or basic compounds can cause dangerous pressure buildup in a closed container. Store above 60 F to prevent freezing and isomer separation. If solidified, do not exceed 95 F while thawing to prevent discoloration. Mix before using. Use only ventilation which will keep the vapor concentration below the TLV ceiling limit of 0.02 ppm.

IN CASE OF SPILLS OR LEAKS: Material is a RCRA-regulated product. Spills should be contained, absorbed and placed in suitable containers for disposal in a RCRA-licensed facility.

IN CASE OF FIRE: Use water fog, foam or CO_2 extinguishing media. Firefighters should be equipped with self-contained breathing apparatus and turnout gear for protection against TDI vapors and toxic decomposition products.

EMPTY CONTAINERS: All labeled precautions must be observed when handling, storing and transporting empty containers due to product residues. Do not reuse this container unless it is professionally cleaned and reconditioned.

DISPOSAL: Spilled material, unused contents and empty containers must be disposed of in accordance with local, state and federal regulations. Refer to our Material Safety Data Sheet for specific disposal instructions.

IN CASE OF CHEMICAL EMERGENCY: Call CHEMTREC day or night for assistance and information concerning spilled material, fire, exposure and other chemical accidents 800-424-9300.

ATTENTION: This product is sold solely for use by industrial institutions. Refer to our Technical Bulletin and Material Safety Data Sheet regarding safety, usage, applications, hazards, procedures and disposal of this product. Consult your supervisor for additional information.

FOR INDUSTRY USE ONLY.
CAS Nos.:584-84-9; 91-08-7.
Proper Shipping Name: Poison B Liquid NOS (Contains Toluene Diisocyanate) - UN 2810
Made in USA.
Polymers
1086

MATERIAL SAFETY DATA SHEET

04/28/89

For Coatings, Resins and Related Materials

SECTION I - PRODUCT IDENTIFICATION

Manufacturer: PECORA CORPORATION
165 WAMBOLD ROAD
HARLEYSVILLE PA 19438

Information Phone: 2157236051
Emergency Phone: 8004249300

Product Class: INTERMEDIATE FORMULA
Trade Name : DII ACTIVATOR-RV
Product Code : DYNATROL II ACT.-RV
C.A.S. Number: MIXTURE

Hazard Ratings: none -) extreme
0 ---) 4

Health - 3
Fire - 1
Reactivity - 2
Personal Protection - H

SECTION II - HAZARDOUS INGREDIENTS

Ingredients	CAS #	Weight %	Exposure Limits	Vapor Pr. mm Hg
TOLUENE DIISOCYANATE	26471-62-5	5.	.005ppm	.01

SECTION III - PHYSICAL DATA

Boiling Range: 482F
Evap. Rate: Slower than n-Butyl Acetate
Volatiles volume: 0.0 %
Appearance: VISCOUS LIGHT YELLOW LIQUID.

Vapor Density: Heavier than Air.
Liquid Density: Heavier than Water.
Wgt per gallon: 8.632 Pounds.

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

Flammability Class: 3 Flash Point: 350F LEL : 0.9

-EXTINGUISHING MEDIA:

WATER SPRAY, CO2, DRY CHEMICALL

-SPECIAL FIREFIGHTING PROCEEDURES:

WEAR SELF-CONTAINED BREATHING APPARATUS WHEN FIGHTING FIRES INVOLVING CHEMICALS.

-UNUSUAL FIRE & EXPLOSION HAZARDS:

AVOID WATER CONTAMINATION IN CLOSED CONTAINERS OR CONFINED AREAS; CO2 IS GENERATED.

SECTION V - HEALTH HAZARD DATA

-PERMISSIBLE EXPOSURE LEVEL:

SEE SECTION II.

-EFFECTS OF OVEREXPOSURE:

INHALATION OF VAPORS CAUSES SEVERE IRRITATION TO LUNGS AND PULMONARY EDEMA CAN OCCUR AFTER A SERIOUS VAPOR EXPOSURE. LIQUID CONTACT CAN CAUSE SKIN AND EYE BURNS. PULMONARY SENSITIZATION CAN OCCUR IN SOME INDIVIDUALS, LEADING TO ASTHMA-TYPE SPASMS OF THE BRONCHIAL TUBES AND DIFFICULTY IN BREATHING. PRECLUDE FROM EXPOSURE THOSE INDIVIDUALS HAVING A HISTORY OF RESPIRATORY ILLNESS, ASTHMATIC CONDITIONS, EYE DAMAGE AND TDI SENSITIZATION . TDI IS LISTED BY NTP AS A POSSIBLE HUMAN CARCINOGEN . THE NTP ACTION WAS BASED ON THE RESULTS OF A TWO YEAR ORAL FEEDING STUDY ON RODENTS . TDI IS NOT A CARCINOGEN IN A TWO YEAR RAT INHALATION STUDY .

SECTION V - HEALTH HAZARD DATA (cont.)

-FIRST AID:

EYES: FLUSH WITH WATER FOR 15 MINUTES.
SKIN: WASH WITH SOAP AND WATER.
INHALATION: MOVE TO FRESH AIR, AID BREATHING.
OBTAIN MEDICAL ATTENTION IMMEDIATELY.
INGESTION: GIVE LARGE AMOUNTS OF WATER TO DILUTE MATERIAL AND CONSULT A PHYSICIAN IMMEDIATELY.

SECTION VI - REACTIVITY DATA

STABLITY: [ ] Unstable [x] Stable
HAZARDOUS POLYMERIZATION: [ ] May occur [x] Will not occur

-INCOMPATABILITY:

STABLE; HAZARDOUS POLYMERIZATION MAY OCCUR.

-CONDITIONS TO AVOID:

TEMPERATURES ABOVE 40C FOR EXTENDED PERIODS OF TIME.
CONTAMINATION WITH MOISTURE OR OTHER PRODUCTS THAT REACT WITH ISOCYANATES.

-HAZARDOUS DECOMPOSITION PRODUCTS:

TDI VAPORS, OXIDES OF NITROGEN, CO AND HCN.

SECTION VII - SPILL OR LEAK PROCEEDURES

-STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED

SCRAPE UP AND PLACE IN CONTAINERS. ALLOW TO HARDEN IN OPEN CONTAINERS. CO_2 WILL BE EVOLVED. FINISH CLEANING AREA WITH A SOLVENT SUCH AS CELLOSOLVE ACETATE.

-WASTE DISPOSAL METHOD:

DISPOSE OF IN ACCORDANCE WITH LOCAL, STATE AND FEDERAL REGULATIONS.

SECTION VIII - SPECIAL PROTECTION INFORMATION:

-RESPIRATORY PROTECTION:

NIOSH VAPOR RESPIRATOR FOR CONFINED AREAS.

-VENTILATION:

LOCAL OR MECHANICAL.

-PROTECTIVE GLOVES:

IMPERMEABLE GLOVES.

-EYE PROTECTION:

GLASSES OR GOGGLES.

-OTHER PROTECTIVE EQUIPMENT:

BARRIER CREAM FOR SKIN.

SECTION IX - SPECIAL PRECAUTIONS

-PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING:

STORE IN COOL, DRY PLACE. WASH HANDS AFTER USING AND BEFORE EATING OR SMOKING.

-OTHER PRECAUTIONS:

THIS PRODUCT CONTAINS DIISOCYANATES. AVOID PROLONGED BREATHING OF VAPORS AND CONTACT WITH EYES AND SKIN. FOR COMMERCIAL USE ONLY. KEEP OUT OF THE REACH OF CHILDREN.

MATERIAL SAFETY DATA SHEET

04/28/89

For Coatings, Resins and Related Materials

SECTION I - PRODUCT IDENTIFICATION

Manufacturer: PECORA CORPORATION
165 WAMBOLD ROAD
HARLEYSVILLE PA 19438

Information Phone: 2157236051
Emergency Phone: 8004249300

Product Class: FINAL FORMULA
Trade Name : ONE PART POLYURETHANE
Product Code : DYNATROL I
C.A.S. Number: MIXTURE

Hazard Ratings: Health - 2
none -> extreme Fire - 1
0 ---> 4 Reactivity - 1

SECTION II - HAZARDOUS INGREDIENTS

Ingredients	CAS #	Weight %	Exposure Limits		Vapor Pr. mm Hg
Phthalate Ester	16883-83-3	10.			.2
Hydrogenated aromatic	61788-32-7	15.			.1
CADMIUM SULFIDE	1306-23-6	< 1.	.2	mg/M3	
PVC PIGMENT	9002-86-2	30.	15.	mg/M3	.1
TALC	14807-96-6	< 5.	20.	mp/F	
CALCIUM CARBONATE	471-34-1	5.			
SULFONYL ISOCYANATE	4083-64-1	< 5.	.02	ppm	
TOLUENE DIISOCYANATE	26471-62-5	< 5.	.02	ppm	.01
MAGNESIUM SILICATE	14807-96-6	< 5.	2.	mg/M3	
XYLENE	1330-20-7	10.	100.	ppm	
XYLENE	1330-20-7	5.	100.	ppm	9.

SECTION III - PHYSICAL DATA

Boiling Range: UNKNOWN
Evap. Rate: Slower than n-Butyl Acetate
Volatiles volume: 4.0 %
Appearance: PASTE CONSISTENCY;SLIGHT ODER

Vapor Density: Heavier than Air.
Liquid Density: Same as Water.
Wgt per gallon: 10.24 Pounds.

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

Flammability Class: 3 Flash Point: >200 LEL : UNKNOWN

-EXTINGUISHING MEDIA:

CO2, DRY CHEMICAL, FOAM AND WATER.

-SPECIAL FIREFIGHTING PROCEEDURES:

AVOID BREATHING COMBUSTION PRODUCTS, WEAR SELF-CONTAINED BREATHING APPARATUS.

-UNUSUAL FIRE & EXPLOSION HAZARDS:

POLYVINYL CHLORIDE WILL GIVE OFF HCL AS A DECOMPOSITION PRODUCT WHEN EXPOSED TO AN OUTSIDE SOURCE OR TEMPERATURE ABOVE 400F.

SECTION V - HEALTH HAZARD DATA

-PERMISSIBLE EXPOSURE LEVEL:

SEE SECTION II.

-EFFECTS OF OVEREXPOSURE:

NO ILL EFFECTS REPORTED IN THE NORMAL USE OF THIS COMPOUND. PULMONARY SENSITIZATION CAN OCCUR IN SOME INDIVIDUALS, LEADING TO ASTHMA-TYPE SPASMS OF THE BRONCHIAL TUBES AND DIFFICULTY IN BREATHING. PRECLUDE FROM EXPOSURE THOSE INDIVIDUALS HAVING A HISTORY OF RESPIRATORY ILLNESS AND TDI SENSITIZATION.TDI IS LISTED BY NTP AS A POSSIBLE HUMAN CARCINOGEN. THE NTP ACTION WAS BASED ON THE RESULTS OF A TWO YEAR ORAL FEEDING ON RODENTS . TDI IS NOT A CARCINOGEN IN A TWO YEAR RAT INHALATION STUDY .

-FIRST AID:

EYES: FLUSH WITH WATER FOR 15 MINUTES.
SKIN: WASH WITH SOAP AND WATER.
INHALATION: REMOVE VICTIM TO FRESH AIR. CONSULT A PHYSICIAN IMMEDIATELY.
INGESTION: OBTAIN IMMEDIATE MEDICAL ATTENTION.

SECTION VI - REACTIVITY DATA

STABILITY: [ ] Unstable [x] Stable
HAZARDOUS POLYMERIZATION: [ ] May occur [x] Will not occur

-INCOMPATABILITY:

STABLE; HAZARDOUS POLYMERIZATION WILL NOT OCCUR.

-CONDITIONS TO AVOID:

HIGH TEMPERATURES, DIRECT CONTACT WITH MOISTURE, HEAT AND WATER.

-HAZARDOUS DECOMPOSITION PRODUCTS:

SMOKE, FUMES, CO, HCL.

SECTION VII - SPILL OR LEAK PROCEEDURES

-STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED

SCRAPE UP AND PLACE IN CONTAINERS FOR DISPOSAL. CLEAN AREA WITH SOLVENT SUCH AS MINERAL SPIRITS. FOLLOW MANUFACTURER'S INSTRUCTIONS REGARDING USE OF SOLVENT.

-WASTE DISPOSAL METHOD:

DISPOSE OF IN ACCORDANCE WITH LOCAL, STATE AND FEDERAL REGULATIONS.

SECTION VIII - SPECIAL PROTECTION INFORMATION:

-RESPIRATORY PROTECTION:

VAPOR RESPIRATOR IN CONFINED AREAS.

-VENTILATION:

MECHANICAL.

-PROTECTIVE GLOVES:

IMPERMEABLE GLOVES.

-EYE PROTECTION:

GLASSES OR GOGGLES.

SECTION VIII - SPECIAL PROTECTION INFORMATION: (cont.)

-OTHER PROTECTIVE EQUIPMENT:

BARRIER CREAM FOR SKIN.

SECTION IX - SPECIAL PRECAUTIONS

-PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING:

WASH HANDS AFTER USE AND BEFORE EATING OR SMOKING. STORE IN UNOPENED CONTAINERS AT/OR BELOW 80F (27C) TO PROLONG SHELF LIFE.

-OTHER PRECAUTIONS:

SEE SECTIONS V & VI. CONTAINS DIISOCYANATES. AVOID PROLONGED BREATHING OF VAPORS AND CONTACT WITH SKIN AND EYES.
KEEP OUT OF REACH OF CHILDREN.

MATERIAL SAFETY DATA SHEET

04/28/89

For Coatings, Resins and Related Materials

SECTION I - PRODUCT INDENTIFICATION

Manufacturer: PECORA CORPORATION
165 WAMBOLD ROAD
HARLEYSVILLE PA 19438

Information Phone: 2157236051
Emergency Phone: 8004249300

Product Class: INTERMEDIATE FORMULA
Trade Name : ACT.NR200,DYNAWELD,DYNAFRED
Product Code : DYNAWELD ACTIVATOR
C.A.S. Number: MIXTURE

Hazard Ratings: none -> extreme
0 ---> 4

Health - 2
Fire - 1
Reactivity - 2
Personal Protection - H

SECTION II - HAZARDOUS INGREDIENTS

Ingredients	CAS #	Weight %	Exposure Limits	Vapor Pr. mm Hg
TOLUENE DIISOCYANATE	26471-62-5	< 5.	.02 ppm	.01

SECTION III - PHYSICAL DATA

Boiling Range: 482 - 482 Deg. F
Evap. Rate: Slower than n-Butyl Acetate
Volatiles volume: 0.0 %

Vapor Density: Heavier than Air.
Liquid Density: Heavier than Water.
Wgt per gallon: 8.632 Pounds.

Appearance: VISCOUS,CLEAR, LIGHT YELLOW LIQUID.

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

Flammability Class: 3 Flash Point: 350F LEL : 0.9

-EXTINGUISHING MEDIA:

DRY CHEMICAL, CO2 OR WATER SPRAY FOR LARGE AREAS.

-SPECIAL FIREFIGHTING PROCEEDURES:

WEAR SELF-CONTAINED BREATHING APPARATUS WHEN FIGHTING FIRES INVOLVING CHEMICALS.

-UNUSUAL FIRE & EXPLOSION HAZARDS:

AVOID WATER CONTAMINATION IN CLOSED CONTAINERS OR CONFINED AREAS; CARBON DIOXIDE GAS IS GENERATED.

SECTION V - HEALTH HAZARD DATA

-PERMISSIBLE EXPOSURE LEVEL:

SEE SECTION II.

-EFFECTS OF OVEREXPOSURE:

INHALATION OF THE VAPORS CAUSES SEVERE IRRITATION TO LUNGS AND PULMONARY EDEMA CAN OCCUR AFTER A SERIOUS VAPOR EXPOSURE. LIQUID CONTACT CAUSES SERIOUS SKIN AND EYE BURNS. PULMONARY SENSITIZATION CAN OCCUR IN SOME INDIVIDUALS, LEADING TO ASTHMA-TYPE SPASMS OF THE BRONCHIAL TUBES AND DIFFICULTY IN BREATHING. PRECLUDE FROM EXPOSURE THOSE INDIVIDUALS HAVING A HISTORY OF RESPIRATORY ILLNESS, ASTHMATIC CONDITIONS, EYE DAMAGE AND TDI SENSITIZATION. TDI IS LISTED BY NTP AS A POSSIBLE HUMAN CARCINOGEN . THE NTP ACTION WAS BASED ON THE RESULTS OF A TWO YEAR ORAL FEEDING STUDY ON RODENTS . TDI IS NOT A CARCINOGEN IN A TWO YEAR RAT INHALATION STUDY .

SECTION V - HEALTH HAZARD DATA (cont.)

-FIRST AID:

EYES: FLUSH WITH COPIOUS AMOUNTS OF WATER FOR 15 MINUTES. CONSULT A PHYSICIAN.

SKIN: WASH WITH MILD SOAP AND WATER. SEE A PHYSICIAN.

INHALATION: REMOVE TO FRESH AIR. AID BREATHING IF NECESSARY. CONSULT A PHYSICIAN IMMEDIATELY.

INGESTION: GIVE LARGE AMOUNTS OF WATER TO DILUTE MATERIAL AND CONSULT A PHYSICIAN IMMEDIATELY.

SECTION VI - REACTIVITY DATA

STABILITY: [ ] Unstable [x] Stable

HAZARDOUS POLYMERIZATION: [ ] May occur [x] Will not occur

-INCOMPATABILITY:

STABLE; HAZARDOUS POLYMERIZATION MAY OCCUR.

-CONDITIONS TO AVOID:

TEMPERATURES ABOVE 40C FOR EXTENDED PERIODS OF TIME. CONTAMINATION WITH MOISTURE OR OTHER PRODUCTS THAT REACT WITH ISOCYANATES.

-HAZARDOUS DECOMPOSITION PRODUCTS:

TDI VAPORS, OXIDES OF NITROGEN, CARBON MONOXIDE AND HCN.

SECTION VII - SPILL OR LEAK PROCEEDURES

-STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED

SCRAPE UP AND PLACE IN CONTAINERS. ALLOW TO HARDEN IN OPEN CONTAINERS. CO2 WILL BE EVOLVED. FINISH CLEANING AREA WITH A SOLVENT SUCH AS CELLOSOLVE ACETATE.

-WASTE DISPOSAL METHOD:

DISPOSE OF IN ACCORDANCE WITH LOCAL, STATE AND FEDERAL REGULATIONS.

SECTION VIII - SPECIAL PROTECTION INFORMATION:

-RESPIRATORY PROTECTION:

NIOSH VAPOR RESPIRATOR FOR CONFINED AREAS.

-VENTILATION:

LOCAL OR MECHANICAL.

-PROTECTIVE GLOVES:

IMPERMEABLE GLOVES.

-EYE PROTECTION:

SAFETY GLASSES OR GOGGLES.

-OTHER PROTECTIVE EQUIPMENT:

NONE.

SECTION IX - SPECIAL PRECAUTIONS

-PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING:

STORE IN COOL, DRY PLACE. WASH HANDS AFTER USING AND BEFORE EATING OR SMOKING. SEE SECTIONS V & VI.

-OTHER PRECAUTIONS:

THIS PRODUCT CONTAINS DIISOCYANATES. AVOID PROLONGED BREATHING OF VAPORS AND CONTACT WITH EYES AND SKIN. FOR COMMERCIAL USE ONLY. KEEP OUT OF REACH OF CHILDREN!

MATERIAL SAFETY DATA SHEET

04/28/89

For Coatings, Resins and Related Materials

SECTION I - PRODUCT INDENTIFICATION

Manufacturer: PECORA CORPORATION
165 WAMBOLD ROAD
HARLEYSVILLE PA 19438

Information Phone: 2157236051
Emergency Phone: 8004249300

Product Class: FINAL FORMULA
Trade Name : UREXPAN NR300 ACTIVATOR
Product Code : NR-300 ACTIVATOR
C.A.S. Number: MIXTURE

Hazard Ratings: none -> extreme
0 ---> 4

Health - 2*
Fire - 1
Reactivity - 1

SECTION II - HAZARDOUS INGREDIENTS

Ingredients	CAS #	Weight %	Exposure Limits	Vapor Pr. mm Hg
COAL TAR	8007-45-2	25.	.2 mg/M3	
Hydrogenated aromatic	61788-32-7	10.		.1
Petrolium Hydrocarbon Oil	64742-04-7	15.		
LIME	1317-65-3	< 5.	5. mg/M3	
AROMATIC ISOCYANATE	101-68-8	< 5.	.02 ppm	
TOLUENE DIISOCYANATE	26471-62-5	5.	.02 ppm	.01

SECTION III - PHYSICAL DATA

Boiling Range: 175F-980F
Evap. Rate: Slower than n-Butyl Acetate
Volatiles volume: <1 %
Appearance: BLACK LIQUID; PUNGENT ODOR.

Vapor Density: Heavier than Air.
Liquid Density: Heavier than Water.
Wgt per gallon: 8.881 Pounds.

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

Flammability Class: 3 Flash Point: 205F LEL : 0.9

-EXTINGUISHING MEDIA:

FOAM, CO2, DRY CHEMICAL.

-SPECIAL FIREFIGHTING PROCEEDURES:

FIREMEN SHOULD WEAR SELF-CONTAINED BREATHING APPARATUS TO PROTECT AGAINST INHALATION OF COMBUSTION PRODUCTS.

-UNUSUAL FIRE & EXPLOSION HAZARDS:

NONE KNOWN TO PECORA.

SECTION V - HEALTH HAZARD DATA

-PERMISSIBLE EXPOSURE LEVEL:

SEE SECTION II.

-EFFECTS OF OVEREXPOSURE:

INHALATION OF THE VAPORS CAUSES SEVERE IRRITATION TO LUNGS AND PULMINARY EDEMA CAN OCCUR AFTER A SERIOUS VAPOR EXPOSURE . LIQUID CONTACT CAN CAUSE EYE AND SKIN BURNS . PULMINARY SENSITIZATION CAN OCCUR IN SOME INDIVIDUALS , LEADING TO ASTHMA TYPE SPASMS OF THE BRONCHIAL TUBES AND DIFFICULTY IN BREATHING . PRCLUDE FROM EXPOSURE THOSE INDIVIDUALS HAVING A HISTORY OF REPIRATORY ILLNESS , ASTHMATIC CONDITIONS , EYE DAMAGE , AND TDI SENSITIZATION . TDI IS LISTED BY NTP AS A POSSIBLE HUMAN CARCINOGEN . THE NTP ACTION IS BASED ON THE RESULTS OF A TWO YEAR ORAL FEEDING STUDY ON RODENTS . TDI IS NOT A CARCINOGEN IN

(cont.)

SECTION V - HEALTH HAZARD DATA (cont.)

-EFFECTS OF OVEREXPOSURE: (cont.)

TWO YEAR RAT INHALATION STUDY .

-FIRST AID:

EYES: FLUSH WITH WATER FOR 15 MINUTES.
SKIN: WASH WITH SOAP AND WATER.
INHALATION: REMOVE VICTIM TO FRESH AIR. CONSULT A PHYSICIAN IMMEDIATELY.
INGESTION: OBTAIN IMMEDIATE MEDICAL ATTENTION.

SECTION VI - REACTIVITY DATA

STABILITY: [ ] Unstable [x] Stable
HAZARDOUS POLYMERIZATION: [ ] May occur [x] Will not occur

-INCOMPATABILITY:

STABLE; HAZARDOUS POLYMERIZATION WILL NOT OCCUR.

-CONDITIONS TO AVOID:

HIGH TEMPERATURES, MOISTURE, WATER.

-HAZARDOUS DECOMPOSITION PRODUCTS:

PYROLISIS PRODUCTS OF AROMATIC HYDROCARBONS, SMOKE, FUMES AND CARBON MONOXIDE.

SECTION VII - SPILL OR LEAK PROCEEDURES

-STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED

ABSORB WITH DIATOMACEOUS EARTH OR OTHER INERT ABSORBENT.
REMOVE TO A SANITARY LANDFILL.

-WASTE DISPOSAL METHOD:

DISPOSE OF IN ACCORDANCE WITH LOCAL, STATE AND FEDERAL REGULATIONS.

SECTION VIII - SPECIAL PROTECTION INFORMATION:

-RESPIRATORY PROTECTION:

ORGANIC VAPOR CANISTER TYPE (US BUREAU OF MINES).

-VENTILATION:

MECHANICAL EXHAUST FOR CONFINED AREAS.

-PROTECTIVE GLOVES:

NEOPRENE OR RUBBER GLOVES.

-EYE PROTECTION:

PROTECTIVE GOGGLES.

-OTHER PROTECTIVE EQUIPMENT:

PROTECTIVE BARRIER CREAM.

SECTION IX - SPECIAL PRECAUTIONS

-PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING:

AVOID INHALATION AND SKIN CONTACT. WASH HANDS THOROUGHLY BEFORE EATING OR SMOKING. STORE IN TIGHTLY CLOSED CONTAINERS IN WELL-VENTILATED AREAS.

-OTHER PRECAUTIONS:

CONTAINS COAL TAR AND DIISOCYANATES. AVOID PROLONGED BREATHING OF VAPORS AND CONTACT WITH SKIN AND EYES.

KEEP OUT OF THE REACH OF CHILDREN!

MATERIAL SAFETY DATA SHEET

04/28/89

For Coatings, Resins and Related Materials

SECTION I - PRODUCT INDENTIFICATION

Manufacturer: PECORA CORPORATION
165 WAMBOLD ROAD
HARLEYSVILLE PA 19438

Information Phone: 2157236051
Emergency Phone: 8004249300

Product Class: FINAL FORMULA
Trade Name : ONE-PART S/L URETHANE SEALER
Product Code : NR-201 SEALANT
C.A.S. Number: MIXTURE

Hazard Ratings: none -> extreme
0 ----> 4

Health - 2
Fire - 1
Reactivity - 1

SECTION II - HAZARDOUS INGREDIENTS

Ingredients	CAS #	Weight %	Exposure Limits		Vapor Pr. mm Hg
Hydrogenated aromatic	61788-32-7	30.			.1
PVC PIGMENT	9002-86-2	30.	15.	mg/M3	.1
TITANIUM DIOXIDE	13463-67-7	< 5.	10.	mg/M3	
MINERAL SPIRITS	8032-32-4	< 5.	500.	ppm	
URETHANE PREPOLYMER	9057-91-4	10.	100.	ppm	
TOLUENE DIISOCYANATE	26471-62-5	< 5.	.02	ppm	.01

SECTION III - PHYSICAL DATA

Boiling Range: UNKNOWN
Evap. Rate: Slower than n-Butyl Acetate
Volatiles volume: 4. %
Appearance: VISCOUS LIQUID; MILD ODOR.

Vapor Density: Heavier than Air.
Liquid Density: Heavier than Water.
Wgt per gallon: 8.549 Pounds.

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

Flammability Class: 3 Flash Point: >230F LEL : UNKNOWN

-EXTINGUISHING MEDIA:

CARBON DIOXIDE, DRY CHEMICAL, FOAM AND WATER.

-SPECIAL FIREFIGHTING PROCEEDURES:

AVOID BREATHING COMBUSTION PRODUCTS. WEAR SELF-CONTAINED BREATHING APPARATUS.

-UNUSUAL FIRE & EXPLOSION HAZARDS:

POLYVINYL CHLORIDE WILL GIVE OFF HYDROCHLORIC ACID AS A DECOMPOSITION PRODUCT WHEN EXPOSED TO AN OUTSIDE FIRE SOURCE OR TEMPERATURE ABOVE 400F.

SECTION V - HEALTH HAZARD DATA

-PERMISSIBLE EXPOSURE LEVEL:

SEE SECTION II.

-EFFECTS OF OVEREXPOSURE:

INHALATION OF THE VAPORS CAUSES SEVERE IRRITATION TO LUNGS AND PULMINARY EDEMA CAN OCCUR AFTER A SERIOUS VAPOR EXPOSURE . LIQUID CONTACT CAN CAUSE SKIN AND EYE BURNS . PULMINARY SENSITIZATION CAN OCCUR IN SOME INDIVIDUALS , LEADING TO ASTHMA TYPE SPASMS OF THE BRONCHIAL TUBES AND DIFFICULTY IN BREATHING . PECLUDE FROM EXPOSURE THOSE INDIVIDUALS HAVING A HISTORY OF RESPIRATORY ILLNESS , ASTHMATIC CONDITIONS , EYE DAMAGE , AND TDI SENSITIZATION . TDI IS LISTED BY NTP AS A POSSIBLE HUMAN

(cont.)

SECTION V - HEALTH HAZARD DATA (cont.)

-EFFECTS OF OVEREXPOSURE: (cont.)

CARCINOGEN . THE NTP ACTION WAS BASED ON THE RESULTS OF A TWO YEAR ORAL FEEDING STUDY ON RODENTS . TDI IS NOT A CARCINOGEN IN A TWO YEAR RAT INHALATION STUDY .

-FIRST AID:

EYES: FLUSH WITH WATER FOR 15 MINUTES.
SKIN: WASH WITH SOAP AND WATER.
INHALATION: REMOVE VICTIM TO FRESH AIR. CONSULT A PHYSICIAN IMMEDIATELY.
INGESTION: OBTAIN IMMEDIATE MEDICAL ATTENTION.

SECTION VI - REACTIVITY DATA

STABILITY: [ ] Unstable [x] Stable
HAZARDOUS POLYMERIZATION: [ ] May occur [x] Will not occur

-INCOMPATABILITY:

STABLE; HAZARDOUS POLYMERIZATION WILL NOT OCCUR.

-CONDITIONS TO AVOID:

HIGH TEMPERATURES, DIRECT CONTACT WITH MOISTURE; HEAT AND WATER.

-HAZARDOUS DECOMPOSITION PRODUCTS:

SMOKE, FUMES, CARBON MONOXIDE AND HYDROCHLORIC ACID.

SECTION VII - SPILL OR LEAK PROCEEDURES

-STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED

SCRAPE UP AND PLACE IN CONTAINERS FOR DISPOSAL. CLEAN AREA WITH SOLVENT SUCH AS MINERAL SPIRITS. FOLLOW MANUFACTURER'S INSTRUCTIONS REGARDING USE OF SOLVENT.

-WASTE DISPOSAL METHOD:

DISPOSE OF IN ACCORDANCE WITH LOCAL, STATE AND FEDERAL REGULATIONS.

SECTION VIII - SPECIAL PROTECTION INFORMATION:

-RESPIRATORY PROTECTION:

VAPOR RESPIRATOR IN CONFINED AREAS.

-VENTILATION:

MECHANICAL.

-PROTECTIVE GLOVES:

IMPERMEABLE GLOVES.

-EYE PROTECTION:

GLASSES OR GOGGLES.

-OTHER PROTECTIVE EQUIPMENT:

BARRIER CREAM FOR SKIN.

SECTION IX - SPECIAL PRECAUTIONS

-PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING:

WASH HANDS AFTER USE AND BEFORE EATING OR SMOKING. STORE IN UNOPENED CONTAINERS AT OR BELOW 80F (27C) TO PROLONG SHELF LIFE. SEE SECTIONS V & VI.

-OTHER PRECAUTIONS:

CONTAINS DIISOCYANATES. AVOID PROLONGED BREATHING OF VAPORS AND CONTACT WITH SKIN AND EYES. KEEP OUT OF THE REACH OF CHILDREN!

MATERIAL SAFETY DATA SHEET

04/28/89

For Coatings, Resins and Related Materials

SECTION I - PRODUCT IDENTIFICATION

Manufacturer: PECORA CORPORATION
165 WAMBOLD ROAD
HARLEYSVILLE PA 19438

Information Phone: 215/236051
Emergency Phone: 8004249300

Product Class: INTERMEDIATE FORMULA
Trade Name : DYNAFLEX ACTIVATOR
Product Code : DYNAFLEX ACTIVATOR
C.A.S. Number: MIXTURE

Hazard Ratings: none -> extreme
0 ---> 4

Health - 2
Fire - 1
Reactivity - 2
Personal Protection - H

SECTION II - HAZARDOUS INGREDIENTS

Ingredients	CAS #	Weight %	Exposure Limits	Vapor Pr. mm Hg
TOLUENE DIISOCYANATE	26471-62-5	15.	.005ppm	.01
Polyether Triol	25791-96-2	85.		

SECTION III - PHYSICAL DATA

Boiling Range: 484 - 484 Deg. F
Evap. Rate: Slower than n-Butyl Acetate
Volatiles volume: 0.0 %
Vapor Density: Heavier than Air.
Liquid Density: Same as Water.
Wgt per gallon: 8.632 Pounds.
Appearance: VISCOUS,CLEAR, LIGHT YELLOW LIQUID.

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

Flammability Class: 3 Flash Point: 350F LEL : 0.9

-EXTINGUISHING MEDIA:

DRY CHEMICAL, CO2 OR WATER SPRAY FOR LARGE AREAS.

-SPECIAL FIREFIGHTING PROCEEDURES:

WEAR SELF-CONTAINED BREATHING APPARATUS WHEN FIGHTING FIRES INVOLVING CHEMICALS.

-UNUSUAL FIRE & EXPLOSION HAZARDS:

AVOID WATER CONTAMINATION IN CLOSED CONTAINERS OR CONFINED AREAS; CARBON DIOXIDE GAS IS GENERATED.

SECTION V - HEALTH HAZARD DATA

-PERMISSIBLE EXPOSURE LEVEL:

SEE SECTION II.

-EFFECTS OF OVEREXPOSURE:

INHALATION OF THE VAPORS CAUSES SEVERE IRRITATION TO LUNGS AND PULMONARY EDEMA CAN OCCUR AFTER A SERIOUS VAPOR EXPOSURE. LIQUID CONTACT CAUSES SERIOUS SKIN AND EYE BURNS. PULMONARY SENSITIZATION CAN OCCUR IN SOME INDIVIDUALS, LEADING TO ASTHMA-TYPE SPASMS OF THE BRONCHIAL TUBES AND DIFFICULTY IN BREATHING. PRECLUDE FROM EXPOSURE THOSE INDIVIDUALS HAVING A HISTORY OF RESPIRATORY ILLNESS, ASTHMATIC CONDITIONS, EYE DAMAGE AND TDI SENSITIZATION. TDI IS LISTED BY NTP AS A POSSIBLE HUMAN CARCINOGEN . THE NTP ACTION WAS BASED ON THE RESULTS OF A TWO YEAR ORAL FEEDING STUDY ON RODENTS . TDI IS NOT A CARCINOGEN IN A TWO YEAR RAT INHALATION STUDY .

SECTION V - HEALTH HAZARD DATA (cont.)

-FIRST AID:

EYES: FLUSH WITH COPIOUS AMOUNTS OF WATER FOR 15 MINUTES. CONSULT A PHYSICIAN.

SKIN: WASH WITH MILD SOAP AND WATER. SEE A PHYSICIAN.

INHALATION: REMOVE TO FRESH AIR. AID BREATHING IF NECESSARY. CONSULT A PHYSICIAN IMMEDIATELY.

INGESTION: GIVE LARGE AMOUNTS OF WATER TO DILUTE MATERIAL AND CONSULT A PHYSICIAN IMMEDIATELY.

SECTION VI - REACTIVITY DATA

STABILITY: [ ] Unstable [x] Stable

HAZARDOUS POLYMERIZATION: [ ] May occur [x] Will not occur

-INCOMPATABILITY:

STABLE; HAZARDOUS POLYMERIZATION MAY OCCUR.

-CONDITIONS TO AVOID:

TEMPERATURES ABOVE 40C FOR EXTENDED PERIODS OF TIME. CONTAMINATION WITH MOISTURE OR OTHER PRODUCTS THAT REACT WITH ISOCYANATES.

-HAZARDOUS DECOMPOSITION PRODUCTS:

TDI VAPORS, OXIDES OF NITROGEN, CARBON MONOXIDE AND HCN.

SECTION VII - SPILL OR LEAK PROCEEDURES

-STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED

SCRAPE UP AND PLACE IN CONTAINERS. ALLOW TO HARDEN IN OPEN CONTAINERS. CO2 WILL BE EVOLVED. FINISH CLEANING AREA WITH A SOLVENT SUCH AS CELLOSOLVE ACETATE.

-WASTE DISPOSAL METHOD:

DISPOSE OF IN ACCORDANCE WITH LOCAL, STATE AND FEDERAL REGULATIONS.

SECTION VIII - SPECIAL PROTECTION INFORMATION:

-RESPIRATORY PROTECTION:

NIOSH VAPOR RESPIRATOR FOR CONFINED AREAS.

-VENTILATION:

LOCAL OR MECHANICAL.

-PROTECTIVE GLOVES:

IMPERMEABLE GLOVES.

-EYE PROTECTION:

SAFETY GLASSES OR GOGGLES.

-OTHER PROTECTIVE EQUIPMENT:

NONE.

SECTION IX - SPECIAL PRECAUTIONS

-PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING:

STORE IN COOL, DRY PLACE. WASH HANDS AFTER USING AND BEFORE EATING OR SMOKING. SEE SECTIONS V & VI.

-OTHER PRECAUTIONS:

THIS PRODUCT CONTAINS DIISOCYANATES. AVOID PROLONGED BREATHING OF VAPORS AND CONTACT WITH EYES AND SKIN. FOR COMMERCIAL USE ONLY. KEEP OUT OF REACH OF CHILDREN!

MATERIAL SAFETY DATA SHEET

04/28/89

For Coatings, Resins and Related Materials

SECTION I - PRODUCT IDENTIFICATION

Manufacturer: PECORA CORPORATION
165 WAMBOLD ROAD
HARLEYSVILLE PA 19438

Information Phone: 215/236051
Emergency Phone: 8004249300

Product Class: FINAL FORMULA
Trade Name : DURAMEM H-500 MEMBRANE
Product Code : DURAMEM H-500
C.A.S. Number: MIXTURE

Hazard Ratings: none -> extreme
0 ---> 4

Health - 2*
Fire - 2
Reactivity - 1

SECTION II - HAZARDOUS INGREDIENTS

Ingredients	CAS #	Weight %	Exposure Limits		Vapor Pr. mm Hg
COAL TAR	8007-45-2	55.	.2	mg/M3	
AROMATIC OIL	0	< 5.	100.	ppm	
LIME	1317-65-3	< 5.	5.	mg/M3	
PETRO. HYDROCARBON	64742-11-6	< 5.	.2	mg/M3	
CARBON BLACK	1333-86-4	< 5.	3.5	mg/M3	
XYLENE	1330-20-7	10.	100.	ppm	9.
AROMATIC ISOCYANATE	101-68-8	< 5.	.02	ppm	
TOLUENE DIISOCYANATE	26471-62-5	< 5.	.02	ppm	.01

SECTION III - PHYSICAL DATA

Boiling Range: 175F - 980F
Evap. Rate: Slower than n-Butyl Acetate
Volatiles volume: 4 %

Vapor Density: Heavier than Air.
Liquid Density: Heavier than Water.
Wgt per gallon: 9.296 Pounds.

Appearance: VISCOUS BLACK PASTE; PUNGENT ODOR.

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

Flammability Class: 2 Flash Point: 115F LEL : 0.9

-EXTINGUISHING MEDIA:

FOAM, CO2, DRY CHEMICAL.

-SPECIAL FIREFIGHTING PROCEEDURES:

WEAR SELF-CONTAINED BREATHING APPARATUS TO AVOID INHALATION OF DANGEROUS COMBUSTION PRODUCTS.

-UNUSUAL FIRE & EXPLOSION HAZARDS:

NONE KNOWN TO PECORA.

SECTION V - HEALTH HAZARD DATA

-PERMISSIBLE EXPOSURE LEVEL:

SEE SECTION II.

-EFFECTS OF OVEREXPOSURE:

INHALATION OF THE VAPORS CAUSES SEVERE IRRITATION TO LUNGS AND PULMINARY EDEMA CAN OCCUR AFTER A SERIOUS VAPOR EXPOSURE.LIQUID CONTACT CAN CAUSE SKIN AND EYE BURNS . PULMONARY SENSITIZATION CAN OCCUR IN SOME INDIVIDUALS , LEADING TO ASTHMA TYPE SPASMS OF THE BRONCHIAL TUBES AND DIFFICULTY IN BREATHING . PRECLUDE FROM EXPOSURE INDIVIDUALS HAVING A HISTORY OF RESPER-ATORY ILLNESS , ASTHMATIC CONDITIONS , EYE DAMAGE , AND TDI SENSITIZATION . TDI IS LISTED BY NTP AS A POSSIBLE HUMAN

(cont.)

SECTION V - HEALTH HAZARD DATA (cont.)

-EFFECTS OF OVEREXPOSURE: (cont.)

CARCINOGEN . THE NTP ACTION IS BASED ON THE RESULTS OF A TWO YEAR ORAL FEEDING STUDY ON RODENTS . TDI IS NOT A CARCINOGEN IN A TWO YEAR RAT INHALATION STUDY .

-FIRST AID:

EYES: FLUSH WITH WATER FOR 15 MINUTES.
SKIN: WASH WITH SOAP AND WATER.
INHALATION: REMOVE VICTIM TO FRESH AIR. CONSULT A PHYSICIAN IMMEDIATELY.
INGESTION: OBTAIN IMMEDIATE MEDICAL ATTENTION.

SECTION VI - REACTIVITY DATA

STABILITY: [ ] Unstable [x] Stable
HAZARDOUS POLYMERIZATION: [ ] May occur [x] Will not occur

-INCOMPATABILITY:

STABLE; HAZARDOUS POLYMERIZATION WILL NOT OCCUR.

-CONDITIONS TO AVOID:

HIGH TEMPERATURES, MOISTURE, WATER.

-HAZARDOUS DECOMPOSITION PRODUCTS:

PYROLISIS PRODUCTS OF AROMATIC HYDROCARBONS, SMOKE, FUMES, AND CARBON MONOXIDE.

SECTION VII - SPILL OR LEAK PROCEEDURES

-STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED

ABSORB WITH DIATOMACEOUS EARTH AND OTHER INERT ABSORBENT. REMOVE TO A SANITARY LANDFILL.

-WASTE DISPOSAL METHOD:

DISPOSE OF IN ACCORDANCE WITH LOCAL, STATE AND FEDERAL REGULATIONS.

SECTION VIII - SPECIAL PROTECTION INFORMATION:

-RESPIRATORY PROTECTION:

ORGANIC VAPOR CANISTER TYPE (U.S. BUREAU OF MINES).

-VENTILATION:

MECHANICAL EXHAUST FOR CONFINED AREAS.

-PROTECTIVE GLOVES:

NEOPRENE OR RUBBER GLOVES.

-EYE PROTECTION:

PROTECTIVE GOGGLES.

-OTHER PROTECTIVE EQUIPMENT:

PROTECTIVE CLOTHING WHEN SPRAYING.

SECTION IX - SPECIAL PRECAUTIONS

-PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING:

AVOID INHALATION AND SKIN CONTACT. WASH HANDS THOROUGHLY BEFORE EATING OR SMOKING. STORE IN TIGHTLY CLOSED CONTAINERS IN WELL VENTILATED AREAS. WEAR PROTECTIVE CLOTHING WHEN SPRAYING, INCLUDING ORGANIC VAPOR RESPIRATOR. SEE SECTION V.

-OTHER PRECAUTIONS:

CONTAINS COAL TAR AND DIISOCYANATES. DO NOT BREATHE VAPOR OR SPRAY MIST. AVOID CONTACT WITH SKIN AND EYES. KEEP OUT OF THE REACH OF CHILDREN! STORAGE STABILITY: 6 MONTHS IN UNOPENED CONTAINERS AT TEMPERATURES BELOW 80F (27C). HIGHER TEMPERATURES WILL REDUCE STABILITY.

MATERIAL SAFETY DATA SHEET

04/28/89

For Coatings, Resins and Related Materials

SECTION I - PRODUCT IDENTIFICATION

Manufacturer: PECORA CORPORATION
165 WAMBOLD ROAD
HARLEYSVILLE PA 19438

Information Phone: 215/264-6051
Emergency Phone: 8004249300

Product Class: FINAL FORMULA
Trade Name : DURAMEM V-500 MEMBRANE
Product Code : DURAMEM V-500
C.A.S. Number: MIXTURE

Hazard Ratings: none -> extreme
0 ----> 4

Health - 2*
Fire - 2
Reactivity - 1

SECTION II - HAZARDOUS INGREDIENTS

Ingredients	CAS #	Weight %	Exposure Limits		Vapor Pr. mm Hg
COAL TAR	8007-45-2	60.	.2	mg/M3	
AROMATIC OIL	0	< 5.	100.	ppm	
LIME	1317-65-3	< 5.	5.	mg/M3	
PETRO. HYDROCARBON	64742-11-6	< 5.	.2	mg/M3	
CARBON BLACK	1333-86-4	< 5.	3.5	mg/M3	
XYLENE	1330-20-7	< 5.	100.	ppm	9.
AROMATIC ISOCYANATE	101-68-8	< 5.	.02	ppm	
TOLUENE DIISOCYANATE	26471-62-5	< 5.	.02	ppm	.01

SECTION III - PHYSICAL DATA

Boiling Range: 175F - 980F
Evap. Rate: Slower than n-Butyl Acetate
Volatiles volume: 4 %
Appearance: VISCOUS BLACK PASTE; PUNGENT ODOR.

Vapor Density: Heavier than Air.
Liquid Density: Heavier than Water.
Wgt per gallon: 9.296 Pounds.

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

Flammability Class: 2 Flash Point: 115F LEL : 0.9

-EXTINGUISHING MEDIA:

FOAM, CO2, DRY CHEMICAL.

-SPECIAL FIREFIGHTING PROCEEDURES:

WEAR SELF-CONTAINED BREATHING APPARATUS TO AVOID INHALATION OF DANGEROUS COMBUSTION PRODUCTS.

-UNUSUAL FIRE & EXPLOSION HAZARDS:

NONE KNOWN TO PECORA.

SECTION V - HEALTH HAZARD DATA

-PERMISSIBLE EXPOSURE LEVEL:

SEE SECTION II.

-EFFECTS OF OVEREXPOSURE:

INHALATION OF THE VAPORS CAUSES SEVERE IRRITATION TO LUNGS AND PULMINARY EDEMA CAN OCCUR AFTER A SERIOUS VAPOR EXPOSURE.LIQUID CONTACT CAN CAUSE SKIN AND EYE BURNS . PULMONARY SENSITIZATION CAN OCCUR IN SOME INDIVIDUALS , LEADING TO ASTHMA TYPE SPASMS OF THE BRONCHIAL TUBES AND DIFFICULTY IN BREATHING . PRECLUDE FROM EXPOSURE INDIVIDUALS HAVING A HISTORY OF RESPIR-ATORY ILLNESS , ASTHMATIC CONDITIONS , EYE DAMAGE , AND TDI SENSITIZATION . TDI IS LISTED BY NTP AS A POSSIBLE HUMAN

(cont.)

SECTION V - HEALTH HAZARD DATA (cont.)

-EFFECTS OF OVEREXPOSURE: (cont.)

CARCINOGEN . THE NTP ACTION IS BASED ON THE RESULTS OF A TWO YEAR ORAL FEEDING STUDY ON RODENTS . TDI IS NOT A CARCINOGEN IN A TWO YEAR RAT INHALATION STUDY .

-FIRST AID:

EYES: FLUSH WITH WATER FOR 15 MINUTES.
SKIN: WASH WITH SOAP AND WATER.
INHALATION: REMOVE VICTIM TO FRESH AIR. CONSULT A PHYSICIAN IMMEDIATELY.
INGESTION: OBTAIN IMMEDIATE MEDICAL ATTENTION.

SECTION VI - REACTIVITY DATA

STABILITY: [ ] Unstable [x] Stable
HAZARDOUS POLYMERIZATION: [ ] May occur [x] Will not occur

-INCOMPATABILITY:

STABLE; HAZARDOUS POLYMERIZATION WILL NOT OCCUR.

-CONDITIONS TO AVOID:

HIGH TEMPERATURES, MOISTURE, WATER.

-HAZARDOUS DECOMPOSITION PRODUCTS:

PYROLISIS PRODUCTS OF AROMATIC HYDROCARBONS, SMOKE, FUMES, AND CARBON MONOXIDE.

SECTION VII - SPILL OR LEAK PROCEEDURES

-STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED

ABSORB WITH DIATOMACEOUS EARTH AND OTHER INERT ABSORBENT.
REMOVE TO A SANITARY LANDFILL.

-WASTE DISPOSAL METHOD:

DISPOSE OF IN ACCORDANCE WITH LOCAL, STATE AND FEDERAL REGULATIONS.

SECTION VIII - SPECIAL PROTECTION INFORMATION:

-RESPIRATORY PROTECTION:

ORGANIC VAPOR CANISTER TYPE (U.S. BUREAU OF MINES).

-VENTILATION:

MECHANICAL EXHAUST FOR CONFINED AREAS.

-PROTECTIVE GLOVES:

NEOPRENE OR RUBBER GLOVES.

-EYE PROTECTION:

PROTECTIVE GOGGLES.

-OTHER PROTECTIVE EQUIPMENT:

PROTECTIVE CLOTHING WHEN SPRAYING.

SECTION IX - SPECIAL PRECAUTIONS

-PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING:

AVOID INHALATION AND SKIN CONTACT. WASH HANDS THOROUGHLY BEFORE EATING OR SMOKING. STORE IN TIGHTLY CLOSED CONTAINERS IN WELL VENTILATED AREAS. WEAR PROTECTIVE CLOTHING WHEN SPRAYING, INCLUDING ORGANIC VAPOR RESPIRATOR. SEE SECTION V.

-OTHER PRECAUTIONS:

CONTAINS COAL TAR AND DIISOCYANATES. DO NOT BREATHE VAPOR OR SPRAY MIST. AVOID CONTACT WITH SKIN AND EYES. KEEP OUT OF THE REACH OF CHILDREN! STORAGE STABILITY: 6 MONTHS IN UNOPENED CONTAINERS AT TEMPERATURES BELOW 80F (27C). HIGHER TEMPERATURES WILL REDUCE STABILITY.

MATERIAL SAFETY DATA SHEET

04/28/89

For Coatings, Resins and Related Materials

SECTION I - PRODUCT IDENTIFICATION

Manufacturer: PECORA CORPORATION
165 WAMBOLD ROAD
HARLEYSVILLE PA 19438

Information Phone: 215/2366051
Emergency Phone: 8004249300

Product Class: FINAL FORMULA
Trade Name : DURAMEM R-500 ROLLER GRADE
Product Code : DURAMEM R-500
C.A.S. Number: MIXTURE

Hazard Ratings: none -> extreme
0 ----> 4

Health - 2*
Fire - 2
Reactivity - 1

SECTION II - HAZARDOUS INGREDIENTS

Ingredients	CAS #	Weight %	Exposure Limits		Vapor Pr. mm Hg
COAL TAR	8007-45-2	35.	.2	mg/M3	
AROMATIC OIL	0	< 5.	100.	ppm	
LIME	1317-65-3	< 5.	5.	mg/M3	
PETRO. HYDROCARBON	64742-11-6	< 5.	.2	mg/M3	
CARBON BLACK	1333-86-4	< 5.	3.5	mg/M3	
XYLENE	1330-20-7	< 5.	100.	ppm	9.
MINERAL SPIRITS	8032-32-4	10.	500.	ppm	
SILICON DIOXIDE	7631-86-9	< 5.	5.	mg/M3	
AROMATIC ISOCYANATE	101-68-8	< 5.	.02	ppm	
TOLUENE DIISOCYANATE	26471-62-5	< 5.	.02	ppm	.01

SECTION III - PHYSICAL DATA

Boiling Range: 175F - 980F
Evap. Rate: Slower than n-Butyl Acetate
Volatiles volume: 4 %
Vapor Density: Heavier than Air.
Liquid Density: Heavier than Water.
Wgt per gallon: 9.296 Pounds.
Appearance: VISCOUS BLACK PASTE; PUNGENT ODOR.

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

Flammability Class: 2 Flash Point: 115F LEL : 0.9

-EXTINGUISHING MEDIA:

FOAM, CO2, DRY CHEMICAL.

-SPECIAL FIREFIGHTING PROCEEDURES:

WEAR SELF-CONTAINED BREATHING APPARATUS TO AVOID INHALATION OF DANGEROUS COMBUSTION PRODUCTS.

-UNUSUAL FIRE & EXPLOSION HAZARDS:

NONE KNOWN TO PECORA.

SECTION V - HEALTH HAZARD DATA

-PERMISSIBLE EXPOSURE LEVEL:

SEE SECTION II.

-EFFECTS OF OVEREXPOSURE:

INHALATION OF THE VAPORS CAUSES SEVERE IRRITATION TO LUNGS AND PULMINARY EDEMA CAN OCCUR AFTER A SERIOUS VAPOR EXPOSURE.LIQUID CONTACT CAN CAUSE SKIN AND EYE BURNS . PULMONARY SENSITIZATION CAN OCCUR IN SOME INDIVIDUALS , LEADING TO ASTHMA TYPE SPASMS OF THE BRONCHIAL TUBES AND DIFFICULTY IN BREATHING . PRECLUDE FROM EXPOSURE INDIVIDUALS HAVING A HISTORY OF RESPER-

(cont.)

SECTION V - HEALTH HAZARD DATA (cont.)

-EFFECTS OF OVEREXPOSURE: (cont.)

ATORY ILLNESS , ASTHMATIC CONDITIONS , EYE DAMAGE , AND TDI SENSITIZATION . TDI IS LISTED BY NTP AS A POSSIBLE HUMAN CARCINOGEN . THE NTP ACTION IS BASED ON THE RESULTS OF A TWO YEAR ORAL FEEDING STUDY ON RODENTS . TDI IS NOT A CARCINOGEN IN A TWO YEAR RAT INHALATION STUDY .

-FIRST AID:

EYES: FLUSH WITH WATER FOR 15 MINUTES.
SKIN: WASH WITH SOAP AND WATER.
INHALATION: REMOVE VICTIM TO FRESH AIR. CONSULT A PHYSICIAN IMMEDIATELY.
INGESTION: OBTAIN IMMEDIATE MEDICAL ATTENTION.

SECTION VI - REACTIVITY DATA

STABILITY: [ ] Unstable [x] Stable
HAZARDOUS POLYMERIZATION: [ ] May occur [x] Will not occur

-INCOMPATABILITY:

STABLE; HAZARDOUS POLYMERIZATION WILL NOT OCCUR.

-CONDITIONS TO AVOID:

HIGH TEMPERATURES, MOISTURE, WATER.

-HAZARDOUS DECOMPOSITION PRODUCTS:

PYROLISIS PRODUCTS OF AROMATIC HYDROCARBONS, SMOKE, FUMES, AND CARBON MONOXIDE.

SECTION VII - SPILL OR LEAK PROCEEDURES

-STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED

ABSORB WITH DIATOMACEOUS EARTH AND OTHER INERT ABSORBENT.
REMOVE TO A SANITARY LANDFILL.

-WASTE DISPOSAL METHOD:

DISPOSE OF IN ACCORDANCE WITH LOCAL, STATE AND FEDERAL REGULATIONS.

SECTION VIII - SPECIAL PROTECTION INFORMATION:

-RESPIRATORY PROTECTION:

ORGANIC VAPOR CANISTER TYPE (U.S. BUREAU OF MINES).

-VENTILATION:

MECHANICAL EXHAUST FOR CONFINED AREAS.

-PROTECTIVE GLOVES:

NEOPRENE OR RUBBER GLOVES.

-EYE PROTECTION:

PROTECTIVE GOGGLES.

-OTHER PROTECTIVE EQUIPMENT:

PROTECTIVE CLOTHING WHEN SPRAYING.

SECTION IX - SPECIAL PRECAUTIONS

-PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING:

AVOID INHALATION AND SKIN CONTACT. WASH HANDS THOROUGHLY BEFORE EATING OR SMOKING. STORE IN TIGHTLY CLOSED CONTAINERS IN WELL VENTILATED AREAS. WEAR PROTECTIVE CLOTHING WHEN SPRAYING, INCLUDING ORGANIC VAPOR RESPIRATOR. SEE SECTION V.

-OTHER PRECAUTIONS:

CONTAINS COAL TAR AND DIISOCYANATES. DO NOT BREATHE VAPOR OR SPRAY MIST. AVOID CONTACT WITH SKIN AND EYES. KEEP OUT OF THE REACH OF CHILDREN! STORAGE STABILITY: 6 MONTHS IN UNOPENED CONTAINERS AT TEMPERATURES BELOW 80F (27C). HIGHER TEMPERATURES WILL REDUCE STABILITY.

MATERIAL SAFETY DATA SHEET

04/28/89

For Coatings, Resins and Related Materials

SECTION I - PRODUCT IDENTIFICATION

Manufacturer: PECORA CORPORATION
165 WAMBOLD ROAD
HARLEYSVILLE PA 19438

Information Phone: 215/236051
Emergency Phone: 8004243300

Product Class: FINAL FORMULA
Trade Name : NON-COAL TAR MEMBRANE,ONE PART
Product Code : DURAMEM 600 CTF
C.A.S. Number: MIXTURE

Hazard Ratings: none -> extreme
0 ----> 4

Health - 2
Fire - 2
Reactivity - 1

SECTION II - HAZARDOUS INGREDIENTS

Ingredients	CAS #	Weight %	Exposure Limits		Vapor Pr. mm Hg
AROMATIC HYDROCARBON	64742-16-1	35.			
HYDROCARBON	0	5.			
LIME	1317-65-3	< 5.	5.	mg/M3	
CARBON BLACK	1333-86-4	< 5.	3.5	mg/M3	
TALC	14807-96-6	20.	20.	mp/F	
SILICON DIOXIDE	7631-86-9	< 5.	5.	mg/M3	
XYLENE	1330-20-7	5.	100.	ppm	9.
SULFONYL ISOCYANATE	4083-64-1	< 5.	.02	ppm	
TOLUENE DIISOCYANATE	26471-62-5	< 5.	.02	ppm	.01
TOLUENE DIISOCYANATE	26471-62-5	< 5.	.02	ppm	.01

SECTION III - PHYSICAL DATA

Boiling Range: UNKNOWN
Evap. Rate: n-Butyl Acetate
Volatiles volume: 5. %
Appearance: VISCOUS BLACK LIQUID,SLIGHT ODOR.

Vapor Density: Heavier than Air.
Liquid Density: Heavier than Water.
Wgt per gallon: 9./11 Pounds.

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

Flammability Class: 2 Flash Point: 11/F LEL : 1.2

-EXTINGUISHING MEDIA:

FOAM, CO2, DRY CHEMICAL.

-SPECIAL FIREFIGHTING PROCEEDURES:

WEAR SELF-CONTAINED BREATHING APPARATUS TO AVOID INHALATION OF DANGEROUS COMBUSTION PRODUCTS.

-UNUSUAL FIRE & EXPLOSION HAZARDS:

NONE KNOWN TO PECORA CORPORATION.

SECTION V - HEALTH HAZARD DATA

-PERMISSIBLE EXPOSURE LEVEL:

SEE SECTION II.

-EFFECTS OF OVEREXPOSURE:

INHALATION OF THE VAPORS CAUSES SEVERE IRRITATION TO LUNGS AND PULMONARY EDEMA CAN OCCUR AFTER A SERIOUS VAPOR EXPOSURE . LIQUID CONTACT CAN CAUSE SKIN AND EYE BURNS . PULMONARY SENSITIZATION CAN OCCUR IN SOME INDIVIDUALS , LEADING TO ASTHMA TYPE SPASMS OF THE BRONCHIAL TUBES AND DIFFICULTY IN BREATHING . PRECLUDE FROM EXPOSURE THOSE INDIVIDUALS HAVING A HISTORY OF

(cont.)

SECTION V - HEALTH HAZARD DATA (cont.)

-EFFECTS OF OVEREXPOSURE: (cont.)

RESPIRATORY ILLNESS, ASTHMATIC CONDITIONS, EYE DAMAGE, AND TDI SENSITIZATION. TDI IS LISTED BY NTP AS A POSSIBLE HUMAN CARCINOGEN. THE NTP ACTION WAS BASED ON THE RESULTS OF A TWO YEAR ORAL FEEDING STUDY ON RODENTS. TDI IS NOT A CARCINOGEN IN A TWO YEAR RAT INHALATION STUDY.

-FIRST AID:

EYES: FLUSH IMMEDIATELY WITH WATER FOR 15 MINUTES.
SKIN: WASH WITH SOAP AND WATER.
INHALATION: REMOVE VICTIM TO FRESH AIR, AID BREATHING IF NECESSARY. CONSULT A PHYSICIAN.
INGESTION: CONSULT A PHYSICIAN IMMEDIATELY.

SECTION VI - REACTIVITY DATA

STABILITY: [ ] Unstable [x] Stable
HAZARDOUS POLYMERIZATION: [ ] May occur [x] Will not occur

-INCOMPATABILITY:

STABLE; HAZARDOUS POLYMERIZATION WILL NOT OCCUR.

-CONDITIONS TO AVOID:

HEAT, SPARKS, OPEN FLAME, MOISTURE. ENTRAPPING MOISTURE IN CONTAINERS GENERATES PRESSURE.

-HAZARDOUS DECOMPOSITION PRODUCTS:

CARBON MONOXIDE, CARBON DIOXIDE AND TOXIC FUMES.

SECTION VII - SPILL OR LEAK PROCEDURES

-STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED

ABSORB WITH DIATOMACEOUS EARTH OR OTHER INERT ABSORBENT MATERIAL. REMOVE TO A SANITARY LANDFILL.

-WASTE DISPOSAL METHOD:

DISPOSE OF IN ACCORDANCE WITH LOCAL, STATE AND FEDERAL REGULATIONS.

SECTION VIII - SPECIAL PROTECTION INFORMATION:

-RESPIRATORY PROTECTION:

ORGANIC VAPOR RESPIRATOR.

-VENTILATION:

MECHANICAL EXHAUST IN CONFINED AREAS.

-PROTECTIVE GLOVES:

NEOPRENE OR RUBBER GLOVES.

-EYE PROTECTION:

PROTECTIVE GOGGLES.

-OTHER PROTECTIVE EQUIPMENT:

PROTECTIVE CLOTHING WHEN SPRAYING.

SECTION IX - SPECIAL PRECAUTIONS

-PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING:

AVOID INHALATION AND SKIN CONTACT. WASH HANDS THOROUGHLY BEFORE EATING OR SMOKING. STORE IN TIGHTLY CLOSED CONTAINERS IN WELL-VENTILATED AREA. WEAR PROTECTIVE CLOTHING WHEN SPRAYING, INCLUDING ORGANIC VAPOR RESPIRATOR. SEE SECTION V.

-OTHER PRECAUTIONS:

DO NOT BREATHE VAPOR OR SPRAY MIST.
AVOID CONTACT WITH SKIN AND EYES. KEEP OUT OF THE REACH OF CHILDREN! STORAGE STABILITY: 6 MONTHS IN UNOPENED CONTAINERS AT TEMPERATURES BELOW 80F (27C). HIGHER TEMPERATURES WILL REDUCE STABILITY.

4.03 Submit a copy or reasonable facsimile of any hazard information (other than an MSDS) that is provided to your customers/users regarding the listed substance or any formulation containing the listed substance. Indicate whether this information has been submitted by circling the appropriate response.

Yes 1

No 2

4.04 For each activity that uses the listed substance, circle all the applicable number(s) corresponding to each physical state of the listed substance during the activity listed. Physical states for importing and processing activities are determined at the time you import or begin to process the listed substance. Physical states for manufacturing, storage, disposal and transport activities are determined using the final state of the product.

CBI

[ ]

	Physical State				
Activity	Solid	Slurry	Liquid	Liquified Gas	Gas
Manufacture	1	2	3	4	5
Import	1	2	3	4	5
Process	1	2	3	4	5
Store	1	2	3	4	5
Dispose	1	2	3	4	5
Transport	1	2	3	4	5

[ ] Mark (X) this box if you attach a continuation sheet.

4.05 Particle Size -- If the listed substance exists in particulate form during any of the following activities, indicate for each applicable physical state the size and the percentage distribution of the listed substance by activity. Do not include particles ≥10 microns in diameter. Measure the physical state and particle sizes for importing and processing activities at the time you import or begin to process the listed substance. Measure the physical state and particle sizes for manufacturing storage, disposal and transport activities using the final state of the product.

CBI

[ ]

Physical State		Manufacture	Import	Process	Store	Dispose	Transport
Dust	<1 micron	NA	NA	NA	NA	NA	NA
	1 to <5 microns	NA	NA	NA	NA	NA	NA
	5 to <10 microns	NA	NA	NA	NA	NA	NA
Powder	<1 micron	NA	NA	NA	NA	NA	NA
	1 to <5 microns	NA	NA	NA	NA	NA	NA
	5 to <10 microns	NA	NA	NA	NA	NA	NA
Fiber	<1 micron	NA	NA	NA	NA	NA	NA
	1 to <5 microns	NA	NA	NA	NA	NA	NA
	5 to <10 microns	NA	NA	NA	NA	NA	NA
Aerosol	<1 micron	NA	NA	NA	NA	NA	NA
	1 to <5 microns	NA	NA	NA	NA	NA	NA
	5 to <10 microns	NA	NA	NA	NA	NA	NA

[ ] Mark (X) this box if you attach a continuation sheet.

SECTION 5 ENVIRONMENTAL FATE

PART A RATE CONSTANTS AND TRANSFORMATION PRODUCTS

5.01 Indicate the rate constants for the following transformation processes.

a. Photolysis:

Absorption spectrum coefficient (peak) .... UK (1/M cm) at _____ nm

Reaction quantum yield, ϕ ..... UK at _____ nm

Direct photolysis rate constant, k_p, at ... UK 1/hr _____ latitude

b. Oxidation constants at 25°C:

For $^1O_2$ (singlet oxygen), k_{ox} ..... UK 1/M hr

For RO_2 (peroxy radical), k_{ox} ..... UK 1/M hr

c. Five-day biochemical oxygen demand, BOD_5 ... UK mg/l

d. Biotransformation rate constant:

For bacterial transformation in water, k_b... UK 1/hr

Specify culture ..... UK

e. Hydrolysis rate constants:

For base-promoted process, k_B ..... UK 1/M hr

For acid-promoted process, k_A ..... UK 1/M hr

For neutral process, k_N ..... UK 1/hr

f. Chemical reduction rate (specify conditions) UK

g. Other (such as spontaneous degradation) ... UK

[ ] Mark (X) this box if you attach a continuation sheet.

PART B PARTITION COEFFICIENTS

5.02 a. Specify the half-life of the listed substance in the following media.

Media	Half-life (specify units)
Groundwater	UK
Atmosphere	UK
Surface water	UK
Soil	UK

b. Identify the listed substance's known transformation products that have a half-life greater than 24 hours.

CAS No.	Name	Half-life (specify units)		Media
UK	UK	UK	in	UK
			in	
			in	
			in	

5.03 Specify the octanol-water partition coefficient, K_{ow} ... UK at 25°C

Method of calculation or determination ..... UK

5.04 Specify the soil-water partition coefficient, K_d ..... UK at 25°C

Soil type ..... UK

5.05 Specify the organic carbon-water partition coefficient, K_{oc} ..... UK at 25°C

5.06 Specify the Henry's Law Constant, H ..... UK atm-m^3/mole

[ ] Mark (X) this box if you attach a continuation sheet.

5.07 List the bioconcentration factor (BCF) of the listed substance, the species for which it was determined, and the type of test used in deriving the BCF.

Bioconcentration Factor	Species	Test[1]
UK	UK	UK

[1]Use the following codes to designate the type of test:

F = Flowthrough
S = Static

[ ] Mark (X) this box if you attach a continuation sheet.

6.04 For each market listed below, state the quantity sold and the total sales value of
CBI the listed substance sold or transferred in bulk during the reporting year.

[ ]

Market	Quantity Sold or Transferred (kg/yr)	Total Sales Value ($/yr)
Retail sales		
Distribution -- Wholesalers		
Distribution -- Retailers		
Intra-company transfer		
Repackagers		
Mixture producers		
Article producers		
Other chemical manufacturers or processors		
Exporters		
Other (specify)		

6.05 Substitutes -- List all known commercially feasible substitutes that you know exist for the listed substance and state the cost of each substitute. A commercially feasible substitute is one which is economically and technologically feasible to use
CBI in your current operation, and which results in a final product with comparable performance in its end uses.

[ ]

Substitute	Cost ($/kg)
4,4' DIPHENYLMETHANE DIISOCYANATE	3.10

[ ] Mark (X) this box if you attach a continuation sheet.

SECTION 7 MANUFACTURING AND PROCESSING INFORMATION

General Instructions:

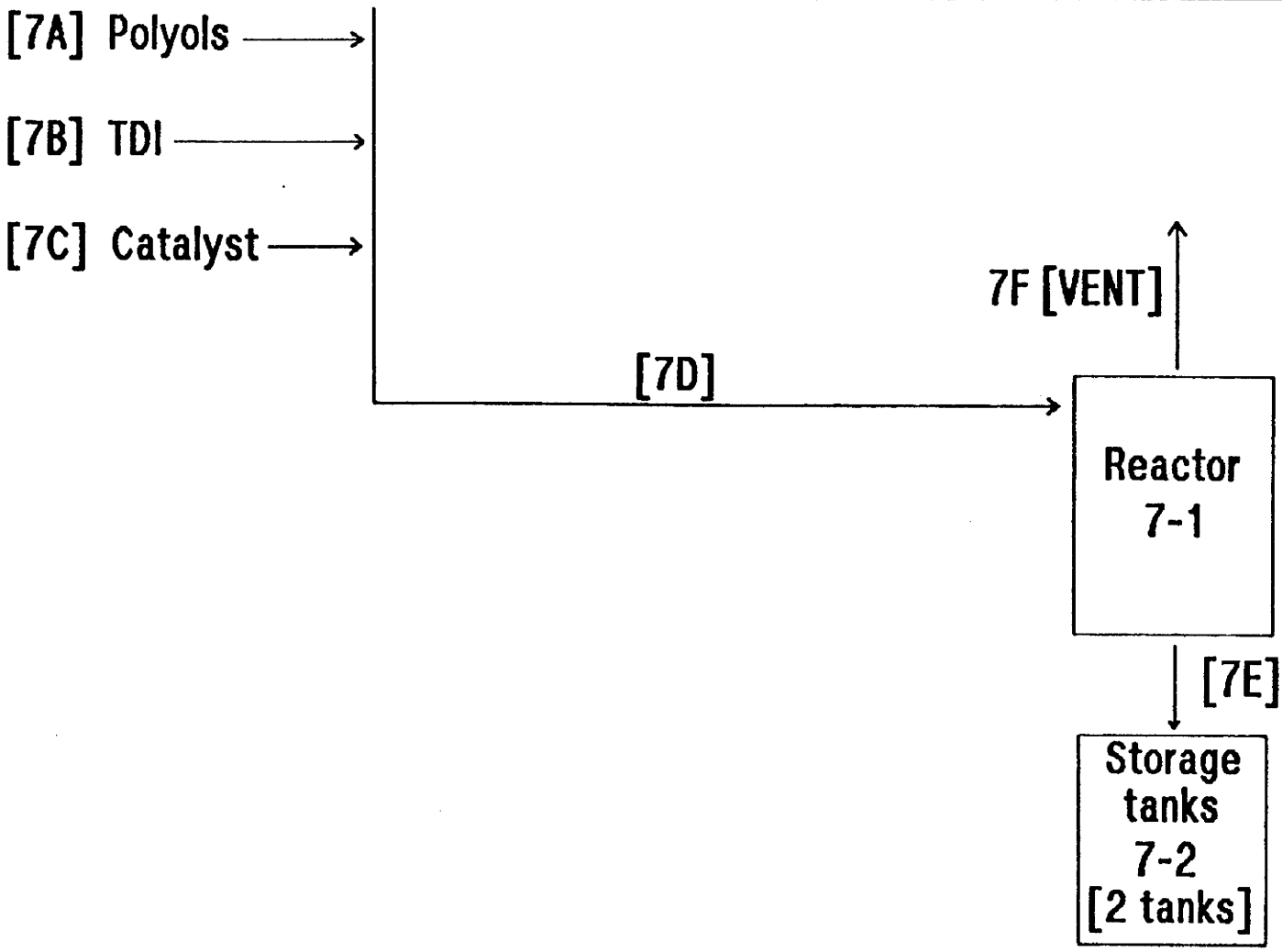
For questions 7.04-7.06, provide a separate response for each process block flow diagram provided in questions 7.01, 7.02, and 7.03. Identify the process type from which the information is extracted.

PART A MANUFACTURING AND PROCESSING PROCESS TYPE DESCRIPTION

7.01 In accordance with the instructions, provide a process block flow diagram showing the major (greatest volume) process type involving the listed substance.

CBI

[ ] Process type ..... POLYURETHANE PREPOLYMER POLYMERIZATION

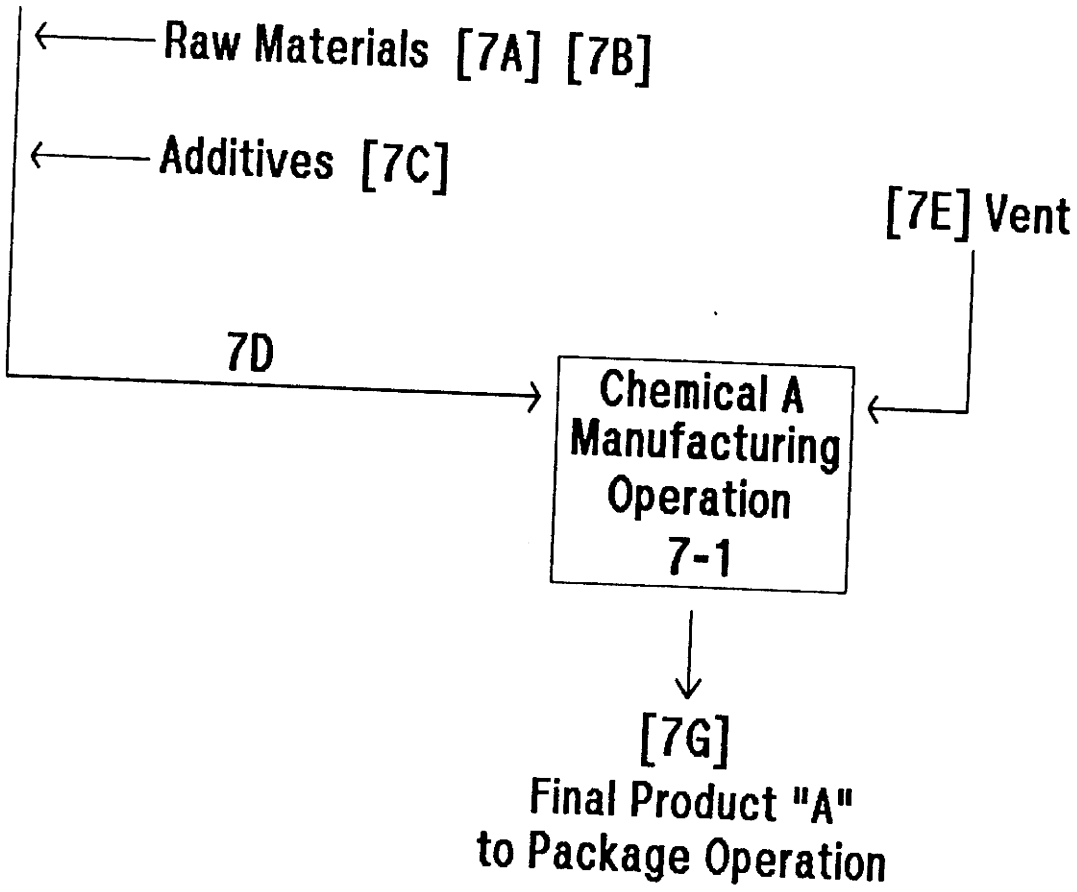


[ ] Mark (X) this box if you attach a continuation sheet.

7.03 In accordance with the instructions, provide a process block flow diagram showing all process emission streams and emission points that contain the listed substance and which, if combined, would total at least 90 percent of all facility emissions if not treated before emission into the environment. If all such emissions are released from one process type, provide a process block flow diagram using the instructions for question 7.01. If all such emissions are released from more than one process type, provide a process block flow diagram showing each process type as a separate block.

CBI

[ ] Process type ..... POLYURETHANE PREPOLYMER POLYMERIZATION



[ ] Mark (X) this box if you attach a continuation sheet.

7.04 Describe the typical equipment types for each unit operation identified in your process block flow diagram(s). If a process block flow diagram is provided for more than one process type, photocopy this question and complete it separately for each process type.

CBI

[ ] Process type ..... POLYURETHANE PREPOLYMER POLYMERIZATION

Unit Operation ID Number	Typical Equipment Type	Operating Temperature Range (°C)	Operating Pressure Range (mm Hg)	Vessel Composition
7-1	REACTOR	AMBIENT	ATMOSPHERIC	S.S.
7-2	STORAGE TANKS	AMBIENT	ATMOSPHERIC	COLD STEEL

[ ] Mark (X) this box if you attach a continuation sheet.

7.05 Describe each process stream identified in your process block flow diagram(s). If a process block flow diagram is provided for more than one process type, photocopy this question and complete it separately for each process type.

CBI

[ ] Process type ..... POLYURETHANE PREPOLYMER POLYMERIZATION

Process Stream ID Code	Process Stream Description	Physical State[1]	Stream Flow (kg/yr)
7F	VENT	GU	UK

[1]Use the following codes to designate the physical state for each process stream:

GC = Gas (condensible at ambient temperature and pressure)
GU = Gas (uncondensible at ambient temperature and pressure)
SO = Solid
SY = Sludge or slurry
AL = Aqueous liquid
OL = Organic liquid
IL = Immiscible liquid (specify phases, e.g., 90% water, 10% toluene)

[ ] Mark (X) this box if you attach a continuation sheet.

7.06 Characterize each process stream identified in your process block flow diagram(s). If a process block flow diagram is provided for more than one process type, photocopy this question and complete it separately for each process type. (Refer to the instructions for further explanation and an example.)

CBI

[ ] Process type ..... POLYURETHANE PREPOLYMER POLYMERIZATION

a. Process Stream ID Code	b. Known Compounds[1]	c. Concentrations[2,3] (% or ppm)	d. Other Expected Compounds	e. Estimated Concentrations (% or ppm)
7F	NITROGEN	>99.0	NA	NA
	TDI	<0.1	NA	NA

7.06 continued below

[ ] Mark (X) this box if you attach a continuation sheet.

7.06 (continued)

[1]For each additive package introduced into a process stream, specify the compounds that are present in each additive package, and the concentration of each component. Assign an additive package number to each additive package and list this number in column b. (Refer to the instructions for further explanation and an example. Refer to the glossary for the definition of additive package.)

Additive Package Number	Components of Additive Package	Concentrations (% or ppm)
1	NA	NA
2		
3		
4		
5		

[2]Use the following codes to designate how the concentration was determined:

A = Analytical result
E = Engineering judgement/calculation

[3]Use the following codes to designate how the concentration was measured:

V = Volume
W = Weight

[ ] Mark (X) this box if you attach a continuation sheet.

PART A RESIDUAL TREATMENT PROCESS DESCRIPTION

8.01 In accordance with the instructions, provide a residual treatment block flow diagram which describes the treatment process used for residuals identified in question 7.01.

CBI

[ ] Process type ..... OURS IS A BATCH PROCESS. THERE ARE NO RESIDUALS AVAILABLE FOR TREATMENT

[ ] Mark (X) this box if you attach a continuation sheet.

PART B RESIDUAL GENERATION AND CHARACTERIZATION

8.05 Characterize each process stream identified in your residual treatment block flow diagram(s). If a residual treatment block flow diagram is provided for more than one process type, photocopy this question and complete it separately for each process type. (Refer to the instructions for further explanation and an example.)

CBI

[ ] Process type ..... POLYURETHANE PREPOLYMER POLYMERIZATION

a. Stream ID Code	b. Type of Hazardous Waste[1]	c. Physical State of Residual[2]	d. Known Compounds[3]	e. Concentrations (% or ppm)[4,5,6]	f. Other Expected Compounds	g. Estimated Concentrations (% or ppm)
NA	NA	NA	NA	NA	NA	NA

8.05 continued below

[ ] Mark (X) this box if you attach a continuation sheet.

8.05 (continued)

[1]Use the following codes to designate the type of hazardous waste:

I = Ignitable
C = Corrosive
R = Reactive
E = EP toxic
T = Toxic
H = Acutely hazardous

[2]Use the following codes to designate the physical state of the residual:

GC = Gas (condensible at ambient temperature and pressure)
GU = Gas (uncondensible at ambient temperature and pressure)
SO = Solid
SY = Sludge or slurry
AL = Aqueous liquid
OL = Organic liquid
IL = Immiscible liquid (specify phases, e.g., 90% water, 10% toluene)

8.05 continued below

[ ] Mark (X) this box if you attach a continuation sheet.

8.05 (continued)

[3]For each additive package introduced into a process stream, specify the compounds that are present in each additive package, and the concentration of each component. Assign an additive package number to each additive package and list this number in column d. (Refer to the instructions for further explanation and an example. Refer to the glossary for the definition of additive package.)

Additive Package Number	Components of Additive Package	Concentrations (% or ppm)
1	NA	NA
2		
3		
4		
5		

[4]Use the following codes to designate how the concentration was determined:

A = Analytical result
E = Engineering judgement/calculation

8.05 continued below

[ ] Mark (X) this box if you attach a continuation sheet.

8.05 (continued)

[5]Use the following codes to designate how the concentration was measured:

V = Volume
W = Weight

[6]Specify the analytical test methods used and their detection limits in the table below. Assign a code to each test method used and list those codes in column e.

Code	Method	Detection Limit (± ug/l)
1	NA	NA
2		
3		
4		
5		
6		

[ ] Mark (X) this box if you attach a continuation sheet.

8.06 Characterize each process stream identified in your residual treatment block flow diagram(s). If a residual treatment block flow diagram is provided for more than one process type, photocopy this question and complete it separately for each process type. (Refer to the instructions for further explanation and an example.)

CBI

[ ] Process type ..... POLYURETHANE PREPOLYMER POLYMERIZATION

a. Stream ID Code	b. Waste Description Code[1]	c. Management Method Code[2]	d. Residual Quantities (kg/yr)	e. Management of Residual (%) On-Site	e. Management of Residual (%) Off-Site	f. Costs for Off-Site Management (per kg)	g. Changes in Management Methods
NA	NA	NA	NA	NA	NA	NA	NA

[1]Use the codes provided in Exhibit 8-1 to designate the waste descriptions

[2]Use the codes provided in Exhibit 8-2 to designate the management methods

[ ] Mark (X) this box if you attach a continuation sheet.

8.22 Describe the combustion chamber design parameters for each of the three largest (by capacity) incinerators that are used on-site to burn the residuals identified in your process block or residual treatment block flow diagram(s).

CBI

[__]

Incinerator	Combustion Chamber Temperature (°C)		Location of Temperature Monitor		Residence Time In Combustion Chamber (seconds)	
	Primary	Secondary	Primary	Secondary	Primary	Secondary
1						
2						
3						

Indicate if Office of Solid Waste survey has been submitted in lieu of response by circling the appropriate response.

Yes 1

No 2

8.23 Complete the following table for the three largest (by capacity) incinerators that are used on-site to burn the residuals identified in your process block or residual treatment block flow diagram(s).

CBI

[__]

Incinerator	Air Pollution Control Device[1]	Types of Emissions Data Available
1	NA	NA
2		
3		

Indicate if Office of Solid Waste survey has been submitted in lieu of response by circling the appropriate response.

Yes 1

No 2

[1]Use the following codes to designate the air pollution control device:

S = Scrubber (include type of scrubber in parenthesis)
E = Electrostatic precipitator
O = Other (specify) _____

[__] Mark (X) this box if you attach a continuation sheet.

PART A EMPLOYMENT AND POTENTIAL EXPOSURE PROFILE

9.01 Mark (X) the appropriate column to indicate whether your company maintains records on the following data elements for hourly and salaried workers. Specify for each data element the year in which you began maintaining records and the number of years the records for that data element are maintained. (Refer to the instructions for further explanation and an example.)

CBI [ ]

Data Element	Data are Maintained for: Hourly Workers	Salaried Workers	Year in Which Data Collection Began	Number of Years Records Are Maintained
Date of hire	X	X	1983	7
Age at hire	X	X	1983	7
Work history of individual before employment at your facility	NA	NA	NA	NA
Sex	X	X	1983	NA
Race	X	X	1983	NA
Job titles	X	X	1983	NA
Start date for each job title	X	X	1983	7
End date for each job title	X	X	1983	7
Work area industrial hygiene monitoring data	X	X	1983	6
Personal employee monitoring data	X	X	1983	6
Employee medical history	X	X	1983	6
Employee smoking history	NA	NA	NA	NA
Accident history	X	X	1983	6
Retirement date	X	X	1983	7
Termination date	X	X	1983	7
Vital status of retirees	NA	NA	NA	NA
Cause of death data	NA	NA	NA	NA

[ ] Mark (X) this box if you attach a continuation sheet.

9.02 In accordance with the instructions, complete the following table for each activity in which you engage.

CBI

[ ]

a. Activity	b. Process Category	c. Yearly Quantity (kg)	d. Total Workers	e. Total Worker-Hours
Manufacture of the listed substance	Enclosed			
	Controlled Release			
	Open			
On-site use as reactant	Enclosed	77000	1	500
	Controlled Release			
	Open			
On-site use as nonreactant	Enclosed			
	Controlled Release			
	Open			
On-site preparation of products	Enclosed			
	Controlled Release			
	Open			

[ ] Mark (X) this box if you attach a continuation sheet.

9.03 Provide a descriptive job title for each labor category at your facility that encompasses workers who may potentially come in contact with or be exposed to the listed substance.

CBI

[ ]

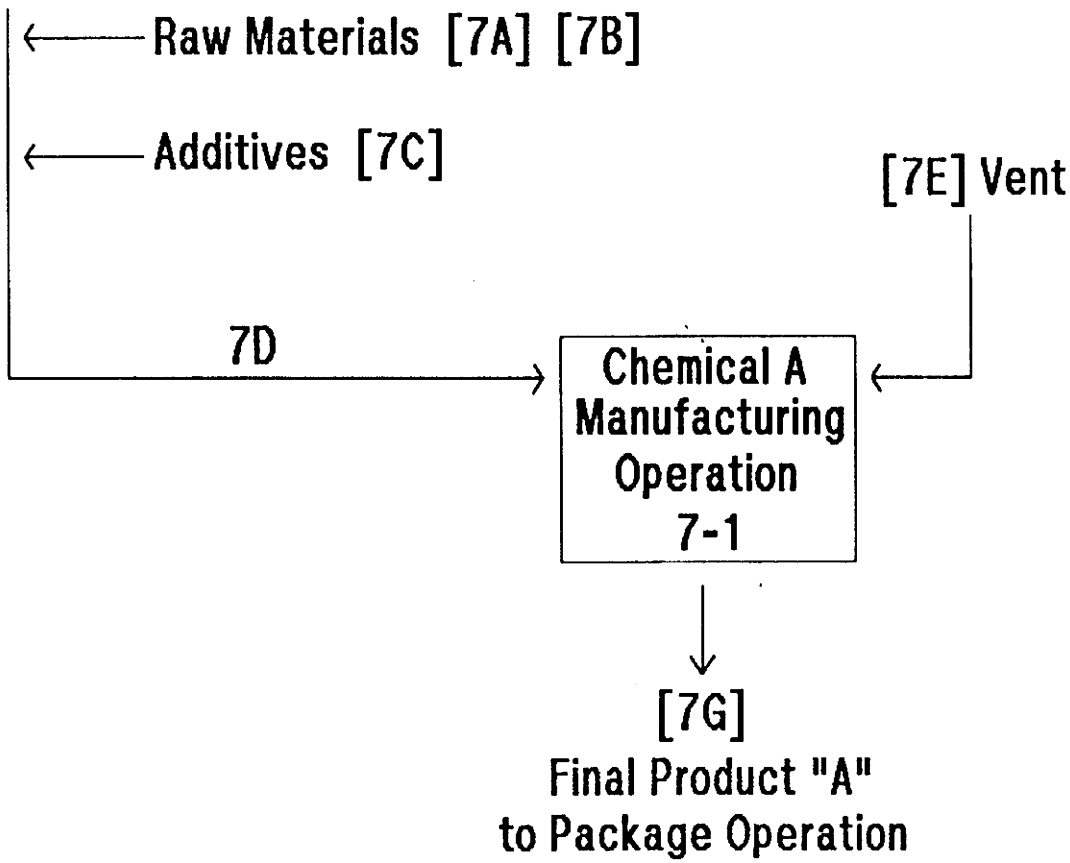
Labor Category	Descriptive Job Title
A	REACTOR OPERATOR
B	RECEIVER
C	PACKAGING
D	
E	
F	
G	
H	
I	
J	

[ ] Mark (X) this box if you attach a continuation sheet.

9.04 In accordance with the instructions, provide your process block flow diagram(s) and indicate associated work areas.

CBI

[ ] Process type ..... URETHANE PREPOLYMER POLYMERIZATION



[ ] Mark (X) this box if you attach a continuation sheet.

9.05 Describe the various work area(s) shown in question 9.04 that encompass workers who may potentially come in contact with or be exposed to the listed substance. Add any additional areas not shown in the process block flow diagram in question 7.01 or 7.02. Photocopy this question and complete it separately for each process type.

CBI

[ ] Process type ..... POLYURETHANE PREPOLYMER POLYMERIZATION

Work Area ID	Description of Work Areas and Worker Activities
1	REACTOR AREA - LOADS REACTOR + MONITORS TEMP. UNLOADS REACTOR INTO TANKS
2	PACKAGE OPERATION
3	RECEIVING
4	
5	
6	
7	
8	
9	
10	

[ ] Mark (X) this box if you attach a continuation sheet.

9.06 Complete the following table for each work area identified in question 9.05, and for each labor category at your facility that encompasses workers who may potentially come in contact with or be exposed to the listed substance. Photocopy this question and complete it separately for each process type and work area.

CBI

[ ] Process type ..... POLYURETHANE PREPOLYMER POLYMERIZATION

Work area 1

Labor Category	Number of Workers Exposed	Mode of Exposure (e.g., direct skin contact)	Physical State of Listed Substance[1]	Average Length of Exposure Per Day[2]	Number of Days per Year Exposed
A	1	SKIN CONTACT	OL/GU	D	100
		INHALATION			
B	1	SKIN CONTACT	OL/GU	B	12
		INHALATION			
C	4	INHALATION	OL	D	140

[1]Use the following codes to designate the physical state of the listed substance at the point of exposure:

GC = Gas (condensible at ambient temperature and pressure)
GU = Gas (uncondensible at ambient temperature and pressure; includes fumes, vapors, etc.)
SO = Solid
SY = Sludge or slurry
AL = Aqueous liquid
OL = Organic liquid
IL = Immiscible liquid (specify phases, e.g., 90% water, 10% toluene)

[2]Use the following codes to designate average length of exposure per day:

A = 15 minutes or less
B = Greater than 15 minutes, but not exceeding 1 hour
C = Greater than one hour, but not exceeding 2 hours
D = Greater than 2 hours, but not exceeding 4 hours
E = Greater than 4 hours, but not exceeding 8 hours
F = Greater than 8 hours

[ ] Mark (X) this box if you attach a continuation sheet.

9.07 For each labor category represented in question 9.06, indicate the 8-hour Time Weighted Average (TWA) exposure levels and the 15-minute peak exposure levels. Photocopy this question and complete it separately for each process type and work area.

CBI

[ ] Process type ..... POLYURETHANE PREPOLYMER POLYMERIZATION

Work area 1

Labor Category	8-hour TWA Exposure Level (ppm, mg/m^3, other-specify)	15-Minute Peak Exposure Level (ppm, mg/m^3, other-specify)
A	UK	0.017 PPM
B	NA	NA
C	UK	0.0017 PPM

[ ] Mark (X) this box if you attach a continuation sheet.

PART B WORK PLACE MONITORING PROGRAM

9.08 If you monitor worker exposure to the listed substance, complete the following table.

CBI

[ ]

Sample/Test	Work Area ID	Testing Frequency (per year)	Number of Samples (per test)	Who Samples[1]	Analyzed In-House (Y/N)	Number of Years Records Maintained
Personal breathing zone	1	1	1	B	N	6
General work area (air)	1	1	NA	B	N	6
Wipe samples	NA	NA	NA	NA	NA	NA
Adhesive patches	NA	NA	NA	NA	NA	NA
Blood samples	NA	NA	NA	NA	NA	NA
Urine samples	NA	NA	NA	NA	NA	NA
Respiratory samples	NA	NA	NA	NA	NA	NA
Allergy tests	NA	NA	NA	NA	NA	NA
Other (specify)						
Other (specify)						
Other (specify)						

[1]Use the following codes to designate who takes the monitoring samples:

A = Plant industrial hygienist
B = Insurance carrier
C = OSHA consultant
D = Other (specify) _____

[ ] Mark (X) this box if you attach a continuation sheet.

9.09 For each sample type identified in question 9.08, describe the type of sampling and analytical methodology used for each type of sample.
CBI

[ ] Sample Type	Sampling and Analytical Methodology
PERSONAL BREATHING ZONE	PIPERAZINE TREATED GLASS FIBER FILTERS WITH LIQUID CHROMATOGRAPHY ANALYSIS

9.10 If you conduct personal and/or ambient air monitoring for the listed substance, specify the following information for each equipment type used.
CBI

[ ] Equipment Type[1]	Detection Limit[2]	Manufacturer	Averaging Time (hr)	Model Number
NA	NA	NA	NA	NA

[1]Use the following codes to designate personal air monitoring equipment types:

A = Passive dosimeter
B = Detector tube
C = Charcoal filtration tube with pump
D = Other (specify) _____

Use the following codes to designate ambient air monitoring equipment types:

E = Stationary monitors located within work area
F = Stationary monitors located within facility
G = Stationary monitors located at plant boundary
H = Mobile monitoring equipment (specify) _____
I = Other (specify) _____

[2]Use the following codes to designate detection limit units:

A = ppm
B = Fibers/cubic centimeter (f/cc)
C = Micrograms/cubic meter (μ/m^3)

[ ] Mark (X) this box if you attach a continuation sheet.

9.11 If you conduct routine medical tests for monitoring the health effects of exposure to the listed substance, specify the type and frequency of the tests.

CBI

[ ]	Test Description	Frequency (weekly, monthly, yearly, etc.)
	NA	NA

[ ] Mark (X) this box if you attach a continuation sheet.

PART C ENGINEERING CONTROLS

9.12 Describe the engineering controls that you use to reduce or eliminate worker exposure to the listed substance. Photocopy this question and complete it separately for each process type and work area.

CBI

[ ] Process type ..... POLYURETHANE PREPOLYMER POLYMERIZATION

Work area 1

Engineering Controls	Used (Y/N)	Year Installed	Upgraded (Y/N)	Year Upgraded
Ventilation:				
Local exhaust	Y	1971	Y	1978/1983
General dilution				
Other (specify)				
Vessel emission controls				
Mechanical loading or packaging equipment				
Other (specify)				

[ ] Mark (X) this box if you attach a continuation sheet.

9.13 Describe all equipment or process modifications you have made within the 3 years prior to the reporting year that have resulted in a reduction of worker exposure to the listed substance. For each equipment or process modification described, state the percentage reduction in exposure that resulted. Photocopy this question and complete it separately for each process type and work area.

CBI

[ ] Process type ..... POLYURETHANE PREPOLYMER POLYMERIZATION

Work area 1

Equipment or Process Modification	Reduction in Worker Exposure Per Year (%)
NONE	NONE

[ ] Mark (X) this box if you attach a continuation sheet.

PART D PERSONAL PROTECTIVE AND SAFETY EQUIPMENT

9.14 Describe the personal protective and safety equipment that your workers wear or use in each work area in order to reduce or eliminate their exposure to the listed substance. Photocopy this question and complete it separately for each process type and work area.

CBI

[ ] Process type ..... POLYURETHANE PREPOLYMER POLYMERIZATION

Work area 1

Equipment Types	Wear or Use (Y/N)
Respirators	Y
Safety goggles/glasses	Y
Face shields	N
Coveralls	N
Bib aprons	N
Chemical-resistant gloves	Y
Other (specify)	
SAFETY SHOES	Y

[ ] Mark (X) this box if you attach a continuation sheet.

9.15 If workers use respirators when working with the listed substance, specify for each process type, the work areas where the respirators are used, the type of respirators used, the average usage, whether or not the respirators were fit tested, and the type and frequency of the fit tests. Photocopy this question and complete it separately for each process type.

CBI

[__] Process type ..... POLYURETHANE PREPOLYMER POLYMERIZATION

Work Area	Respirator Type	Average Usage[1]	Fit Tested (Y/N)	Type of Fit Test[2]	Frequency of Fit Tests (per year)
1	NIOSH / MSHA	B	Y	QL	1

[1]Use the following codes to designate average usage:

A = Daily
B = Weekly
C = Monthly
D = Once a year
E = Other (specify) _____

[2]Use the following codes to designate the type of fit test:

QL = Qualitative
QT = Quantitative

[__] Mark (X) this box if you attach a continuation sheet.

PART E WORK PRACTICES

9.19 Describe all of the work practices and administrative controls used to reduce or eliminate worker exposure to the listed substance (e.g., restrict entrance only to authorized workers, mark areas with warning signs, insure worker detection and monitoring practices, provide worker training programs, etc.). Photocopy this question and complete it separately for each process type and work area.

CBI

[ ]

Process type ..... POLYURETHANE PREPOLYMER POLYMERIZATION

Work area 1

RESPIRATOR PROTECTION AND SAFETY EQUIPMENT
PLACARDING
LIMITED ACCESS
TRAINING PROGRAM
LAUNDERING SERVICE

9.20 Indicate (X) how often you perform each housekeeping task used to clean up routine leaks or spills of the listed substance. Photocopy this question and complete it separately for each process type and work area.

Process type ..... POLYURETHANE PREPOLYMER POLYMERIZATION

Work area 1

Housekeeping Tasks	Less Than Once Per Day	1-2 Times Per Day	3-4 Times Per Day	More Than 4 Times Per Day
Sweeping				
Vacuuming				
Water flushing of floors				
Other (specify)				

NO SPILLS OR LEAKS TO DATE

[ ] Mark (X) this box if you attach a continuation sheet.

9.21 Do you have a written medical action plan for responding to routine or emergency exposure to the listed substance?

Routine exposure

Yes 1

No 2

Emergency exposure

Yes 1

No 2

If yes, where are copies of the plan maintained?

Routine exposure: _____

Emergency exposure: _____

9.22 Do you have a written leak and spill cleanup plan that addresses the listed substance? Circle the appropriate response.

Yes 1

No 2

If yes, where are copies of the plan maintained? _____

Has this plan been coordinated with state or local government response organizations? Circle the appropriate response.

Yes 1

No 2

9.23 Who is responsible for monitoring worker safety at your facility? Circle the appropriate response.

Plant safety specialist 1

Insurance carrier 2

OSHA consultant 3

Other (specify) _____ 4

[ ] Mark (X) this box if you attach a continuation sheet.

SECTION 10 ENVIRONMENTAL RELEASE

General Instructions:

Complete Part E (questions 10.23-10.35) for each non-routine release involving the listed substance that occurred during the reporting year. Report on all releases that are equal to or greater than the listed substance's reportable quantity value, RQ, unless the release is federally permitted as defined in 42 U.S.C. 9601, or is specifically excluded under the definition of release as defined in 40 CFR 302.3(22). Reportable quantities are codified in 40 CFR Part 302. If the listed substance is not a hazardous substance under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) and, thus, does not have an RQ, then report releases that exceed 2,270 kg. If such a substance however, is designated as a CERCLA hazardous substance, then report those releases that are equal to or greater than the RQ. The facility may have answered these questions or similar questions under the Agency's Accidental Release Information Program and may already have this information readily available. Assign a number to each release and use this number throughout this part to identify the release. Releases over more than a 24-hour period are not single releases, i.e., the release of a chemical substance equal to or greater than an RQ must be reported as a separate release for each 24-hour period the release exceeds the RQ.

For questions 10.25-10.35, answer the questions for each release identified in question 10.23. Photocopy these questions and complete them separately for each release.

PART A GENERAL INFORMATION

10.01 Where is your facility located? Circle all appropriate responses.

CBI

[__] Industrial area 1

Urban area 2

Residential area 3

Agricultural area 4

Rural area 5

Adjacent to a park or a recreational area 6

Within 1 mile of a navigable waterway 7

Within 1 mile of a school, university, hospital, or nursing home facility 8

Within 1 mile of a non-navigable waterway 9

Other (specify) _____ 10

[__] Mark (X) this box if you attach a continuation sheet.

10.02 Specify the exact location of your facility (from central point where process unit is located) in terms of latitude and longitude or Universal Transverse Mercader (UTM) coordinates.

Latitude ..... 75 ° 20 ' 40 "

Longitude ..... 40 ° 16 ' 00 "

UTM coordinates ..... Zone _____, Northing _____, Easting _____

10.03 If you monitor meteorological conditions in the vicinity of your facility, provide the following information.

Average annual precipitation ..... _____ inches/year

Predominant wind direction ..... _____

10.04 Indicate the depth to groundwater below your facility.

Depth to groundwater ..... _____ meters

10.05 For each on-site activity listed, indicate (Y/N/NA) all routine releases of the listed substance to the environment. (Refer to the instructions for a definition of Y, N, and NA.)

CBI

[ ]

On-Site Activity	Environmental Release Air	Water	Land
Manufacturing			
Importing			
Processing	N	N	N
Otherwise used			
Product or residual storage			
Disposal	N	N	N
Transport			

[ ] Mark (X) this box if you attach a continuation sheet.

10.08 Describe the control technologies used to minimize release of the listed substance for each process stream containing the listed substance as identified in your process block or residual treatment block flow diagram(s). Photocopy this question and complete it separately for each process type.

CBI

[ ] Process type ..... POLYURETHANE PREPOLYMER POLYMERIZATION

Stream ID Code	Control Technology	Percent Efficiency
7F	NA	NA

[ ] Mark (X) this box if you attach a continuation sheet.

PART B RELEASE TO AIR

10.09 Point Source Emissions -- Identify each emission point source containing the listed substance in terms of a Stream ID Code as identified in your process block or residual treatment block flow diagram(s), and provide a description of each point source. Do not include raw material and product storage vents, or fugitive emission sources (e.g., equipment leaks). Photocopy this question and complete it separately for each process type.

CBI

[ ]

Process type ..... POLYURETHANE PREPOLYMER POLYMERIZATION

Point Source ID Code	Description of Emission Point Source
7F	REACTOR VENT

[ ] Mark (X) this box if you attach a continuation sheet.

10.10 Emission Characteristics - - Characterize the emissions for each Point Source ID Code identified in question 10.09 by completing the following table.

CBI

[ ]

Point Source ID Code	Physical State[1]	Average Emissions (kg/day)	Frequency[2] (days/yr)	Duration[3] (min/day)	Average Emission Factor[4]	Maximum Emission Rate (kg/min)	Maximum Emission Rate Frequency (events/yr)	Maximum Emission Rate Duration (min/event)
7F	G	1	100	30'	<0.5%	NA	100	30

[1]Use the following codes to designate physical state at the point of release:
G = Gas; V = Vapor; P = Particulate; A = Aerosol; O = Other (specify) _____

[2]Frequency of emission at any level of emission

[3]Duration of emission at any level of emission

[4]Average Emission Factor — Provide estimated (± 25 percent) emission factor (kg of emission per kg of production of listed substance)

[ ] Mark (X) this box if you attach a continuation sheet.

10.11 Stack Parameters -- Identify the stack parameters for each Point Source ID Code identified in question 10.09 by completing the following table.

CBI

[ ]

Point Source ID Code	Stack Height(m)	Stack Inner Diameter (at outlet) (m)	Exhaust Temperature (°C)	Emission Exit Velocity (m/sec)	Building Height(m)[1]	Building Width(m)[2]	Vent Type[3]
7E	3	0.1	25	UK	7	76	H

[1]Height of attached or adjacent building

[2]Width of attached or adjacent building

[3]Use the following codes to designate vent type:

H = Horizontal
V = Vertical

[ ] Mark (X) this box if you attach a continuation sheet.

10.12 If the listed substance is emitted in particulate form, indicate the particle size distribution for each Point Source ID Code identified in question 10.09. Photocopy this question and complete it separately for each emission point source.

CBI

[__]

NA

Point source ID code ..... _____

Size Range (microns)	Mass Fraction (% ± % precision)
< 1	
≥ 1 to < 10	
≥ 10 to < 30	
≥ 30 to < 50	
≥ 50 to < 100	
≥ 100 to < 500	
≥ 500	
	Total = 100%

[__] Mark (X) this box if you attach a continuation sheet.

PART C FUGITIVE EMISSIONS

10.13 Equipment Leaks -- Complete the following table by providing the number of equipment types listed which are exposed to the listed substance and which are in service according to the specified weight percent of the listed substance passing through the component. Do this for each process type identified in your process block or residual treatment block flow diagram(s). Do not include equipment types that are not exposed to the listed substance. If this is a batch or intermittently operated process, give an overall percentage of time per year that the process type is exposed to the listed substance. Photocopy this question and complete it separately for each process type.

CBI

[ ] Process type ..... POLYURETHANE PREPOLYMER POLYMERIZATION

Percentage of time per year that the listed substance is exposed to this process type ..... 40 %

Equipment Type	Number of Components in Service by Weight Percent of Listed Substance in Process Stream					
	Less than 5%	5-10%	11-25%	26-75%	76-99%	Greater than 99%
Pump seals[1]						
Packed	NA	NA	NA	NA	NA	NA
Mechanical	NA	NA	NA	2	NA	NA
Double mechanical[2]	NA	NA	NA	NA	NA	NA
Compressor seals[1]	NA	NA	NA	NA	NA	NA
Flanges	NA	NA	NA	8	NA	NA
Valves						
Gas[3]	NA	NA	NA	NA	NA	4
Liquid	NA	NA	NA	NA	NA	2
Pressure relief devices[4] (Gas or vapor only)	NA	NA	NA	NA	NA	3
Sample connections						
Gas	NA	NA	NA	NA	NA	NA
Liquid	NA	NA	NA	NA	NA	1
Open-ended lines[5] (e.g., purge, vent)						
Gas	NA	NA	NA	NA	NA	2
Liquid	NA	NA	NA	NA	NA	NA

[1] List the number of pump and compressor seals, rather than the number of pumps or compressors

10.13 continued on next page

[ ] Mark (X) this box if you attach a continuation sheet.

10.13 (continued)

[2]If double mechanical seals are operated with the barrier (B) fluid at a pressure greater than the pump stuffing box pressure and/or equipped with a sensor (S) that will detect failure of the seal system, the barrier fluid system, or both, indicate with a "B" and/or an "S", respectively

[3]Conditions existing in the valve during normal operation

[4]Report all pressure relief devices in service, including those equipped with control devices

[5]Lines closed during normal operation that would be used during maintenance operations

10.14 Pressure Relief Devices with Controls -- Complete the following table for those pressure relief devices identified in 10.13 to indicate which pressure relief devices in service are controlled. If a pressure relief device is not controlled, enter "None" under column c.

CBI

[ ]

a. Number of Pressure Relief Devices	b. Percent Chemical in Vessel[1]	c. Control Device	d. Estimated Control Efficiency[2]
3	11-25 %	PRESSURE	100 %

[1]Refer to the table in question 10.13 and record the percent range given under the heading entitled "Number of Components in Service by Weight Percent of Listed Substance" (e.g., <5%, 5-10%, 11-25%, etc.)

[2]The EPA assigns a control efficiency of 100 percent for equipment leaks controlled with rupture discs under normal operating conditions. The EPA assigns a control efficiency of 98 percent for emissions routed to a flare under normal operating conditions

[ ] Mark (X) this box if you attach a continuation sheet.

10.15 Equipment Leak Detection -- If a formal leak detection and repair program is in place, complete the following table regarding those leak detection and repair procedures. Photocopy this question and complete it separately for each process type.

CBI

[ ] Process type ..... POLYURETHANE PREPOLYMER POLYMERIZATION

Equipment Type	Leak Detection Concentration (ppm or mg/m^3) Measured at ____ Inches from Source	Detection Device[1]	Frequency of Leak Detection (per year)	Repairs Initiated (days after detection)	Repairs Completed (days after initiated)
Pump seals					
Packed	NA	NA	NA	NA	NA
Mechanical	NA	FPM	4	1	1
Double mechanical	NA	NA	NA	NA	NA
Compressor seals	NA	NA	NA	NA	NA
Flanges	NA	FPM	1	1	1
Valves					
Gas	NA	FPM	146	1	1
Liquid	NA	FPM	146	1	1
Pressure relief devices (gas or vapor only)	NA	FPM	146	1	1
Sample connections					
Gas	NA	NA	NA	NA	NA
Liquid	NA	FPM	146	1	1
Open-ended lines					
Gas	NA	FPM	146	1	1
Liquid	NA	NA	NA	NA	NA

[1]Use the following codes to designate detection device:

POVA = Portable organic vapor analyzer
FPM = Fixed point monitoring
O = Other (specify) _____

[ ] Mark (X) this box if you attach a continuation sheet.

10.16 Raw Material, Intermediate and Product Storage Emissions - - Complete the following table by providing the information on each liquid raw material, intermediate, and product storage vessel containing the listed substance as identified in your process block or residual treatment block flow diagram(s).

CBI

[ ]

Vessel Type[1]	Floating Roof Seals[2]	Composition of Stored Materials[3]	Throughput (liters per year)	Vessel Filling Rate (gpm)	Vessel Filling Duration (min)	Vessel Inner Diameter (m)	Vessel Height (m)	Operating Vessel Volume (l)	Vessel Emission Controls[4]	Design Flow Rate[5]	Vent Diameter (cm)	Control Efficiency (%)	Basis for Estimate[6]
F	NA	100(<1)	81030	2.5	60	0.60	0.9	185	NA	NA	1.90	99	C
F	NA	4-7(<1)	540,200	8	120	1.22	1.83	2090	NA	NA	5.08	99	C

[1]Use the following codes to designate vessel type:

F = Fixed roof
CIF = Contact internal floating roof
NCIF = Noncontact internal floating roof
EFR = External floating roof
P = Pressure vessel (indicate pressure rating)
H = Horizontal
U = Underground

[2]Use the following codes to designate floating roof seals:

MS1 = Mechanical shoe, primary
MS2 = Shoe-mounted secondary
MS2R = Rim-mounted, secondary
LM1 = Liquid-mounted resilient filled seal, primary
LM2 = Rim-mounted shield
LMW = Weather shield
VM1 = Vapor mounted resilient filled seal, primary
VM2 = Rim-mounted secondary
VMW = Weather shield

[3]Indicate weight percent of the listed substance. Include the total volatile organic content in parenthesis

[4]Other than floating roofs

[5]Gas/vapor flow rate the emission control device was designed to handle (specify flow rate units)

[6]Use the following codes to designate basis for estimate of control efficiency:

C = Calculations
S = Sampling

[ ] Mark (X) this box if you attach a continuation sheet.

PART E NON-ROUTINE RELEASES

10.23 Indicate the date and time when the release occurred and when the release ceased or was stopped. If there were more than six releases, attach a continuation sheet and list all releases.

Release	Date Started	Time (am/pm)	Date Stopped	Time (am/pm)
1	NA	NA	NA	NA
2				
3				
4				
5				
6				

10.24 Specify the weather conditions at the time of each release.

Release	Wind Speed (km/hr)	Wind Direction	Humidity (%)	Temperature (°C)	Precipitation (Y/N)
1					
2					
3					
4					
5					
6					

[ ] Mark (X) this box if you attach a continuation sheet.