Clifford A. Chanler, State Bar No. 135534 1 Eric S. Somers, State Bar No. 139050 2 CHANLER & SOMERS Suite 110 3 1700 Montgomery Street San Francisco, CA 94111 Tel: (415) 391-1122 Fax: (415) 391-1157 San Francisco County Superior Court 4 DEC 27 1995 5 ALAN CARLSON, Clerk Attorneys for Plaintiff 6 BY: Deputy Clerk AS YOU SOW 7 SUPERIOR COURT OF CALIFORNIA 8 IN AND FOR THE COUNTY OF SAN FRANCISCO 9 10 Case No. 973116 AS YOU SOW, a non-profit 11 corporation, 12 STIPULATION FOR ENTRY OF Plaintiff JUDGMENT AND JUDGMENT ON 13 STIPULATION v. 14 AMREP, INC., a corporation, and DOES 1 through 1000, 15 Defendants. 16 17 18 19 20 21 22 23 24 25

26

27

IT IS HEREBY STIPULATED, by and between plaintiff As You Sow and defendant Amrep, Inc., through their respective representatives, that judgment in the above-entitled action be entered in accordance with the terms of the settlement agreement between the parties, which is attached hereto as 5 Exhibit A. 6 7 8 9 Dated: December 22, 1995 Eric S. Somers Attorneys for Plaintiff 10 AS YOU SOW 11 12 Dated: December 13, 1995 13 Daniel E. Attorneys for Defendant 14 Amrep, Inc. 15 16 IT IS HEREBY ORDERED that judgment be entered in 17 accordance with the terms of the stipulation between the 18 parties. 19 20 21 Dated: December 97, 1995 22 Judge the Superior Court 23 24 25

1

2

3

4

26 27

28

#### SETTLEMENT AGREEMENT

This Settlement Agreement (this "Agreement") is entered into by and between As You Sow, a California nonprofit corporation ("AYS") and Amrep, Inc. a Delawice corporation ("AMREP") as of December 5, 1995 (the "Effective Date").

#### WHEREAS:

AYS is a not-for-profit public interest foundation dedicated to promoting consumer and worker awareness, protecting the environment and improving human health; and

AMREP is a corporation that manufactures and distributes various products in the State of California that contain the following chemicals listed pursuant to Proposition 65: formaldehyde, toluene, methylene chloride and perchloroethylene; and

A list of the products that contain one or more of the chemicals listed above which are covered by this Agreement is provided in Exhibit A (the "Products"); and

Some of the Products have been distributed and sold by AMREP for use in California since January 1, 1989; and

On June 12, 1995, AYS first served AMREP and all of the requisite public enforcement agencies with a document entitled "60-Day Notice" which provided AMREP and such public enforcers with notice that AMREP was allegedly in violation of Health & Safety Code §25249.6 for failing to warn purchasers that certain products it sells in California expose users to Proposition 65-listed chemicals;

As a result of receiving AYS' 60-Day Notice, AMREP began labeling the Products with Proposition 65 warnings in August 1995.

#### NOW, THEREFORE, THE PARTIES AGREE AS FOLLOWS:

1. Product Labeling. Beginning immediately, AMREP shall initiate revisions to its current labels for the Products. AMREP shall use its best efforts to ensure that all Products are relabeled as quickly as possible, however, AMREP agrees that as of January 31, 1996, it shall not ship (or cause to be shipped) any of the Products for sale or use into the State of California unless each such Product contains the appropriate warning statement on its label as follows:

(1)

(1)

"WARNING: This product contains a chemical(s) known to the State of California to cause birth defects or other reproductive harm."

1.2. For Products containing a chemical listed by the State of California as known to cause cancer:

"WARNING: This product contains a chemical(s) known to the State of California to cause cancer."

1.3. For Products containing any combination of chemicals listed by the State of California as known to cause cancer and known to cause birth defects or other reproductive harm:

"WARNING: This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm."

The warning statement shall be prominent and displayed with such conspicuousness, as compared with other words, statements, or designs as to render it likely to be read and understood by an ordinary individual. The parties agree that the sample label attached hereto as Exhibit B satisfies this requirement.

- 2. Restitution. AMREP agrees to pay \$6,000 to AYS in accordance with the payment plan set forth in Section 5 of this Agreement as restitution. This payment, which is made pursuant to Business & Professions Code \$17203, shall be forwarded by AYS to the Rainforest Action Network and the AYS Proposition 65 Investigation Fund. The Rainforest Action Network is a non-profit advocacy group dedicated to saving rainforests from destruction. The Investigation Fund supports research and investigation regarding the exposure of California citizens to chemicals listed pursuant to Proposition 65.
- 3. Penalty. Pursuant to Health & Safety Code §25249.7(b), AMREP shall pay, in accordance with the payment plan set forth in Section 5 of this Agreement, a civil penalty of \$4,700.
- 4. Reimbursement of Fees and Costs. AMREP agrees to reimburse AYS for its investigation fees and costs, expert fees, reasonable attorneys' fees, and any other costs incurred as a result of investigating, bringing this matter to AMREP's

attention, litigating and negotiating a settlement in the public interest. In accordance with the payment plan set forth in Section 5 of this Agreement, AMREP shall pay AYS \$19,200 as reimbursement of its fees and costs.

5. Payment Plan. AMREP agrees to pay AYS the amounts set forth in Sections 2, 3 and 4 of this Agreement in seven (7) individual payments. Such payments shall be made at the offices of Chanler & Somers as follows:

\$4,271 upon entry of a Stipulated Judgment pursuant to Section eleven (11) of this Agreement.

\$4,271 on January 1, 1996.

\$4,271 on February 1, 1996.

\$4,271 on March 1, 1996.

\$4,271 on April 1, 1996.

\$4,271 on May 1, 1996.

\$4,274 on June 1, 1996.

- 6. AYS Release. AYS, by this Agreement, waives all rights to institute action against AMREP, its distributors or customers, whether under Proposition 65 or Business & Professions Code §§17200 et seq., based on AMREP's failure to warn about exposure to Proposition 65-listed chemicals contained in any of the Products manufactured on or prior to the date of this Agreement.
- 7. AMREP Release. AMREP, by this Agreement, waives all rights to institute any form of legal action against AYS, its members, officers, directors, attorneys and representatives (the "AYS Releasees") for all actions or statements made by the AYS Releasees in the course of seeking enforcement of Proposition 65 or Business & Profession Code §§17200 et seq. against AMREP on or prior to the date of this Agreement.
- 8. MSDS Revisions. AMREP shall ensure that the Material Safety Data Sheets ("MSDS") for each of the Products contains a warning that will be consistent in wording with the on-label warning language required by Section 1. Final MSDSs incorporating the revised warning language will begin to be distributed in the normal course of business on or before January 31, 1996.
- 9. Supplier Information. AMREP agrees to provide AYS with all Material Safety Data Sheets which AMREP has received from its suppliers of Proposition 65 chemicals over the last

year, and any other warning materials received from such suppliers. AMREP shall also provide AYS with an affidavit from an employee of AMREP having the requisite knowledge and authority to state that the MSDSs and other warning materials were, to the best of Amrep's knowledge, in fact received from each such supplier of Proposition 65 chemicals, that all such warning materials are attached to such affidavit, and that no other warning materials were received from any such manufacturers.

- 10. Representations and Warranties. The parties make the following representations and warranties:
- 10.1. AMREP represents and warrants as follows:
- 10.1.1. Each of the Products listed in Exhibit "A" contains one or more substances known to the state of California to cause cancer or birth defects or other reproductive toxicity, and that AMREP has no analytical, risk assessment, or other data indicating that an exposure to any Products listed in Exhibit "A" poses "no significant risk" or will have "no observable effect" as each such standard is applicable and as each is defined under Health & Safety Code §25249.10(c).
- In the event that AMREP obtains 10.1.2. analytical, risk assessment, or other data that shows that an exposure to any Products listed in Exhibit "A" poses "no significant risk" or will have "no observable effect" as each such standard is applicable and as each is defined under Health & Safety Code \$25249.10(c), AMREP shall provide AYS with sixty (60) days prior written notice of its intent to limit or eliminate the warning provisions under Section 1 and shall provide AYS with all such supporting data. Within twenty (20) days of receipt of AMREP's exposure data, AYS shall provide AMREP with written notice of its desire to challenge the data (in the event that AYS chooses to make such a challenge), and AYS and AMREP shall negotiate in good faith to attempt to reach a settlement. event that no settlement is reached within twenty (20) days of mailing by AYS of such notice to challenge, AYS and AMREP agree to submit such challenge to binding arbitration, with an arbitrator acceptable to both parties. The prevailing party shall be entitled to reasonable attorneys' fees and costs associated with such an arbitration. If AYS does not challenge AMREP's notice or the arbitrator determines that no warning is required for a particular Product or Products, AMREP shall no longer be required to provide the warnings described in Section 1 of this Agreement for those Products.
- 10.1.3. AMREP represents that the sales data provided in the affidavit, attached hereto as Exhibit "C", is true and accurate, and that such sales data was a material

4

inducement upon which AYS has relied to enter into this Agreement and to determine the amount of penalties and restitution in Sections two (2) and three (3) of this Agreement.

0

- 11. Stipulated Judgment. The parties shall file a stipulated judgment to be approved pursuant to CCP §664.6 by the San Francisco Superior Court in accordance with the terms of this agreement.
- 12. Severability. In the event that any of the provisions of this Agreement are held by a court to be unenforceable, the validity of the enforceable provisions shall not be adversely affected.
- 13. Change in Law. In the event that any law, rule regulation or final decision of any legislative, judicial or executive body with jurisdiction becomes effective or is entered, which renders the warnings agreed to under Section one (1) of this Agreement unnecessary or inappropriate to comply with applicable laws, AMREP, at its option, may cease placing the warnings required under Section one (1) on its labels and MSDSs; provided, however, that AMREP shall continue to provide any warnings that continue to be required under other applicable laws, rules and regulations. AMREP shall provide AYS thirty (30) days prior written notice of its intent to so limit the warning provisions under Section one (1) of this Agreement and shall provide AYS with a written explanation for the basis of its contention that any new or revised law, rule, regulation or final decision limits or otherwise renders inapplicable the warning provisions of Proposition 65. Notwithstanding the terms of this Section, AYS shall not be required under any circumstances to refund or return any amount paid pursuant to Sections two (2), three (3), and four (4) of this Agreement.
- 14. Attorneys' Fees. In the event that a dispute arises with respect to any provision(s) of this Agreement, the prevailing party shall be entitled to recover costs and reasonable attorneys' fees.
- 15. Governing Law. The terms of this Agreement shall be governed by the laws of the State of California.
- 16. Notices. All correspondence to AYS shall be mailed to:

Eric S. Somers, Esq. Chanler & Associates 1700 Montgomery Street Suite 110 San Francisco, CA 94111

All correspondence to AMREP shall be mailed to:

Stanley W. Landfair, Esq. McKenna & Cuneo 444 South Flower Street, 8th Floor Los Angeles, CA 90071-2909

17. No Admissions. Nothing in this Agreement shall be construed as an admission by AMREP of any fact, finding, issue of law, or violation of law, nor shall compliance with this Agreement constitute or be construed as an admission by AMREP of any fact, finding, conclusion, issue of law, or violation of law. However, this section shall not diminish or otherwise affect the obligation, responsibilities, and duties of AMREP under this Agreement.

18. Authorization. The undersigned are authorized to execute this Agreement on behalf of their respective parties and have read, understood and agree to all of the terms and conditions of this Agreement.

AGREED TO:	AGREED TO:
AS YOU SOW	Amrep, Inc.
	Im Rocke
	Ian R. Gecker
Printed Name	Printed Name
	12/8/95
Date	Dato

AND THE RESIDENCE OF THE PROPERTY OF THE PROPE

All correspondence to AMREP shall be mailed to:

Stanley W. Landfair, Esq. McKenna & Cuneo 444 South Flower Street, 8th Floor Los Angeles, CA 90071-2909

17. No Admissions. Nothing in this Agreement shall be construed as an admission by AMREP of any fact, finding, issue of law, or violation of law, nor shall compliance with this Agreement constitute or be construed as an admission by AMREP of any fact, finding, conclusion, issue of law, or violation of law. However, this section shall not diminish or otherwise affect the obligation, responsibilities, and duties of AMREP under this Agreement.

18. Authorization. The undersigned are authorized to execute this Agreement on behalf of their respective parties and have read, understood and agree to all of the terms and conditions of this Agreement.

AGREED TO:	AGREED TO:
AS YOU SOW	Amrep, Inc.
LISA S. WIGGINS	
Printed Name	Printed Name
12-5-15	
Date	Date

# Exhibit A

Degreasers & Cleaners 5877SBR Liquid Tape Reducers 5982SBR Hard Surface Cleaners R960		No Mess 739008 Wood Floor and Hard Surface Finishes R842. F	Ф	te	reatment	Choke & Carb Cleaners 73520 Stainless Steel Polishes		ay's & Mold Releases	Penetrants/Lubricants 39020	Gear & Chain Lubricants 38020	Sasket and Decal Removers		ing Solvents	over	Vandalism Mark Remover 17820	Dri-White Powder Spot Removers 17620,		Goodbye Graffiti 2 R179	Goodbye Graffiti 1 R178	PRODUCT NAME PROI
3008SBR 5877SBR, 5984SBR 5982SBR, 5983SBR	20055SBR 31020STG, 31220STC	739008 R842. R890. R892. R895	RL735, RL736, RL734, RL728, 6191SBL, 6194SBL, 6251SBA, RL737			73520, 73620, R736, 736008S*D, 73616S*A, 73616S*C/24, 73616S*D, 73616S*E, 73620S*B/24, 73620S*F	73320, 5798SBR	32216, 72020, 321205 A, 324165 C, 324165 D, 324165 E	39020, 5876SBR, 39116, 39120	38020, RL353	37516, R376, 37516JMP/24, 6185SBR	36616, 36620, R366 , 366005R™BO	36516, 36520, R363, R364, R365, 36520S <b>∵</b> E			, 17620S~B, 17620S~C	17520, 3019SBR			PRODUCT CODE



This powerful combination of concentrated solvents is specially formulated for move did, gum and vanish deposts that tend to build up on the moving and sealing surfaces of engine carburetors, hear valves and automatic checks, thorde bodies, Pot Valvas and Intalges. Our product helps to five sticky valves, stuck hear fisers and throttle Intalges. No accohed, lead or stillcore. Will not harm onzygen seasors, catalytic converters or flue Injectors. Periodic use on cars, stucks, airplanes, boats, lawrencests, etc., will keep engines clean, fuel efficient and trouble free. This cleaner can be used on running engines. This product is formulated for high performance without the use of excere deplating chlorinated solvents.

without the use of erone deplating chlorinated solvents.

DIRECTIONS

Always hold can in an upright position during use.

Remove cap and insert extension tube into spray Up.

CARBURETOR Remove the air cleaner assembly. Run corpine at last idle Spray at Indiages, bowls, chambers, foots, jobs and setting screes. Deposits will dissolve and flush away.

CHOKE: White opening and closing choke by hand, spray both ends of valve shall, it choke is not completely free after this procedure, remove choke cover and start engine. With engine running, spray cleaner in vacuum cylinder used choke operates feety.

PCV VALVE: After disconnecting valve hose, spray cleaner directly into PCV valve. Start engine, run for one or two minutes then shut engine off. Spray valve once more and reconnect hose.

HEAT VALVE: Spray cleaner into open ond of valve shalt, After allowing spray to ponetrate, move valve up and down. Repeat until valve moves feety.

OTHER USES: Frees heat risers by dissolving build up around shaft IMPORTANT: Oping spray to position spray or spit on painted surfaces.

DANGER: Extremely Itamnable. Contains Acetone. Toluene. Xylone. Alphatic Petroleum Datifiatas, and 2-Butoryedunol. Do not use near heat, sparks, openitain an any other syndron source. Hamiltor fatal if shadlowed, it is wisbowed, do not induce womiting. Cat a physician immediately. Vapor hamilit. Avoid prolonged breathing of vapors or contact with eyes or six nucles with adoption in overcome by furnes, tempor within to fresh air. Bassisotate if necessary, Get medical attention. Contents under pressure. Do not purcture or incinerate container. Do not expose to heat or temperatures exceeding 120°F. WARNING: This product contains a chemical or chemical's known to the State of Calfornia to cause birth defects or other reproductive harm. KEEP OUT OF REACH OF CHILDREN. 1291

12:94
CAS NUMBERS: Acetona 67-54-1; Toluena 108-83-3, Alphade Petrósum
Distillates 68:551-19-9, 2-Butoryathanol 111-76-2; Xylena 1330-20-7; Carbon Dioxido 124-38-9.
Meets or exceeds current California V.O.C. requirements

#### Equivalent to 17 Fluid Ounces

# REORDER ITEM NUMBER 736-20

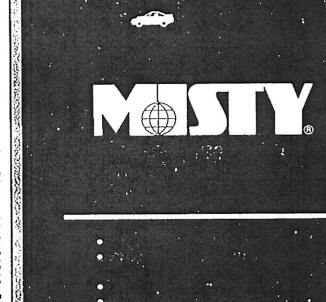


This container is made with at least 25% recycled steel and may be recycled inthe few budgrowing number of communities where (steel) acrosol can recycling is available. Check for acrosof can recycling in your area. Use can in accordance with label directions.

FOR EMERGENCY MEDICAL INFORMATION CHEM-TEL, INC. 1-800-255-3924

MADE IN USA BY:

AMREP, INC. 990 Industrial Park Drive • Marietta, GA 30062



736-20 REV 04 94/12 18067 LABEL.



EXHIBIT C

RECEIVED DEC 1 4 1995

McKENNA AND CUNEO

AFFIDAVIT

State Of Georgia County Of Cobb

Ian R. Gecker, being duly swom, says:

The Products set forth at Exhibit A of that certain Agreement between As You Sow and AMREP, Inc., dated December 5, 1995, and sold in the State Of California in the year 1994 total less than eighty-one thousand (81,000) units.

The Material Safety Data Sheets (MSDSs) provided to AYS pursuant to Para. 9 of said Agreement, were in fact received from each supplier of Proposition 65 chemicals so noted in the MSDS, such that all such MSDSs from any such manufacturer are attached to this Affidavit.

Afte-undersigned has the requisite knowledge and authority to so state the facts contained in this affidavit.

Ian R. Gecker, V.P. - Technical

....

121295-2

Netary Public, Cherokee County George



# Material Safety Data Sheet

The Dow Chemical Company Midland, Michigan 48674

1. CHEMICAL PRODUCT & COMPANY IDENTIFICATION

Page: 1

24-Hour Emergency Phone Number: 517-636-4400

Product: AEROTHENE (R) MM SOLVENT

Product Code: 06347

Effective Date: 09/01/95

Date Printed: 09/21/95

MSD: 000551

The Dow Chemical Company, Midland, MI 48674

Customer Information Center: 800-258-2436

2. COMPOSITION/INFORMATION ON INGREDIENTS

Methylene chloride Propylene oxide

CAS# 000075-09-2 CAS# 000075-56-9

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

\* Colorless liquid. Irritating odor. Toxic fumes are released in \* fire situations. Harmful if inhaled. Can cause death if too much \* is breathed. Clear all personel from area. Wear full protected \* equipment. Contain liquid to prevent contamination of soil, surface \* \* water or ground water. 

POTENTIAL HEALTH EFFECTS (See Section 11 for toxicological data.)

EYE: May cause pain. May cause moderate eye irritation. May cause slight corneal injury. Vapors may irritate eyes.

SKIN: Prolonged or repeated exposure may cause skin irritation, even a burn. Repeated contact may cause drying or flaking of skin. May cause more severe response if confined to skin. Extensive skin contact with methylene chloride, such as immersion, may cause an intense burning sensation, followed by a cold, numb feeling which will subside after contact. A single prolonged exposure is not likely to result in the material being absorbed through skin in harmful amounts.

INGESTION: Single dose oral toxicity is considered to be low.

(Continued on page 2 , over) (R) Indicates a Trademark of The Dow Chemical Company

TO STREET STORY TO STREET STORY OF STREET

PAGE: 2

Product: AEROTHENE (R) MM SOLVENT Product Code: 06347

Effective Date: 09/01/95 Date Printed: 09/21/95 MSD: 000551

Small amounts swallowed incidental to normal handling operations are not likely to cause injury; swallowing amounts larger than that may cause injury. If aspirated (liquid enters the lung), may be rapidly absorbed through the lungs and result in injury to other body systems.

INHALATION: In confined or poorly ventilated areas, vapors can readily accumulate and can cause unconsciousness and death. Excessive exposure may cause irritation to upper respiratory tract. Excessive exposure may cause carboxyhemoglobinemia, thereby impairing the blood's ability to transport oxygen. Minimal anesthetic or narcotic effects may be seen in the range of 500-1000 ppm methylene chloride. Progressively higher levels over 1000 ppm can cause dizziness, drunkenness, and as low as 10,000 ppm, unconsciousness and death. These high levels may also cause cardiac arrhythmias (irregular heartbeats).

SYSTEMIC (OTHER TARGET ORGAN) EFFECTS: Signs and symptoms of excessive exposure may be central nervous system effects. Excessive exposure may cause carboxyhemoglobinemia, thereby impairing the blood's ability to transport oxygen. Excessive exposure may cause peripheral neuropathy (injury to nerves of the extremities). Observations in animals include liver and kidney effects.

CANCER INFORMATION: For hazard communication purposes under OSHA Standard 29 CFR Part 1910.1200, methylene chloride and propylene oxide have been listed as potential carcinogens by IARC and NTP. Methylene chloride has been shown to increase the rate of spontaneously occurring malignant tumors in the B6C3F1 mouse and benigh tumors in laboratory rats. Other animal studies, as well as several human epidemiology studies, failed to show a tumorigenic response. Methylene chloride is not believed to pose a measurable carcinogenic risk to man when handled as recommended. Lifetime inhalation studies in laboratory animals with propylene oxide suggest a weak carcinogenic effect.

TERATOLOGY (BIRTH DEFECTS): Birth defects are unlikely. Exposures having no effect on the mother should have no effect on the fetus. Did not cause birth defects in animals; other effects were seen in the fetus only at doses which caused toxic effects to the mother.

REPRODUCTIVE Effects: In animal studies, has been shown not to interfere with reproduction.

Commence of the second street of the second second

# 4. FIRST AID

(Continued on page 3) (R) Indicates a Trademark of The Dow Chemical Company

PAGE: 3

Product: AEROTHENE (R) MM SOLVENT

Product Code: 06347

Effective Date: 09/01/95 Date Printed: 09/21/95 MSD: 000551

EYES: Irrigate with flowing water immediately and continuously for 15 minutes. Consult medical personnel.

SKIN: Wash off in flowing water or shower.

INGESTION: Do not induce vomiting. Call a physician and/or transport to emergency facility immediately.

INHALATION: Remove to fresh air. If not breathing, give Artificial respiration. If breathing is difficult, oxygen should be administered by qualified personnel. Call a physician or transport to a medical facility.

NOTE TO PHYSICIAN: Because rapid absorption may occur through lungs if aspirated and cause systemic effects, the decision of whether to induce vomiting or not should be made by a physician. If lavage is performed, suggest endotracheal and/or esophageal control. Danger from lung aspiration must be weighed against toxicity when considering emptying the stomach. Exposure may increase "myocardial irritability." Bo not administer sympathomimetic drugs unless absolutely necessary. If burn is present, treat as any thermal burn, after decontamination. No specific antidote. Supportive care. Treatment based on judgment of the physician in response to reactions of the patient. Carboxyhemoglobinemia may aggravate any preexisting condition sensitive to a decrease in available oxygen, such as chronic lung disease, coronary artery disease or anemias.

#### 5. FIRE FIGHTING MEASURES

FLAMMABLE PROPERTIES
FLASH POINT: None
METHOD USED: TCC, TOC, COC
AUTOIGNITION TEMPERATURE: None available.

FLAMMABLE LIMITS

LFL: 14% @ 25 deg C. UFL: 22% @ 25 deg C.

HAZARDOUS COMBUSTION PRODUCTS: During a fire, smoke may contain the original material in addition to unidentified toxic and/or irritating compounds. Hazardous combustion products may include and are limited to hydrogen chloride. Hazardous combustion products may include trace amounts of phosgene,

(Continued on page 4 , over)
(R) Indicates a Trademark of The Dow Chemical Company

PAGE: 4

Product: AEROTHENE (R) MM SOLVENT

Product Code: 06347

Effective Date: 09/01/95 Date Printed: 09/21/95 MSD: 000551

chlorine.

OTHER FLAMMABILITY INFORMATION: Container may vent and/or rupture due to fire. Although this material does not have a flash point, it can burn at room temperature. Vapors are heavier than air and may travel a long distance and accumulate in low lying ares.

EXTINGUISHING MEDIA: Water fog or fine spray. Carbon dioxide. chemical. Foam. Water fog, applied gently may be used as a blanket for fire extinguishment.

FIRE FIGHTING INSTRUCTIONS: Keep people away. Isolate fire area and deny unnecessary entry. Contain fire run-off if possible. Fire water run-off, if not contained may cause environmental damage. Water fog applied gently may be used as a blanket for fire extringuishment. Use water spray to cool fire exposed containers and fire affected zone until fire is out and danger of reignition has passed. Immediately withdraw all personell from area in case of rising sound fron venting safety device or discoloration of the container. Move container from fire area if this is possible without hazard. Stay upwind. Keep out of low areas where gases (fumes) can accumulate. Eliminate ignition source.

PROTECTIVE EQUIPMENT FOR FIRE FIGHTERS: Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, pants, boots, and gloves. If protection equipment is not available or not used, fight fire from a protected location or safe distance. For protection equipment in post-fire or non-fire clean up situations, refer to the relevant sections.

### ACCIDENTAL RELEASE MEASURES (See Section 15 for Regulatory Information)

PROTECT PEOPLE: Clear all personnel from area. Do not breathe vapors. Ventilate area of leak or spill. Wear protective equipment including positive pressure self contained or air supplied breathing apparatus. Follow confined space entry procedures: ASTM 0-4276 and OSHA (29 CFR 1910.146).

PROTECT ENVIRONMENT: Contain liquid to prevent contamination of soil, surface water or ground water. Material is heavier than water and has limited water solubility. It will collect on the lowest surface.

(Continued on page 5)
(R) Indicates a Trademark of The Dow Chemical Company

The state of the s

PAGE: 5

Product: AEROTHENE (R) MM SOLVENT

Product Code: 06347

Effective Date: 09/01/95 Date Printed: 09/21/95 MSD: 000551

CLEANUP: for large spills: contain liquid; transfer to properly labeled closed metal containers. for small spills: mop or soak up immediately. Place in properly labeled metal containers.

#### 7. HANDLING AND STORAGE

HANDLING: To avoid uncontrolled emissions vent vapor from container to storage tank. Do not eat, drink, or smoke in working area. Refer to Exposure Controls/Personal Protection, Section 8, of the MSDS. Containers, even those that have been emptied, can contain vapors. Do not cut, drill, grind, weld, or perform similar operations on or near empty containers. Vapors of this product are heavier than air and will collect in low areas such as pits, degreasers, storage tanks, and other confined areas. Do not enter these areas where vapors of this product are suspected unless special breathing apparatus is used and an observer is present for assistance. Manual operations (such as cold cleaning or paint stripping) using methylene chloride should be engineered to provide for confining solvent vapors, adequate ventilation and/or respiratory protection to reduce the potential for overexposure to vapors. Gloves or other protective equipment should be worn if skin contact is likely.

STORAGE: Keep containers tightly closed when not in use. For more Storage and Handling information refer to bulletin #100-06170. Store in a dry place. Significant vapor pressures (greater than 5 psi) can be generated above (104 DegF). This may result in venting or rupture. Do not store in aluminum, zinc, aluminum alloys and plastics. Product should not be packaged in aluminum aerosol cans or with finely divided aluminum or its alloys in an aerosol can. Product is denser than water. Design storage containers appropriately.

# 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS: Provide general and/or local exhaust ventilation to control airborne levels below the exposure guidelines. Lethal concentration may exist in areas with poor ventilation.

PERSONAL PROTECTIVE EQUIPMENT
EYE/FACE PROTECTION: Use chemical goggles. If vapor exposure
causes eye discomfort, use a full-face respirator.

(Continued on page 6 , over)
(R) Indicates a Trademark of The Dow Chemical Company

PAGE: 6

Product: AEROTHENE (R) MM SOLVENT

Product Code: 06347

Effective Date: 09/01/95 Date Printed: 09/21/95 MSD: 000551

SKIN PROTECTION: Use protective clothing impervious to this material. Selection of specific items such as faceshield, gloves, boots, apron, or full body suit will depend on operation. Remove contaminated clothing immediately, wash skin area with soap and water, and launder clothing before reuse.

RESPIRATORY PROTECTION: Atmospheric levels should be maintained below the exposure guideline. When respiratory protection is required, use an approved air-purifying or positivepressure supplied-air respirator depending on the potential airborne concentration. For emergency and other conditions where the exposure guideline may be greatly exceeded, use an approved positive-pressure self-contained breathing apparatus or positive-pressure airline with auxiliary self-contained air supply. In confined or poorly ventilated areas, use an approved positive-pressure supplied-air respirator.

EXPOSURE GUIDELINE (S): Methylene Chloride: ACGIH TLV.is 50 ppm, A2. OSHA PEL is 500 ppm TWA, 1000 ppm Ceiling, 2000 ppm Peak.

Propylene oxide: Dow IHG is 3 ppm. The ACGIH TLV and OSHA PEL are 20 ppm.

PELs are in accord with those recommended by OSHA, as in the 1989 revision of PELs.

### 9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE: Colorless liquid.

ODOR: Irritating odor.

VAPOR PRESSURE: 355mmHg @ 20C

VAPOR DENSITY: 2.93

BOILING POINT: 104F (39.8C)

SOLUBILITY IN WATER: 2.0 g/100g @ 25C SPECIFIC GRAVITY: 1.320 @ 25/25C

### 10. STABILITY AND REACTIVITY

CHEMICAL STABILITY: Stable under recommended storage conditions. See storage section.

CONDITIONS TO AVOID: Avoid direct sunlight or ultraviolet sources. Avoid open flames, welding arcs, or other high temperature sources which induce thermal decomposition. High

(Continued on page 7) (R) Indicates a Trademark of The Dow Chemical Company

PAGE: 7

Product: AEROTHENE (R) MM SOLVENT

Product Code: 06347

Effective Date: 09/01/95

Date Printed: 09/21/95

MSD: 000551

energy sources such as welding arcs can cause degradation generating chlorine, hydrogen chloride and possible phosgene, and should be avoided.

INCOMPATIBILITY WITH OTHER MATERIALS: Avoid contact with metals such as: aluminim powders, magnesium powders, potassium, sodium, and zinc powder. Avoid unintended contact with amines. Avoid contact with strong bases and strong oxidizers. Avoid prolonged contact with or storage in aluminum or its alloys.

HAZARDOUS DECOMPOSITION PRODUCTS: Hazardous decomposition products may include and are not limited to hydrogen chloride and trace amounts of chlorine and phosgene.

HAZARDOUS POLYMERIZATION: Will not occur.

11. TOXICOLOGICAL INFORMATION (See Section 3 for Potential Health Effects. For detailed toxicological data, write or call the address or non-emergency number shown in Section 1)

SKIN: The dermal LD50 has not been determined.

INGESTION: The oral LD50 for rats is in the range of 1500-2500 mg/kg.

MUTAGENICITY: Negative or equivocal results have been obtained in mutagenicity tests with methylene chloride using mammalian cells or animals. This is consistent with the lack of interaction DNA in rats and hamsters. Although results of Ames bacterial tests have generally been positive, overall the data suggest that genotoxic potential does not appear to be a significant factor in the toxicity of methylene chloride. For propylene oxide in vitro mutagenicity studies were positive. Animal mutagenicity studies were predominantly negative.

12. ECOLOGICAL INFORMATION (For detailed Ecological data, write or call the address or non-emergency number shown in Section 1)

ENVIRONMENTAL FATE

MOVEMENT & PARTITIONING: Based largely or completely on component information. Bioconcentration potential is low (BCF less than 100 or Log Pow less than 3). Potential for mobility in soil is very high (Koc between 0 and 50).

DEGRADATION & PERSISTENCE: Based on information for propylene

(Continued on page 8 , over)
(R) Indicates a Trademark of The Dow Chemical Company

PAGE: 8

Product: AEROTHENE (R) MM SOLVENT

Product Code: 06347

Effective Date: 09/01/95

Date Printed: 09/21/95

MSD: 000551

oxide. Biodegradation under aerobic static laboratory conditions is high (80020 or B0028/Th00 greater than 40%). Degradation is expected in the atmospheric environment within days to weeks. Chemical degradation (hydrolysis) is expected in the environment within days to weeks. Based on information for methylene chloride. Biodegradation may occur under both aerobic and anaerobic conditions (in either the presence or absence of oxygen).

ECOTOXICOLOGY: Based largely or completely on component information. Material is slightly toxic to aquatic organisms on an acute basis (LC50 between 10 and 100 mg/L in most sensitive species).

# 13. DISPOSAL CONSIDERATIONS (See Section 15 for Regulatory Information)

DISPOSAL: DO NOT DUMP INTO ANY SEWERS, ON THE GROUND, OR INTO ANY BODY OF WATER. All disposal methods must be in compliance with all Federal, State/Provincial and local laws and regulations. Regulations may vary in different locations. Waste characterizations and compliance with applicable laws are the responsibility solely of the waste generator. THE DOW CHEMICAL COMPANY HAS NO CONTROL OVER THE HANAGEMENT PRACTICES OR MANUFACTURING PROCESSES OF PARTIES HANDLING OR USING THIS MATERIAL. THE INFORMATION PRESENTED HERE PERTAINS ONLY TO THE PRODUCT AS SHIPPED IN ITS INTENDED CONDITION AS DESCRIBED IN MSDS SECTION 2 (Composition/Information On Ingredients).

FOR UNUSED & UNCONTAMINATED PRODUCT, the preferred options include sending to a licensed, permitted recycler, reclaimer, incinerator or other thermal destruction device.

For additional information, refer to Dow Technical Bulletin discussing considerations for this product. Bulk Lit No 100-06170.

As a service to its customers, Dow can provide lists of companies which recycle, reprocess or manage chemicals or plastics, and companies that manage used drums. Telephone Dow's Customer Information Center at 800-258-2436 or 517-832-1556 for further details.

## 14. TRANSPORT INFORMATION

DEPARTMENT OF TRANSPORTATION (D.O.T.):

(Continued on page 9)
(R) Indicates a Trademark of The Dow Chemical Company

PAGE: 9

Product: AEROTHENE (R) MM SOLVENT

Product Code: 06347

Effective Date: 09/01/95

Date Printed: 09/21/95

MSD: 000551

For DOT regulatory information, if required, consult transportation regulations, product shipping papers or contact your Dow representative.

CANADIAN TDG INFORMATION For TDG regulatory infomation, if required, consult transportation regulations, product shipping papers or your Dow representative.

 REGULATORY INFORMATION (Not meant to be all-inclusive--selected regulations represented)

NOTICE: The information herein is presented in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied is given. Regulatory requirements are subject to change and may differ from one location to another; it is the buyer's responsibility to ensure that its activities comply with federal, state or provincial, and local laws. The following specific information is made for the purpose of complying with numerous federal, state or provincial, and local laws and regulations. See other sections for health and safety information.

# U.S. REGULATIONS

SARA 313 INFORMATION: This product contains the following substances subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372:

CHEMICAL NAME		CAS NUMBER	CONCENTRAT	ION
DICHLOROMETHANE PROPYLENE OXIDE	CHLORIDE)	000075-09-2 000075-56-9	99.5 0.5	 ሄ

SARA HAZARD CATEGORY: This product has been reviewed according to the EPA "Hazard Categories" promulgated under Sections 311 and 312 of the Superfund Amendment and Reauthorization Act of 1986 (SARA Title III) and is considered, under applicable definitions, to meet the following categories:

An immediate health hazard A delayed health hazard

CALIFORNIA PROPOSITION 65: The following statement is made in order to

(Continued on page 10) , over)
(R) Indicates a Trademark of The Dow Chemical Company

The state of the s

PAGE: 10

Product: AEROTHENE (R) MM SOLVENT

Product Code: 06347

Effective Date: 09/01/95 Date Printed: 09/21/95 MSD: 000551

# REGULATORY INFORMATION (CONTINUED)

comply with the California Safe Drinking Water and Toxic Enforcement Act of 1986:

This product contains a chemical(s) known to the State of California to cause cancer.

# TOXIC SUBSTANCES CONTROL ACT (TSCA):

All ingredients are on the TSCA inventory or are not required to be listed on the TSCA inventory.

STATE RIGHT-TO-KNOW: The following product components are cited on certain state lists as mentioned. Non-listed components may be shown in the composition section of the MSDS.

CAS NUMBER LIST

DICHLOROMETHANE (METHYLENE CHLORIDE)

O00075-09-2

NJ2 NJ3 PA1
PA2 PA3

NJ2=New Jersey Environmental Hazardous Substance (present at greater than or equal to 1.0%).

NJ3=New Jersey Workplace Hazardous Substance (present at greater than or equal to 1.0%).

PAl=Pennsylvania Hazardous Substance (present at greater than or equal to 1.0%).

PA2=Pennsylvania Special Hazardous Substance (present at greater than or equal to 0.01%).

PA3=Pennsylvania Environmental Hazardous Substance (present at greater than or equal to 1.0%).

# OSHA HAZARD COMMUNICATION STANDARD:

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

COMPREHENSIVE ENVIRONMENTAL RESPONSE COMPENSATION AND LIABILITY ACT

(Continued on page 11) (R) Indicates a Trademark of The Dow Chemical Company

-----

SAFETY DATA SHEET MATERIAL

PAGE: 11

Product: AEROTHENE (R) MM SOLVENT

Product Code: 06347

Effective Date: 09/01/95

Date Printed: 09/21/95

MSD: 000551

### REGULATORY INFORMATION (CONTINUED)

(CERCLA, or SUPERFUND):

This product contains the following substance(s) listed as "Hazardous Substances" under CERCLA which may require reporting of releases:

Category: Chemical Name

CAS#

RO

% in Product

Methylene Chloride

000075-09-2

1000 lbs

99.5%

#### CANADIAN REGULATIONS \*\*\*\*\*\*\*\*\*\*\*\*\*\*

WHMIS INFORMATION: The Canadian Workplace Hazardous Materials Information System (WHMIS) Classification for this product is:

D18 - poisonous substance defined by TOG regulations

D2A - possible, probable or known human carcinogen according to classifications by IARC or ACGIH

D28 - eye or skin irritant

Refer elsewhere in the MSDS for specific warnings and safe handling information. Refer to the employer's workplace education program.

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

HAZARDOUS PRODUCTS ACT INFORMATION: This product contains the following ingredients which are Controlled Products and/or on the Ingredient Disclosure List (Canadian HPA section 13 and 14): COMPONENTS: CAS # AMOUNT (%w/w)

Methylene chloride

CAS# 000075-09-2

99.5%

#### 16. OTHER INFORMATION

HAZARD RATING SYSTEM:

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) RATINGS:

Health

Flammability

Reactivity

0

(Continued on page 12) , over)

(R) Indicates a Trademark of The Dow Chemical Company

PAGE: 12

Product: AEROTHENE (R) MM SOLVENT Product Code: 06347

Effective Date: 09/01/95

Date Printed: 09/21/95

MSD: 000551

Process water in contact with solvent and/or water separators of cleaning or distillation equipment should be treated as hazardous waste. Do not discharge water from water separators to drain.

Dow does NOT recommend the use of this product in applications where:

- soil or ground water contamination is likely (direct applications to the ground, sink drains, sewers, or septic tanks).
- where over exposure is likely (small rooms or confined space, or where there would be inadequate ventilation).
- where skin contact is likely (adhesive tape removal from skin or as hand cleaner to remove oils and greases).
- where there is direct food contact.
- where vapor concentrations would be in the flammable range.
- where disposal of waste would pose an environmental or health risk.
- where chemical reactivity poses a danger (contact with strong alkali, or in areas where welding is done).

For more Storage and Handling information refer to bulletin "100-06170".

The Consumer Products Safety Commission has issued a Statement of Policy for household products containing methylene chloride. The policy statement established labeling guidelines for consumer products containing methylene chloride (including paint strippers, wood stains and varnishes, spray paints, adhesives and glues, and a number of other household products). The policy requires labels to include statements of principal hazard and indicate that the risk to the user is related to the level and duration of exposure. It appeared in the Federal Register, Vol. 52, No. 177, on Monday, September 14, 1987.

MSDS STATUS: Revised all sections but 1,8 2.

(R) Indicates a Trademark of The Dow Chemical Company The Information Herein Is Given In Good Faith, But No Warranty, Express Or Implied, Is Made. Consult The Dow Chemical Company For Further Information.



The Dow Chemical Company Midland, Michigan 48674

# Material Safety Data Sheet

1. CHEMICAL PRODUCT & COMPANY IDENTIFICATION

Page: 1

24-Hour Emergency Phone Number: 517-636-4400

Product: PERCHLOROETHYLENE INDUSTRIAL

Product Code: 59009

Effective Date: 10/06/95

Date Printed: 10/12/95

MSD: 000190

The Dow Chemical Company, Midland, MI 48674

Customer Information Center: 800-258-2436

### 2. COMPOSITION/INFORMATION ON INGREDIENTS

Tetrachloroethylene

CAS# 000127-18-4 99.9%

#### 3. HAZARDS IDENTIFICATION

#### EMERGENCY OVERVIEW

## POTENTIAL HEALTH EFFECTS (See Section 11 for toxicological data.)

EYE: May cause pain. May cause slight transient (temporary) eye irritation. Vapors may irritate the eyes at about 100 ppm perchloroethylene.

SKIN: Short single exposure not likely to cause significant skin irritation. Prolonged or repeated exposure may cause skin irritation, even a burn. Repeated contact may cause drying or flaking of skin. A single prolonged exposure is not likely to result in the material being absorbed through skin in harmful amounts.

INGESTION: Single dose oral toxicity is low. Small amounts swallowed incidental to normal handling operations are not likely to cause injury; swallowing amounts larger than that may

(Continued on page 2 , over) (R) Indicates a Trademark of The Dow Chemical Company

PAGE: 2

Product: PERCHLOROETHYLENE INDUSTRIAL

Product Code: 59009

Effective Date: 10/06/95

Date Printed: 10/12/95

MSD: 000190

cause injury. If aspirated (liquid enters the lung), may be rapidly absorbed through the lungs and result in injury to other body systems.

INHALATION: In confined or poorly ventilated areas vapors can readily accumulate and can cause unconsciousness and death. Dizziness may occur at 200 ppm; progressively higher levels may also cause nasal irritation, nausea, incoordination, drunkeness; and over 1000 ppm, unconsciousness and death. A single brief (minutes) inhalation exposure to levels above 6000 ppm may be immediately fatal. Based on structural analogy and/or equivocal data in animals, excessive exposure may potentially increase sensitivity to epinephrine and increase myocardial irritability (irregular heartbeats). Alcohol consumed before or after exposure may increase adverse effects.

SYSTEMIC (OTHER TARGET ORGAN) EFFECTS: Signs and symptoms of excessive exposure may be central nervous system effects and anesthetic or narcotic effects. Observations in animals include liver and kidney effects.

CANCER INFORMATION: For hazard communication purposes under OSHA Standard 29 CFR Part 1910.1200, this chemical is listed as a potential carcinogen by IARC and NTP. Perchloroethylene has been shown to increase the rate of spontaneously occurring malignant tumors in certain laboratory rats and mice. Other long-term inhalation studies in rats failed to show tumorigenic response. Epidemiology studies are limited and have not established an association between perchloroethylene exposure and cancer. Perchloroethylene is not believed to pose a measureable carcinogenic risk to man when handled as recommended.

TERATOLOGY (BIRTH DEFECTS): Birth defects are unlikely.
Exposures having no effect on the mother should have no effect
on the fetus. Did not cause birth defects in animals; other
effects were seen in the fetus only at doses which caused toxic
effects to the mother.

#### 4. FIRST AID

EYES: Flush eyes with plenty of water.

SKIN: Wash off in flowing water or shower.

INGESTION: Do not induce vomiting. Call a physician and/or

(Continued on page 3)
(R) Indicates a Trademark of The Dow Chemical Company

PAGE: 3

Product: PERCHLOROETHYLENE INDUSTRIAL

Product Code: 59009

Effective Date: 10/06/95 Date

Date Printed: 10/12/95

MSD: 000190

transport to emergency facility immediately.

INHALATION: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, oxygen should be administered by qualified personnel. Call a physician or transport to a medical facility.

NOTE TO PHYSICIAN: Because rapid absorption may occur through lungs if aspirated and cause systemic effects, the decision of whether to induce vomiting or not should be made by a physician. If lavage is performed, suggest endotracheal and/or esophageal control. Danger from lung aspiration must be weighed against toxicity when considering emptying the stomach. If burn is present, treat as any thermal burn, after decontamination. Exposure may increase "myocardial irritability". Do not administer sympathomimetic drugs unless absolutely necessary. No specific antidote. Supportive care. Treatment based on judgment of the physician in response to reactions of the patient.

#### 5. FIRE FIGHTING MEASURES

FLAMMABLE PROPERTIES
FLASH POINT: None
METHOD USED: TCC, TOC, COC
AUTOIGNITION TEMPERATURE: None available.

FLAMMABLE LIMITS LFL: None. UFL: None.

HAZARDOUS COMBUSTION PRODUCTS: Hazardous combustion products may include and are limited to hydrogen chloride. Hazardous combustion products may include trace amounts of phosgene, chlorine.

OTHER FLAMMABILITY INFORMATION: This material does not burn. Container may vent and/or rupture due to fire. Vapors are heavier than air and may travel a long distance and accumulate in low lying ares. Violent steam generation or eruption may occur upon application of direct water stream.

EXTINGUISHING MEDIA: This material does not burn. If exposed to fire from another source, use suitable extinguishing agent for that fire.

(Continued on page 4 , over)
(R) Indicates a Trademark of The Dow Chemical Company

PAGE: 4

Product: PERCHLOROETHYLENE INDUSTRIAL

Product Code: 59009

Effective Date: 10/06/95

Date Printed: 10/12/95

MSD: 000190

MEDIA TO BE AVOIDED: Do not use direct water stream.

FIRE FIGHTING INSTRUCTIONS: Keep people away. Isolate fire area and deny unnecessary entry. Contain fire run-off if possible. Fire water run-off, if not contained may cause environmental damage. Do not use direct water stream. This material does not burn. Fight fire for other material that is burning.

PROTECTIVE EQUIPMENT FOR FIRE FIGHTERS: Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, pants, boots, and gloves. If protection equipment is not available or not used, fight fire from a protected location or safe distance. For protection equipment in post-fire or non-fire clean up situations, refer to the relevant sections.

#### ACCIDENTAL RELEASE MEASURES (See Section 15 for Regulatory Information)

PROTECT PEOPLE: Clear all personnel from area. Do not breathe vapors. Ventilate area of leak or spill. Wear protective equipment including positive pressure self contained or air supplied breathing apparatus. Follow confined space entry procedures: ASTM D-4276 and OSHA (29 CFR 1910.146).

PROTECT ENVIRONMENT: Contain liquid to prevent contamination of soil, surface water or ground water. Material is heavier than water and has limited water solubility. It will collect on the lowest surface.

CLEANUP: For large spills: contain liquid; transfer to properly labeled closed metal containers. For small spills: mop or soak up immediately. Place in properly labeled metal containers.

#### 7. HANDLING AND STORAGE

HANDLING: To avoid uncontrolled emissions vent vapor from container to storage tank. Do not eat, drink, or smoke in working area. Refer to Exposure Controls/Personal Protection, Section 8, of the MSDS. Containers, even those that have been emptied, can contain vapors. Do not cut, drill, grind, weld, or perform similar operations on or near empty containers. Vapors of this product are heavier than air and will collect in low areas such as pits, degreasers, storage tanks, and other confined areas. Do not enter these areas where vapors of this

(Continued on page 5)
(R) Indicates a Trademark of The Dow Chemical Company

#### SAFETY DATA SHFFT MATERIAL

PAGE: 5

Product: PERCHLOROETHYLENE INDUSTRIAL

Product Code: 59009

Effective Date: 10/06/95 Date Printed: 10/12/95

MSD: 000190

product are suspected unless special breathing apparatus is used and an observer is present for assistance.

STORAGE: Keep containers tightly closed when not in use. For more Storage and Handling information refer to bulletin #100-06170. Store in a dry place. Do not store in aluminum, zinc, aluminum alloys and plastics. Product should not be packaged in aluminum aerosol cans or with finely divided aluminum or its alloys in an aerosol can. Product is denser than water. Design storage containers appropriately.

# 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS: Provide general and/or local exhaust ventilation to control airborne levels below the exposure quidelines. Lethal concentrations may exist in areas with poor ventilation.

PERSONAL PROTECTIVE EQUIPMENT EYE/FACE PROTECTION: Use safety glasses. If vapor exposure causes eye discomfort, use a full-face respirator.

SKIN PROTECTION: When prolonged or frequently repeated contact could occur, use protective clothing impervious to this material. Selection of specific items such as gloves, boots, apron, or full body suit will depend on operation.

RESPIRATORY PROTECTION: Atmospheric levels should be maintained below the exposure guideline. When respiratory protection is required, use an approved air-purifying or positive-pressure supplied-air respirator depending on the potential airborne concentration. For emergency and other conditions where the exposure guideline may be greatly exceeded, use an approved positive-pressure self-contained breathing apparatus or positive-pressure airline with auxiliary self-contained air supply. In confined or poorly ventilated areas, use an approved positive-pressure supplied-air respirator.

EXPOSURE GUIDELINE(S): Perchloroethylene (tetrachoroethylene): ACGIH TLV is 25 ppm TWA, 100 ppm STEL, A3. OSHA PEL is 25 ppm. PELs are in accord with those recommended by OSHA, as in the 1989 revision of PELs.

# 9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE: Colorless liquid.

(Continued on page 6 , over) (R) Indicates a Trademark of The Dow Chemical Company

PAGE: 6

Product: PERCHLOROETHYLENE INDUSTRIAL Product Code: 59009

Effective Date: 10/06/95

Date Printed: 10/12/95

MSD: 000190

ODOR: Irritating odor

VAPOR PRESSURE: 13 mmHg @ 20C
VAPOR DENSITY: 5.76
BOILING POINT: 250F (121.1C)
SOLUBILITY IN WATER: 0.015 g/100g 25C

SPECIFIC GRAVITY: 1.619 @ 25/25C

#### 10. STABILITY AND REACTIVITY

CHEMICAL STABILITY: Stable under recommended storage conditions. See storage section.

CONDITIONS TO AVOID: Avoid direct sunlight or ultraviolet sources. Avoid open flames, welding arcs, or other high temperature sources which induce thermal decomposition. High energy sources such as welding arcs can cause degradation generating chlorine, hydrogen chloride and possible phosgene, and should be avoided.

INCOMPATIBILITY WITH OTHER MATERIALS: Avoid contact with metals such as: aluminim powders, magnesium powders, potassium, sodium, and zinc powder. Avoid unintended contact with amines. Avoid contact with strong based and strong oxidizers. Avoid prolonged contact with or storage in aluminum or its alloys.

HAZARDOUS DECOMPOSITION PRODUCTS: Hazardous decomposition products may include and are not limited to hydrogen chloride and trace amounts of chlorine and phosgene.

HAZARDOUS POLYMERIZATION: Will not occur.

11. TOXICOLOGICAL INFORMATION (See Section 3 for Potential Health Effects. For detailed toxicological data, write or call the address or non-emergency number shown in Section 1)

SKIN: The LO50 for skin absorption in rabbits is > 10 g/kg.

INGESTION: The oral LD50 for rats is > 5000 mg/kg.

MUTAGENICITY (EFFECTS ON GENETIC MATERIAL): In vitro mutagenicity studies were negative.

12. ECOLOGICAL INFORMATION (For detailed Ecological data, write or call the address or non-emergency number shown in Section 1)

ENVIRONMENTAL FATE

(Continued on page 7) (R) Indicates a Trademark of The Dow Chemical Company

PAGE: 7

Product: PERCHLOROETHYLENE INDUSTRIAL

Product Code: 59009

Effective Date: 10/06/95 Date Printed: 10/12/95 MSD: 000190

MOVEMENT & PARTITIONING: Bioconcentration potential is low (BCF less than 100 or Log Pow less than 3). Bioconcentration factor (BCF) is 49 in the bluegill. Bioconcentration factor (BCF) is 38.9 in the trout. Log octanol/water partition coefficient (log Pow) is 3.4. Potential for mobility in soil is medium (Koc between 150 and 500). Log soil organic carbon partition coefficient (log Koc) is estimated to be 2.1-3.2. Henry's Law Constant (H) is 1.49E-02 atm-m3/mol. Log air/water partition coefficient (log Kaw) is estimated to be -0.30 tp 0.37.

DEGRADATION & PERSISTENCE: Biodegradation under aerobic conditions is below detectable limits. Theoetical oxygen demand (ThOD) is calculated to be 0.19 p/p. Biodegradation may occur under anaerobic conditions (in the absence of oxygen). Degradation is expected in the atmospheric environment within days to weeks. Biodegradation rate may increase in soil and/or water with acclimation.

ECOTOXICOLOGY: Material is moderately toxic to aquatic organisms on an acute basis (LC50 between 1 and 10 mg/L·in most sensitive species). Acute LC50 for Japanese medaka or rice fish (Oryzias latipes) is 1.6 mg/L. Acute LC50 for water flea (Daphnia magna) is 3.2-123 mg/L. Acute LC50 for rainbow trout (Oncorhynchus mykiss) is 4.8-5.8 mg/L. Acute LC50 for sheepshead minnow (Cyprinodon variegatus) is 8.0-52.2 mg/L. Acute LC50 for American flagfish Jordenella floridae is 8.4-24 mg/L. Acute LC50 for bluegill (Lepomis macrochirus) is 13 mg/L. Acute LC50 for fathead minnow (Pimephales promelas) is 13.4-23-8 mg/L. Maximum acceptable toxicant concentration (MATC) is 3.1 mg/L in American flagfish.

# 13. DISPOSAL CONSIDERATIONS (See Section 15 for Regulatory Information)

DISPOSAL: DO NOT DUMP INTO ANY SEWERS, ON THE GROUND, OR INTO ANY BODY OF WATER. All disposal methods must be in compliance with all Federal, State/Provincial and local laws and regulations. Regulations may vary in different locations. Waste characterizations and compliance with applicable laws are the responsibility solely of the waste generator. THE DOW CHEMICAL COMPANY HAS NO CONTROL OVER THE MANAGEMENT PRACTICES OR MANUFACTURING PROCESSES OF PARTIES HANDLING OR USING THIS MATERIAL. THE INFORMATION PRESENTED HERE PERTAINS ONLY TO THE PRODUCT AS SHIPPED IN ITS INTENDED CONDITION AS DESCRIBED IN MSDS SECTION 2 (Composition/Information On Ingredients).

(Continued on page 8 , over)
(R) Indicates a Trademark of The Dow Chemical Company

PAGE: 8

Product: PERCHLOROETHYLENE INDUSTRIAL

Product Code: 59009

Effective Date: 10/06/95 Date Printed: 10/12/95 MSD: 000190

FOR UNUSED & UNCONTAMINATED PRODUCT, the preferred options include sending to a licensed, permitted recycler, reclaimer, incinerator or other thermal destruction device.

For additional information, refer to Dow Technical Bulletin discussing considerations for this product. Bulk Lit No 100-06170.

As a service to its customers, Dow can provide lists of companies which recycle, reprocess or manage chemicals or plastics, and companies that manage used drums. Telephone Dow's Customer Information Center at 800-258-2436 or 517-832-1556 for further details.

#### 14. TRANSPORT INFORMATION

DEPARTMENT OF TRANSPORTATION (D.O.T.):

For DOT regulatory information, if required, consult transportation regulations, product shipping papers or contact your Dow representative.

CANADIAN TDG INFORMATION: for TDG regulatory information, if required, consult transportation regulations, product shipping papers, or your Dow representative.

### REGULATORY INFORMATION (Not meant to be all-inclusive--selected regulations represented)

NOTICE: The information herein is presented in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied is given. Regulatory requirements are subject to change and may differ from one location to another; it is the buyer's responsibility to ensure that its activities comply with federal, state or provincial, and local laws. The following specific information is made for the purpose of complying with numerous federal, state or provincial, and local laws and regulations. See other sections for health and safety information.

### U.S. REGULATIONS

SARA 313 INFORMATION: This product contains the following substances subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR

(Continued on page 9) (R) Indicates a Trademark of The Dow Chemical Company

PAGE: 9

Product: PERCHLOROETHYLENE INDUSTRIAL

Product Code: 59009

Effective Date: 10/06/95 Date Printed: 10/12/95 MSD: 000190

## REGULATORY INFORMATION (CONTINUED)

Part 372:

CHEMICAL NAME CAS NUMBER CONCENTRATION

PERCHLOROETHYLENE

000127-18-4 99.9

૪

SARA HAZARD CATEGORY: This product has been reviewed according to the EPA "Hazard Categories" promulgated under Sections 311 and 312 of the Superfund Amendment and Reauthorization Act of 1986 (SARA Title III) and is considered, under applicable definitions, to meet the following categories:

An immediate health hazard A delayed health hazard

CALIFORNIA PROPOSITION 65: The following statement is made in order to comply with the California Safe Orinking Water and Toxic Enforcement Act of 1986:

WARNING: This product contains a chemical known to the State of California to cause cancer.

#### TOXIC SUBSTANCES CONTROL ACT (TSCA):

All ingredients are on the TSCA inventory or are not required to be listed on the TSCA inventory.

STATE RIGHT-TO-KNOW: The following product components are cited on certain state lists as mentioned. Non-listed components may be shown in the composition section of the MSDS.

CHEMICAL NAME

PERCHLOROETHYLENE

CAS NUMBER

CO0127-18-4

NJ1 NJ2 NJ3

PA1 PA2 PA3

(Continued on page 10) , over)
(R) Indicates a Trademark of The Dow Chemical Company

PAGE: 10

Product: PERCHLOROETHYLENE INDUSTRIAL

Product Code: 59009

Effective Date: 10/06/95

Date Printed: 10/12/95

MSD: 000190

#### REGULATORY INFORMATION (CONTINUED)

NJI=New Jersey Special Health Hazard Substance (present at greater than or equal to 0.1%).

NJ2=New Jersey Environmental Hazardous Substance (present at greater than or equal to 1.0%).

NJ3=New Jersey Workplace Hazardous Substance (present at greater than or equal to 1.0%).

PAl=Pennsylvania Hazardous Substance (present at greater than or equal to 1.0%).

PA2=Pennsylvania Special Hazardous Substance (present at greater than or equal to 0.01%).

PA3=Pennsylvania Environmental Hazardous Substance (present at greater than or equal to 1.0%).

#### OSHA HAZARD COMMUNICATION STANDARD:

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

COMPREHENSIVE ENVIRONMENTAL RESPONSE COMPENSATION AND LIABILITY ACT (CERCLA, or SUPERFUND):

This product contains the following substance(s) listed as "Hazardous Substances" under CERCLA which may require reporting of releases: Category:

Chemical Name CAS# RQ % in Product
Perchloroethylene 000127-18-4 100 99.9

# CANADIAN REGULATIONS

WHMIS INFORMATION: The Canadian Workplace Hazardous Materials Information System (WHMIS) Classification for this product is:

DIB - poisonous substance defined by TDG regulations

D2A - possible, probable or known human carcinogen according to classifications by IARC or ACGIH

D2B - eye or skin irritant

Refer elsewhere in the MSDS for specific warnings and safe handling information. Refer to the employer's

(Continued on page 11)
(R) Indicates a Trademark of The Dow Chemical Company

PAGE: 11

Product: PERCHLOROETHYLENE INDUSTRIAL

Product Code: 59009

Effective Date: 10/06/95

Date Printed: 10/12/95

MSD: 000190

# REGULATORY INFORMATION (CONTINUED)

workplace education program.

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

HAZARDOUS PRODUCTS ACT INFORMATION: This product contains the following ingredients which are Controlled Products and/or on the Ingredient Disclosure List (Canadian HPA section 13 and 14):

COMPONENTS:

CAS #

AMOUNT (%w/w)

Tetrachloroethylene

CAS# 000127-18-4

99.9%

# 16. OTHER INFORMATION

HAZARD RATING SYSTEM:

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) RATINGS:

Health 2 Flammability 0 Reactivity 0

## DISPOSAL OF CONTACT WATER:

Process water in contact with solvent and/or water separators of cleaning or distillation equipment should be treated as hazardous waste. Do not discharge water from water separators to drain.

#### GENERAL APPLICATION GUIDELINES:

Dow does NOT recommend the use of this product in applications where:

- soil or ground water contamination is likely (direct applications to the ground, sink drains, sewers, or septic tanks).
- where over exposure is likely (small rooms or confined space, or where there would be inadequate ventilation).
- where skin contact is likely (adhesive tape removal from skin or as hand cleaner to remove oils and greases).

- where there is direct food contact.

- where vapor concentrations would be in the flammable range.

adian karawa kasa daka daka barawa baraw

- where disposal of waste would pose an environmental or health risk.
- where chemical reactivity poses a danger (contact with strong

(Continued on page 12), over)
(R) Indicates a Trademark of The Dow Chemical Company

#### SHEET SAFETY

PAGE: 12

Product: PERCHLOROETHYLENE INDUSTRIAL Product Code: 59009

Effective Date: 10/06/95

Date Printed: 10/12/95

MSD: 000190

alkali, or in areas where welding is done).

MSDS STATUS: Revised sections 3, 5, 6, 7, 9, 10, 13, 14, and 15.

(R) Indicates a Trademark of The Dow Chemical Company
The Information Herein Is Given In Good Faith, But No Warranty, Express Or Implied, Is Made. Consult The Dow Chemical Company For Further Information.



ASHLAND CHEM\*CAL COMPANY Division of hland Inc. P.O. BOX 2219 COLUMBUS, OHIO 43216 (614) 790-3333

24-HOUR Emergency Telephone (800) 274-5263 or (800) ASHLAND

001422

TOLUENE

8181

Page:

THIS MSDS COMPLIES WITH 29 CFR 1910.1200 (THE HAZARD COMMUNICATION STANDARD)

TOLUENE 108-88-3

AMREP INCORPORATED 990 INCUSTRIAL PARK OR MARIETTA GA 30062

05 50 077 0282550-

Data Sheet No: 0000565-009.007 Prepared: 02/10/95 Supersedes: 02/03/95 Print Date: 08/05/95

PRODUCT: 3001850
INVOICE: 597042
INVOICE DATE: 08/01/95
TO: AMREP INCORPORATED
990 INDUSTRIAL PARK CRIVE
MARIETTA GA 30062

ATTN: PLANT MGR./SAFETY DIR.

SECTION I-PRODUCT IDENTIFICATION

General or Generic ID: AROMATIC HYDROCARBON

DOT Hazard Classification: 3 (FLAMMABLE LIQUID)

IF PRESENT, IARC, NTP AND OSHA CARCINGGENS AND OFEMICALS SUBJECT TO THE REPORTING REQUIREMENTS OF SARA TITLE 111 SECTION 313 ARE IDENTIFIED IN THIS SECTION.

SEE DEFINITION PAGE FOR CLARIFICATION

INGREDIENT

Percent

Note

TOLUENE CAS #: 108-88-3

100 100 PPM 50 PPM - SKIN

(1)

Notes:

( 1) THE RECOMMENDED PERMISSIBLE EXPOSURE LIMIT (PEL) INDICATED IN SECTION 2 REFLECT THE LEVEL REVISED BY 05th IN 1983. THE 1989 LEVEL HAS BEEN REPEALED BY THE 11TH CIRCUIT COURT OF APPEALS. IT IS RECOMMENDED THAT THE LOWER PEL IS OBSERVED TO ENSURE WORKER PROTECTION.

OSHA SHORT TERM EXPOSURE LIMIT (STEL) FOR TOLUENE IS 150 PPM. NIOSH RECOMMENDS A LIMIT OF 100 PPM, 8-HOUR TWA: 200 PPM 10-MINUTE CEILING.

THE ACCIH TUV COMMITTEE INDICATES THAT THIS MATERIAL OR ITS COMPONENT(S) CAN BE ABSORBED BY THE SKIN. THIS IS REPRESENTED IN THE TUV BOOK WITH A "SKIN" MUTATION.

THIS CHEMICAL IS SUBJECT TO THE REPORTING REQUIREMENTS OF SECTION 313 OF SARA TITLE III.

	SECTION II'I - PHYSIC	AL DATA	
Boiling Point	for PRODUCT	. 232 ( 111 0 760	.00 Deg F .11 Deg C) .00 mm Hg
Vapor Pressure	for PRODUCT	₽ 68	.00 mm Hg .00 Deg F .00 Deg C)
Specific Vapor Density	AIR = 1	3	. 20
Specific Gravity		9 60	.870 .00 Deg F .55 Deg C)
Percent Volatiles		100	.00%
Evaporation Rate	(N-BUTYL ACETATE = 1)	2	.00
ppearance		CLEAR, SAYBOLT CO	OR 30 MIN
State			LIQUID
Form	*		NEAT

SECTION IV-FIRE AND EXPLOSION INFORMATION

FLASH POINT (TCC

45.0 Deg F

7.2 Deg ()

(PRODUCT)

EXTINGUISHING MEDIA: REGULAR FOAM OR CARBON DIOXIDE OR DRY CHEMICAL

LOWER -UPPER - 7.0%

HAZARDOUS DECOMPOSITION PRODUCTS: MAY FORM:, CARBON DIOXIDE AND CARBON MONOXIDE, VARIOUS HYDROCARBONS, ETC.

FIREFIGHTING PROCEDURES: WEAR A SELF-CONTAINED BREATHING APPARATUS WITH A FULL FACEPIECE OPERATED IN THE POSITIVE PRESSURE DEMAND MODE WITH APPROPRIATE TURN-OUT GEAR AND DEMICAL RESISTANT PERSONAL PROTECTIVE EQUIPMENT. REFER TO THE PERSONAL PROTECTIVE EQUIPMENT SECTION OF THIS MSGS.

WATER MAY BE USED TO KEEP FIRE-EXPOSED CONTAINERS COOL UNTIL FIRE IS OUT.

SPECIAL FIRE & EXPLOSION HAZARDS: NEVER USE WELDING OR CUTTING TOROH ON OR NEAR CRUM (EVEN EMPTY) BECAUSE PRODUCT (EVEN JUST RESIDUE) CAN IGNITE EXPLOSIVELY.

ALL FIVE GALLON PAILS AND LARGER METAL CONTAINERS INCLUDING TANK CARS AND TANK TRUCKS SHOULD BE GROUNDED AND/OR BONDED WHEN MATERIAL IS TRANSFERRED.

VAPORS ARE HEAVIER THAN AIR AND MAY TRAVEL ALONG THE GROUND OR MAY BE MOVED BY VENTILATION AND IGNITED BY

CONTINUED ON PAGE: 2



PPM - SKIN

# ASHLAND CHEMICAL COMPANY Division of Ashl Inc. P.O. BOX 2219 COLUMBUS, OHIO 43216

(614) 790-3333

24-HOUR Emergency Telephone (800) 274-5263 or (800) ASHLAND

001422

TOLUENE

Page: 2

#### SECTION IV-FIRE AND EXPLOSION INFORMATION (Continued)

PILOT LIGHTS, OTHER FLAMES, SPARKS, HEATERS, SMOKING, ELECTRIC MOTORS, STATIC DISCHARGE, OR OTHER IGNITION SOURCES AT LOCATIONS DISTANT FROM MATERIAL HANDLING POINT.

SECTION V-HEALTH HAZARD DATA PERMISSIBLE EXPOSURE LEVEL 100 PPM

50

EFFECTS OF ACUTE OVEREXPOSURE:

THRESHOLD LIMIT VALUE

EFFECTS OF ACUTE OVEREXPOSURE;

EYES - EXPOSURE, CAUSES EYE IRRITATION. SYMPTOMS MAY INCLUDE STINGING. TEARING, RECNESS, AND SWELLING.

SKIN - EXPOSURE MAY CAUSE MILD SKIN IRRITATION. PROLONGED OR REPEATED EXPOSURE MAY DRY THE SKIN. SYMPTOMS MAY

INCLIDE RECNESS, BURNING DRYING AND CRACKING, AND SKIN BURNS. PRE-EXISTING SKIN DISORDERS MAY BE

SKIN AGGARATED BY EXPOSURE TO THIS MATERIAL.

BREATHING FOR THE STATE OF THE

EFFECTS-CONFUSION-IMPAIRED COORDINATION-COMA-AND DEATH
SMALLOWING - SINGLE DOSE ORAL TOXICITY IS LOW. SMALLOWING SMALL AMOUNTS DURING NORMAL HANDLING IS NOT LIKELY
TO CAUSE HARMFUL EFFECTS; SWALLOWING LARGE AMOUNTS MAY BE HARMFUL.

SYMPTOMS MAY INCLUDE:
-CASTROINTESTIMAL IRRITATION (NAUSEA, VOMITING, DIARROCA)-CENTRAL NERVOUS SYSTEM DEPRESSION (DIZZINESS, DROWSINESS, WEAKNESS, FATIGUE, NAUSEA, HEADAONE,
UNCONSCIOUSNESS) THE LINES CHEMIC SHALLOWING CANDILLING AND CHIEF LINES LINES AND AND COMES.

CAN ENTER THE LUNGS DURING SWALLOWING OR VOMITING AND CAUSE LUNG INFLAMMATION AND/OR DAMAGE.

FIRST AID:

IF ON SKIN: REMOVE CONTAMINATED CLOTHING. WASH EXPOSED AREA WITH SOAP AND WATER. IF SYMPTOMS PERSIST, SEEK MEDICAL ATTENTION. LAUNDER CLOTHING BEFORE REUSE.

IF IN EYES: IF SYMPTOMS DEVELOP, IMMEDIATELY MOVE INDIVIDUAL AWAY FROM EXPOSURE AND INTO FRESH AIR. FLUSH EYES GENTLY WITH WATER FOR AT LEAST 15 MINUTES WHILE HOLDING EYELIDS APART; SEEK IMMEDIATE MEDICAL ATTENTION.

SMALLOWED: DO NOT INDUCE VOMITING. THIS MATERIAL IS AN ASPIRATION HAZARD. IF INDIVIDUAL IS DROWSY OR UNCONSCIOUS, PLACE ON LEFT SIDE WITH THE HEAD DOWN. SEEK MEDICAL ATTENTION. IF POSSIBLE, DO NOT LEAVE INDIVIDUAL UNATTENDED.

IF BREATHED: IF SYMPTOMS DEVELOP. IMMEDIATELY MOVE INDIVIDUAL AWAY FROM EXPOSURE AND INTO FRESH AIR. SEEK IMMEDIATE MEDICAL ATTENTION: KEEP PERSON WARM AND QUIET. IF PERSON IS NOT BREATHING, BEGIN ARTIFICIAL RESPIRATION. IF BREATHING IS DIFFICULT, ADMINISTER OXYGEN.

NOTE TO PHYSICIAN:
IN-MALATION OF HIGH CONCENTRATIONS OF THIS MATERIAL, AS COULD OCCUR IN ENCLOSED SPACES OR CURING DELIBERATE
ABUSE, MAY BE ASSOCIATED WITH CARDIAC ARRIVITHMIAS. SYMPATHOMIMETIC DRUGS MAY INITIATE CARDIAC ARRIVITHMIAS
IN PERSONS EXPOSED TO THIS MATERIAL.

PRIMARY ROUTE(S) OF ENTRY:

IN-MLATION, SKIN CONTACT, EYE CONTACT, SKIN ABSORPTION

EFFECTS OF CHRONIC OVEREXPOSURE:

PROLONGED INTENTIONAL TOLUENE ABUSE MAY LEAD TO BRAIN DAMAGE CHARACTERIZED BY DISTURBANCES IN GAIT, PERSONALITY CHANGES AND LOSS OF MEMORY. COMPARABLE CENTRAL NERVOUS SYSTEM EFFECTS HAVE NOT BEEN SHOWN TO RESULT FROM OCCUPATIONAL EXPOSURE TO TOLUENE.

TOLUENE MAY BE HARMFUL TO THE HIMAN FETUS BASED ON POSITIVE TEST RESULTS WITH LABORATORY ANIMALS. CASE STUDIES REVEAL THAT PROLONGED INTENTIONAL ABUSE OF TOLUENE DURING PREGNANCY MAY CAUSE BIRTH DEFECTS IN HUMANS.

THIS MATERIAL IS NOT EXPECTED TO BE CARCINOGENIC IN HAMANS BASED ON NEGATIVE EVIDENCE OF CARCINOGENICITY IN LABORATORY ANIMALS.

THIS MATERIAL IS NOT LISTED AS A CARCINOGEN BY LARC, NTP OR OS-W.

OVEREXPOSURE TO THIS MATERIAL (OR ITS COMPONENTS) HAS BEEN SUGGESTED AS A CAUSE OF THE FOLLOWING EFFECTS IN LABORATORY ANIMALS, AND MAY AGGRAVATE PRE-EXISTING DISCRETS OF THESE ORGANS IN HUMANS: CENTRAL NERVOUS SYSTEM DAMAGE, EFFECTS ON HEARING, MILD, REVERSIBLE LIVER EFFECTS, CARDIAC SENSITIZATION, RESPIRATORY

OVEREXPOSURE TO THIS MATERIAL (OR ITS COMPONENTS) HAS BEEN SUGGESTED AS A CAUSE OF THE FOLLOWING EFFECTS IN HUMANS, AND MAY AGGRAVATE PRE-EXISTING DISORDERS OF THESE ORGANS:, KIONEY DAMAGE, CARDIAC SENSITIZATION



# ASPLAND CHEMICAL COMPANY Division of Shland Inc. P.O. BOX-2219 COLUMBUS, OHIO 43216 (614) 790-3333

24-HOUR Emergency Telephone (800) 274-5263 or (800) ASHLAND

001422

#### TOLUENE

Page:

#### SECTION VI-REACTIVITY DATA

HAZARDOUS POLYMERIZATION: CANNOT OCCUR

STABILITY: STABLE

INCOMPATIBILITY: AVOID CONTACT WITH:, STRONG OXIDIZING AGENTS, STRONG ACIDS

## SECTION VII-SPILL OR LEAK PROCEDURES

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

SMALL SPILL: ELIMINATE ALL SOURCES OF IGNITION SUCH AS FLARES, FLAMES (INCLUDING PILOT LIGHTS), AND ELECTRICAL SPARKS.

ABSORB LIQUID ON VERMICULITE, FLOOR ABSORBENT OR OTHER ABSORBENT MATERIAL.

LARGE SPILL: ELIMINATE ALL IGNITION SOURCES (FLARES, FLAMES INCLUDING PILOT LIGHTS, ELECTRICAL SPARKS). PERSONS
NOT MEARING PROTECTIVE EQUIPMENT SHOULD BE EXCLUDED FROM AREA OF SPILL UNTIL CLEAN-UP HAS BEEN COMPLETED.
STOP SPILL AT SOURCE. PREVENT FROM ENTERING DRAINS, SEWERS, STPEAMS OR OTHER BODIES OF WATER, PREVENT FROM
SPREADING. IF RUNDEF OCCURS, NOTIFY AUTHORITIES AS REQUIRED. PUMP OR VACUUM TRANSFER SPILLED PRODUCT TO
CLEAN CONTAINERS FOR RECOVERY. ABSORB UNRECOVERABLE PRODUCT, TRANSFER CONTAMINATED ABSORBENT, SOIL AND
OTHER MATERIALS TO CONTAINERS FOR DISPOSAL.

PREVENT RUN-OFF TO SEWERS, STREAMS OR OTHER BODIES OF WATER. IF RUN-OFF OCCURS, NOTIFY PROPER AUTHORITIES AS REQUIRED, THAT A SPILL HAS OCCURED.

WASTE DISPOSAL METHOO:

SMALL SPILL: DESTROY BY INCINERATION IN ACCORDANCE WITH APPLICABLE REGULATIONS.

LARGE SPILL: DESTROY BY INCINERATION IN ACCORDANCE WITH APPLICABLE REGULATIONS.

#### SECTION VIII-PROTECTIVE EQUIPMENT TO BE USED

RESPIRATORY PROTECTION: IF WORKPLACE EXPOSURE LIMIT(S) OF PRODUCT OR ANY COMPONENT IS EXCEEDED (SEE SECTION II), A NIDSH/MS-WA APPROVED AIR SUPPLIED RESPIRATOR IS ADVISED IN ABSENCE OF PROPER ENVIRONMENTAL CONTROL. 05-WA REGULATIONS ALSO PERMIT OTHER NIDSH/MS-WA RESPIRATORS (NEGATIVE PRESSURE TYPE) UNDER SPECIFIED CONDITIONS (SEE YOUR INDUSTRIAL HYGIENIST). ENGINEERING OR ADMINISTRATIVE CONTROLS SHOULD BE IMPLEMENTED TO REDUCE EXPOSURE.

VENTILATION: PROVIDE SUFFICIENT MECHANICAL (GENERAL AND/OR LOCAL EXHAUST) VENTILATION TO MAINTAIN EXPOSURE BELOW TLV(S).

EXPLOSION - PROOF VENTILATION SYSTEM IS ACCEPTABLE.

PROTECTIVE GLOVES: WEAR RESISTANT GLOVES SUCH AS:, POLYVINYL ALCOHOL, YOUR LOCAL SAFETY EQUIPMENT AND PROTECTIVE CLOTHING SUPPLIER CAN PROVIDE ALTERNATIVE GLOVE RECOMMENDATIONS FOR YOUR SPECIFIC APPLICATIONS.

EYE PROTECTION: OHEMICAL SPLASH GOGGLES IN COMPLIANCE WITH 05th REGULATIONS ARE ADVISED: HOWEVER, OSHA REGULATIONS ALSO PERMIT OTHER TYPE SAFETY GLASSES. CONSULT YOUR SAFETY REPRESENTATIVE.

OTHER PROTECTIVE EQUIPMENT: TO PREVENT REPEATED OR PROLONGED SKIN CONTACT, WEAR IMPERVIOUS CLOTHING AND BOOTS.

# SECTION IX-SPECIAL PRECAUTIONS OR OTHER COMMENTS

CONTAINERS OF THIS MATERIAL MAY BE HAZARDOUS WHEN EMPTIED. SINCE EMPTIED CONTAINERS RETAIN PRODUCT RESIDUES (VAPOR, LIQUID, AND/OR SOLID), ALL HAZARD PRECAUTIONS GIVEN IN THE DATA SHEET MUST BE OBSERVED.

HYDROCARBON SOLVENTS ARE BASICALLY NON-CONDUCTORS OF ELECTRICITY AND CAN BECOME ELECTROSTATICALLY CHARGED DURING MIXING, FILTERING OR PUMPING AT HIGH FLOW RATES. IF THIS CHARGE REACHES A SUFFICIENTLY HIGH LEVEL, SPARKS CAN FORM THAT MAY IGNITE THE VAPORS OF FLAMMABLE LIQUIDS.

WARNING!!! SUDDEN RELEASE OF HOT ORGANIC CHEMICAL VAPORS OR MISTS FROM PROCESS EQUIPMENT OPERATING AT ELEVATED TEMPERATURE AND PRESSURE, OR SUDDEN INCRESS OF AIR INTO VACUUM EQUIPMENT, MAY RESULT IN IGNITIONS WITHOUT THE PRESENCE OF DOBYIOUS IGNITION SOURCES, PUBLISHED "AUTOIGNITION" OR "IGNITION" TEMPERATURE VALUES CANNOT BE TREATED AS SAFE OPERATING TEMPERATURES IN OFEMICAL PROCESSES WITHOUT ANALYSIS OF THE ACTUAL PROCESS CONDITIONS. ANY USE OF THIS PRODUCT IN ELEVATED TEMPERATURE PROCESSES SHOULD BE THOROUGHLY EVALUATED TO ESTABLISH AND MAINTAIN SAFE OPERATING CONDITIONS.

THE INFORMATION ACCUMULATED HEREIN IS BELIEVED TO BE ACCURATE BUT IS NOT WARRANTED TO BE WETHER ORIGINATING MITH THE COMPANY OR NOT, RECIPIENTS ARE ADVISED TO CONFIRM IN ADVANCE OF NEED THAT THE INFORMATION IS CURRENT, APPLICABLE, AND SUITABLE TO THEIR CIRCUMSTANCES.



# ASHLAND CHEMICAJ COMPANY Division of Ashi d Inc. P.O. BOX 2219 COLUMBUS, OHIO 43216 ( (614) 790-3333 (

Y 24-HOUR Emergency Telephone (800) 274-5263 or (800) ASHLAND

#### DEFINITIONS

This definition page is intended for use with Material Safety Data Sheets supplied by the Ashland Chemical Company. Recipients of these data sheets should consult the OSHA Safety and Health Standards (29 CFR 1910), particularly subpart G - Occupational Health and Environmental Control, and subpart I - Personal Protective Equipment, for general guidance on control of potential Occupational Health and Safety Hazards.

#### SECTION I PRODUCT IDENTIFICATION

GENERAL OR GENERIC ID: Chemical family or product description.

DOT HAZARD CLASSIFICATION: Product meets DOT criteria for hazards listed.

# SECTION II

Components are listed in this section if they present a physical or health hazard and are present at or above 1% in the mixture. If a component is identified as a CARCINOGEN by NTP, IARC, or OSHA as of the date on the MSDS, it will be listed and footnoted in this section when present at or above 0.1% in the product. Negative conclusions concerning carcinogenicity are not reported. Additional health information may be found in Section V. Components subject to the reporting requirements of Section 313 of SARA Title III are identified in the footnotes in this section, along with typical percentages. Other components may be listed if deemed appropriate.

Exposure recommendations are for components. OSHA Permissible Exposure Limits (PELS) and American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Values (TLVs) appear on the line with the component identification. Other recommendations appear as footnotes.

# SECTION III PHYSICAL DATA

BOILING POINT: Of product if known. The lowest value of the components is listed for mixtures.

VAPOR PRESSURE: Of product if known. The highest value of the components is listed for mixtures.

SPECIFIC VAPOR DENSITY: Compared to AIR = 1, If the Specific Vapor Density of a product is not known, the value is expressed as lighter or greater than air.

SPECIFIC GRAVITY: Compared to WATER = 1. If Specific Gravity of product is not known, the value is expressed as less than or greater than water.

pH: If applicable.

PERCENT VOLATILES: Percentage of material with initial boiling point below 425 degrees Fahrenheit and vapor pressure above 0.1mm Hg at 68 F.

EVAPORATION RATE: Indicated as faster or slower than ETHYL ETHER, unless otherwise stated

#### SECTION IV FIRE AND EXPLOSION DATA

FLASH POINT: Method identified.

EXPLOSION LIMITS: For product if known. The lowset value of the components is listed for mixtures.

HAZARDOUS DECOMPOSITION PRODUCTS: Known or expected hazardous products resulting from heating, burning or other reactions.

#### SECTION IV (cont.)

EXTINGUISHING MEDIA: Following National Fire Protection Association criteria.

FIREFIGHTING PROCEDURES: Minimum equipment to protect firefighters from toxic products of vaporization, combustion or decomposition in fire situations. Other firefighting hazards may also be indicated.

SPECIAL FIRE AND EXPLOSION HAZARDS: States hazards not covered by other sections.

NFPA CODES: Hazard ratings assigned by the National Fire Protection Association.

#### SECTION V

#### HEALTH HAZARD DATA

PERMISSIBLE EXPOSURE LIMIT: For product.

THRESHOLD LIMIT VALUE: For product

EFFECTS OF ACUTE OVEREXPOSURE: Potential local and systemic effects due to single or short term overexposure to the eyes and skin or through inhalation or ingestion.

EFFECTS OF CHRONIC OVEREXPOSURE: Potential local and systemic effects due to repeated or long term overexposure to the eyes and skin or through inhalation or indestion.

FIRST AID: Procedures to be followed when dealing with accidental overexposure.

PRIMARY ROUTE OF ENTRY: Based on properties and expected use.

#### SECTION VI REACTIVITY DATA

HAZARDOUS POLYMERIZATION: Conditions to avoid to prevent hazardous polymerization resulting in a large release of energy.

STABILITY: Conditions to avoid to prevent hazardous or violent decomposition.

INCOMPATIBILITY: Materials and conditions to avoid to prevent hazardous reactions.

# SPILL OR LEAK PROCEDURES

Reasonable precautions to be taken and methods of containment, clean-up and disposal. Consult federal, state and local regulations for accepted procedures and any reporting or notification requirements.

# SECTION VIII PROTECTIVE EQUIPMENT TO BE USED

Protective equipment which may be needed when handling the product.

#### SECTION IX

#### SPECIAL PRECAUTIONS OR OTHER COMMENTS .

Covers any relevant points not previously mentioned.

#### ADDITIONAL COMMENTS

Containers should be either reconditioned by CERTIFIED firms or properly disposed of by APPROVED firms. Disposal of containers should be in accordance with applicable laws and regulations. "EMPTY" drums should not be given to individuals. Serious accidents have resulted from the misuse of "EMPTIED" containers (drums,pails,etc.). Refer to Sections IV and IX.