Safety Data Sheet
The Dow Chemical Company

Product Name: MECTHENE* PU

Revision Date: 2011/04/14
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The Dow Chemical Company encourages and expects you to read and understand the entire (M)SDS, as there is important information throughout the document. We expect you to follow the precautions identified in this document unless your use conditions would necessitate other appropriate methods or actions.

Section 1. Identification of the substance/preparation and of the company/undertaking

1.1 Product identifiers

Product Name
MECTHENE* PU

Chemical Name: Dichloromethane; methylene chloride
CAS-No. 75-09-2
EC-No. 200-838-9
REACH Registration Number
01-2119480404-41-0001

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses
Manufacture of the substance or use as a process chemical or extraction agent. Includes recycling/ recovery, material transfers, storage, maintenance and loading (including marine vessel/barge, road/rail car and bulk container), sampling and associated laboratory activities For industrial use. Use as laboratory reagent Distribution of substance, industrial. Use in adhesives, industrial. Industrial solvent. Use as intermediate for manufacturing other substances and formulating, repackaging & distribution. Coatings and paints, thinners, paint removers Mold release agent. Use of blowing agents in manufacture of foam Heat transfer fluid. Coatings and paints, thinners, paint removers professional use Professional uses: Adhesives and/or sealants Use in Cleaning Agents, professional. Formulating, Repackaging & Distribution. Use in laboratories, professional. Use in adhesives and sealants, consumer. End use insecticide product Use in paints and coatings (water based), consumer.

1.3 Details of the supplier of the safety data sheet

COMPANY IDENTIFICATION
The Dow Chemical Company
2030 Willard H. Dow Center
48674 Midland, MI
USA

Customer Information Number: 800-258-2436
SDSQuestion@dow.com

1.4 EMERGENCY TELEPHONE NUMBER

24-Hour Emergency Contact: 989-636-4400
Local Emergency Contact: 00 31 115 69 4982

Section 2. Hazards Identification

2.1 Classification of the substance or mixture

Classification - REGULATION (EC) No 1272/2008

Eye irritation	Category 2	H319	Causes serious eye irritation.
Skin irritation	Category 2	H315	Causes skin irritation.
Carcinogenicity	Category 2	H351	Suspected of causing cancer.
Specific target organ toxicity - single exposure (Inhalation) (Narcotic effects.)	Category 3	H336	May cause drowsiness or dizziness.
Specific target organ toxicity - single exposure (Inhalation) (Respiratory tract irritant.)	Category 3	H335	May cause respiratory irritation.
Specific target organ toxicity - repeated exposure (Oral) (Inhalation)	Category 2	H373	May cause damage to organs through prolonged or repeated exposure.

Classification according to EU Directives 67/548/EEC or 1999/45/EC

Xn	Carcinogen category 3.	R40	Limited evidence of a carcinogenic effect.
		R36/37/38	Irritating to eyes, respiratory system and skin.
		R67	Vapours may cause drowsiness and dizziness.

2.2 Label elements

Labelling - REGULATION (EC) No 1272/2008

Hazard pictograms

Signal Word: Warning

Hazard statements:

H315 Causes skin irritation.
H319 Causes serious eye irritation.
H335 May cause respiratory irritation.
H336 May cause drowsiness or dizziness.
H351 Suspected of causing cancer.
H373 May cause damage to organs through prolonged or repeated exposure.

Precautionary Statements:

P202 Do not handle until all safety precautions have been read and understood.
P260 Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
P308 + P313 IF exposed or concerned: Get medical advice/ attention.

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P405 Store locked up.
P403 + P235 Store in a well-ventilated place. Keep cool.
P502 Refer to manufacturer/ supplier for information on recovery/ recycling.

2.3 Other Hazards
No information available.

Section 3. Composition/information on ingredients

3.1 Substance
This product is a substance.

CAS-No. / EC-No. / Index	REACH No.	Amount	Component	Classification: REGULATION (EC) No 1272/2008
CAS-No. 75-09-2 **EC-No.** 200-838-9 **Index** 602-004-00-3	01-2119480404-41	97.6 %	Dichloromethane; methylene chloride	Carc., 2, H351 Skin Irrit., 2, H315 Eye Irrit., 2, H319 STOT SE, 3, H335 STOT RE, 2, H373 STOT SE, 3, H336
CAS-No. 106-88-7 **EC-No.** 203-438-2 **Index** 603-102-00-9	—	0.4 %	1,2-Epoxybutane (butylene oxide)	Flam. Liq., 2, H225 Carc., 2, H351 Acute Tox., 4, H332 Acute Tox., 4, H312 Acute Tox., 4, H302 Eye Irrit., 2, H319 STOT SE, 3, H335 Skin Irrit., 2, H315 Aquatic Chronic, 3, H412

CAS-No. / EC-No. / Index	Amount	Component	Classification: 67/548/EEC
CAS-No. 75-09-2 **EC-No.** 200-838-9 **Index** 602-004-00-3	97.6 %	Dichloromethane; methylene chloride	Carc. 3: R40; Xi: R36/37/38; R67
CAS-No. 106-88-7 **EC-No.** 203-438-2 **Index** 603-102-00-9	0.4 %	1,2-Epoxybutane (butylene oxide)	F: R11; Carc. 3: R40; Xn: R20/21/22; Xi: R36/37/38; R52, R53

For the full text of the H-Statements mentioned in this Section, see Section 16.
See Section 16 for full text of R-phrases.

Section 4. First-aid measures

4.1 Description of first aid measures

General advice: First Aid responders should pay attention to self-protection and use the recommended protective clothing (chemical resistant gloves, splash protection). If potential for exposure exists refer to Section 8 for specific personal protective equipment.
Inhalation: Move person to fresh air. If not breathing, give artificial respiration; if by mouth to mouth use rescuer protection (pocket mask, etc). If breathing is difficult, oxygen should be administered by qualified personnel. Call a physician or transport to a medical facility.
Skin Contact: Wash skin with plenty of water. Safety shower should be located in immediate work area.
Eye Contact: Immediately flush eyes with water; remove contact lenses, if present, after the first 5 minutes, then continue flushing eyes for at least 15 minutes. Obtain medical attention without delay, preferably from an ophthalmologist. Suitable emergency eye wash facility should be immediately available.
Ingestion: Do not induce vomiting. Call a physician and/or transport to emergency facility immediately.

4.2 Most important symptoms and effects, both acute and delayed

Aside from the information found under Description of first aid measures (above) and Indication of immediate medical attention and special treatment needed (below), no additional symptoms and effects are anticipated.

4.3 Indication of immediate medical attention and special treatment needed

Maintain adequate ventilation and oxygenation of the patient. Treat with 100% oxygen. If burn is present, treat as any thermal burn, after decontamination. Exposure may increase "myocardial irritability". Do not administer sympathomimetic drugs such as epinephrine unless absolutely necessary. Because rapid absorption may occur through the 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. No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition 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 anemia. Skin contact may aggravate preexisting dermatitis.

Section 5. Fire Fighting Measures

5.1 Extinguishing Media

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

5.2 Special hazards arising from the substance or mixture

Hazardous Combustion Products: During a fire, smoke may contain the original material in addition to combustion products of varying composition which may be toxic and/or irritating. Combustion products may include and are not limited to: Hydrogen chloride. Carbon monoxide. Carbon dioxide. Combustion products may include trace amounts of: Phosgene. Chlorine. Sulfur oxides.
Unusual Fire and Explosion Hazards: 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 areas.

5.3 Advice for firefighters

Fire Fighting Procedures: Keep people away. Isolate fire and deny unnecessary entry. Stay upwind. Keep out of low areas where gases (fumes) can accumulate. 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 personnel from the area in case of rising sound from venting safety device or discoloration of the container. Move container from fire area if this is possible without hazard. Burning liquids may be moved by flushing with water to protect personnel and minimize property damage. Water fog, applied gently may be used as a blanket for fire extinguishment.
Special Protective Equipment for Firefighters: Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, trousers, boots, and gloves). Avoid contact with this material during fire fighting operations. If contact is likely, change to full chemical resistant fire fighting clothing with self-contained breathing apparatus. If this is not available, wear full chemical resistant clothing with self-contained breathing apparatus and fight fire from a remote location. For protective equipment in post-fire or non-fire clean-up situations, refer to the relevant sections.

Section 6. Accidental Release Measures

6.1 Personal precautions, protective equipment and emergency procedures: Isolate area. Refer to Section 7, Handling, for additional precautionary measures. Keep unnecessary and unprotected personnel from entering the area. Keep personnel out of low areas. Keep personnel out of confined or poorly ventilated areas. Keep upwind of spill. Ventilate area of leak or spill. Only trained and properly protected personnel must be involved in clean-up operations. Confined space entry procedures must be followed before entering the area. Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection.

6.2 Environmental precautions: Material will sink in water. Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information.

6.3 Methods and materials for containment and cleaning up: Contain spilled material if possible. Small spills: Collect in suitable and properly labeled containers. Large spills: Dike area to contain spill. Pump into suitable and properly labeled containers. See Section 13, Disposal Considerations, for additional information.

Section 7. Handling and Storage

7.1 Precautions for safe handling

Handling
General Handling: Avoid contact with eyes, skin, and clothing. Avoid breathing vapor. Do not swallow. Wash thoroughly after handling. Keep container closed. Use with adequate ventilation. When using do not eat, drink or smoke. To avoid uncontrolled emissions, vent vapor from container to storage tank. Vapors of this product are heavier than air and lethal concentrations of vapors can collect in low, confined and unventilated spaces such as tanks, pits, small rooms and even in equipment (degreasers) that is used for degreasing metal parts. Do not enter these confined spaces where vapors of this product are suspected unless special breathing apparatus is used and an observer is present for assistance. Do not enter confined spaces unless adequately ventilated. See Section 8, EXPOSURE CONTROLS AND PERSONAL PROTECTION.
Other Precautions: 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.

7.2 Conditions for safe storage, including any incompatibilities

Storage
Store under cover in a dry, clean, cool, well ventilated place away from sunlight. Do not handle or store near an open flame, heat, or sources of ignition. Keep container tightly closed when not in use. Do not store in: Zinc. Aluminum. Aluminum alloys. Plastic.

7.3 Specific end uses
See the technical data sheet on this product for further information.

Section 8. Exposure Controls / Personal Protection

8.1 Control parameters

Exposure Limits

Component	List	Type	Value
Dichloromethane; methylene chloride	Ireland OELV	TWA	174 mg/m3 50 ppm SKIN
	Ireland OELV	STEL	550 mg/m3 150 ppm SKIN
	UK WEL	TWA	350 mg/m3 100 ppm SKIN
	UK WEL	STEL	1,060 mg/m3 300 ppm SKIN
	ACGIH	TWA	50 ppm BEI
1,2-Epoxybutane (butylene oxide)	AIHA WEEL	TWA	5.9 mg/m3 2 ppm

A "skin" notation following the inhalation exposure guideline refers to the potential for dermal absorption of the material including mucous membranes and the eyes either by contact with vapors or by direct skin contact.
It is intended to alert the reader that inhalation may not be the only route of exposure and that measures to minimize dermal exposures should be considered.
A BEI notation following the exposure guideline refers to a guidance value for assessing biological monitoring results as an indicator of the uptake of a substance from all routes of exposures.

Derived No Effect Level (DNEL)

Workers

Potential Health Effects	Possible route(s) of exposure:	Value
Acute - systemic effects	Skin contact	Not available
Acute - systemic effects	Inhalation	706 mg/m3
Acute - local effects	Skin contact	Not available
Acute - local effects	Inhalation	Not available
Long-term - systemic effects	Skin contact	4750 mg/kg bw/day
Long-term - systemic effects	Inhalation	353 mg/m3
Long-term - local effects	Skin contact	Not available
Long-term - local effects	Inhalation	Not available

Consumers

Potential Health Effects	Possible route(s) of exposure:	Value
Acute - systemic effects	Skin contact	Not available
Acute - systemic effects	Inhalation	353 mg/m3
Long-term - systemic effects	Skin contact	2395 mg/kg bw/day
Long-term - local effects	Skin contact	88.3 mg/m3
Long-term - local effects	Ingestion	0.06 mg/kg bw/day

Predicted No Effect Concentration (PNEC)

Compartment	Value	Remarks
Fresh water	0.54 mg/l	
Marine water	0.194 mg/l	

Intermittent releases	0.27 mg/l
Fresh water sediment	4.47 mg/kg d.w.
Marine sediment	1.61 mg/kg d.w.
Soil	0.583 mg/kg d.w.
STP	26 mg/l

8.2 Exposure controls

Personal Protection

Eye/Face Protection: Use chemical goggles. Chemical goggles should be consistent with EN 166 or equivalent. If exposure causes eye discomfort, use a full-face respirator.
Skin Protection: When prolonged or frequently repeated contact could occur, use protective clothing chemically resistant to this material. Selection of specific items such as faceshield, boots, apron, or full-body suit will depend on the task.

Hand protection: Use gloves chemically resistant to this material when prolonged or frequently repeated contact could occur. Use chemical resistant gloves classified under Standard EN374: Protective gloves against chemicals and micro-organisms. Examples of preferred glove barrier materials include: Viton. Polyvinyl alcohol ("PVA"). Ethyl vinyl alcohol laminate ("EVAL"). Examples of acceptable glove barrier materials include: Butyl rubber. When prolonged or frequently repeated contact may occur, a glove with a protection class of 5 or higher (breakthrough time greater than 240 minutes according to EN 374) is recommended. When only brief contact is expected, a glove with a protection class of 3 or higher (breakthrough time greater than 60 minutes according to EN 374) is recommended. NOTICE: The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all relevant workplace factors such as, but not limited to: Other chemicals which may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), potential body reactions to glove materials, as well as the instructions/specifications provided by the glove supplier.

Respiratory Protection: Atmospheric levels should be maintained below the exposure guideline. When respiratory protection is required, use an approved self-contained breathing apparatus or positive pressure air line with auxiliary self-contained air supply. For emergency and other conditions where the exposure guideline may be exceeded, use an approved positive-pressure self-contained breathing apparatus or positive-pressure air line with auxiliary self-contained air supply.
Ingestion: Avoid ingestion of even very small amounts; do not consume or store food or tobacco in the work area; wash hands and face before smoking or eating.

Engineering Controls

Ventilation: Use engineering controls to maintain airborne level below exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, use only in enclosed systems or with local exhaust ventilation. Exhaust systems should be designed to move the air away from the source of vapor/aerosol generation and people working at this point. Lethal concentrations may exist in areas with poor ventilation.

Section 9. Physical and Chemical Properties

9.1 Information on basic physical and chemical properties

Appearance	
Physical State	Liquid.
Color	Clear
Odor	Characteristic
Odor Threshold	No test data available
pH	Not applicable
Melting Point	-96.7 °C *Literature*
Freezing Point	-96.7 °C *Literature*
Boiling Point (760 mmHg)	39.8 °C *Literature* .
Flash Point - Closed Cup	*Tag Closed Cup ASTM D56* None
Evaporation Rate (Butyl Acetate = 1)	No test data available
Flammability (solid, gas)	Not applicable to liquids

Flammable Limits In Air	**Lower**: 14 %(V) *Literature* **Upper**: 22 %(V) *Literature*
Vapor Pressure	47.3 kPa @ 20 °C *Literature*
Vapor Density (air = 1)	2.93 *Literature*
Specific Gravity (H2O = 1)	1.32 25 °C/25 °C *Literature*
Solubility in water (by weight)	1.3 % @ 25 °C *Literature*
Partition coefficient, n-octanol/water (log Pow)	No data available for this product. See Section 12 for individual component data.
Autoignition Temperature	556 °C *Literature*
Decomposition Temperature	No test data available
Kinematic Viscosity	0.31 mm2/s @ 25 °C *Calculated*
Explosive properties	Not explosive
Oxidizing properties	No

9.2 Other information

Section 10. Stability and Reactivity

10.1 Reactivity
No dangerous reaction known under conditions of normal use.

10.2 Chemical stability
Stable under recommended storage conditions. See Storage, Section 7.

10.3 Possibility of hazardous reactions
Polymerization will not occur.

10.4 Conditions to Avoid: Exposure to elevated temperatures can cause product to decompose. Avoid open flames, welding arcs, or other high temperature sources which induce thermal decomposition. Avoid direct sunlight or ultraviolet sources.

10.5 Incompatible Materials: Avoid contact with oxidizing materials. Avoid contact with: Strong bases. Water contamination may cause corrosion of metals due to formation of hydrochloric acid. Avoid contact with metals such as: Zinc powders. Aluminum powders. Magnesium powders. Potassium. Sodium. Avoid unintended contact with: Amines.

10.6 Hazardous decomposition products
Decomposition products depend upon temperature, air supply and the presence of other materials. Decomposition products can include and are not limited to: Hydrogen chloride. Decomposition products can include trace amounts of: Chlorine. Phosgene.

Section 11. Toxicological Information

11.1 Information on toxicological effects

Acute Toxicity
Ingestion
Low toxicity if swallowed. Small amounts swallowed incidentally as a result of normal handling operations are not likely to cause injury; however, swallowing larger amounts may cause injury. As product: Single dose oral LD50 has not been determined.
Aspiration hazard
Aspiration into the lungs may occur during ingestion or vomiting, resulting in rapid absorption and injury to other body systems.

Dermal
Prolonged skin contact is unlikely to result in absorption of harmful amounts.
As product: The dermal LD50 has not been determined.
Inhalation
In confined or poorly ventilated areas, vapor can readily accumulate and can cause unconsciousness and death. Excessive exposure may cause irritation to upper respiratory tract (nose and throat). 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 may cause dizziness, drunkenness, and as low as 10,000 ppm, unconsciousness and death. These high levels may also cause cardiac arrhythmias (irregular heartbeats).
As product: The LC50 has not been determined.
For the major component(s): LC50, 4 h, Vapor, Mouse 86 mg/l

Eye damage/eye irritation
May cause pain disproportionate to the level of irritation to eye tissues. May cause moderate eye irritation which may be slow to heal. May cause slight corneal injury. Vapor may cause eye irritation experienced as mild discomfort and redness.

Skin corrosion/irritation
Brief contact may cause moderate skin irritation with local redness. May cause more severe response on covered skin (under clothing, gloves). Prolonged contact may cause skin burns. Symptoms may include pain, severe local redness, swelling, and tissue damage. 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. May cause drying and flaking of the skin.

Sensitization
Skin
Available data are inconclusive.
Respiratory
Relevant data not available.

Repeated Dose Toxicity
For the major component(s): In animals, effects have been reported on the following organs: Central nervous system. Kidney. Liver. Blood. May cause carboxyhemoglobinemia, thereby impairing the blood's ability to transport oxygen.

Chronic Toxicity and Carcinogenicity
Methylene chloride has been shown to increase the incidence of malignant tumors in mice and benign tumors in 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. Studies have shown that tumors observed in mice are unique to that species.

Developmental Toxicity
Has been toxic to the fetus in laboratory animals at doses toxic to the mother. Did not cause birth defects in laboratory animals. For the major component(s): Has been toxic to the fetus in laboratory animals at doses toxic to the mother. For the major component(s): Did not cause birth defects in laboratory animals.

Reproductive Toxicity
For the major component(s): In animal studies, did not interfere with reproduction.

Genetic Toxicology
For the major component(s): In vitro genetic toxicity studies were negative in some cases and positive in other cases. Negative or equivocal results have been obtained in genetic toxicity tests with methylene chloride using mammalian cells or animals. This is consistent with the lack of interaction with 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.

Component Toxicology - Dichloromethane (methylene chloride)

Skin Absorption	No deaths occurred at this concentration. LD50, Rat > 2,000 mg/kg

Component Toxicology - 1,2-Butylene oxide

Skin Absorption	LD50, Rabbit > 1,500 - < 2,950 mg/kg

Component Toxicology - Dichloromethane (methylene chloride)

Ingestion	No deaths occurred at this concentration. LD50, Rat > 2,000

	mg/kg

Component Toxicology - 1,2-Butylene oxide

Ingestion	LD50, Rat 900 mg/kg

Section 12. Ecological Information

12.1 Toxicity

Data for Component: **Dichloromethane; methylene chloride**

Material is not classified as dangerous to aquatic organisms (LC50/EC50/IC50/LL50/EL50 greater than 100 mg/L in most sensitive species).

Fish Acute & Prolonged Toxicity
LC50, fathead minnow (Pimephales promelas), flow-through, 96 h: 193 mg/l
Aquatic Invertebrate Acute Toxicity
LC50, water flea Daphnia magna, static: 27 mg/l
EC50, water flea Daphnia magna, 48 h, immobilization: 480 mg/l
Aquatic Plant Toxicity
NOEC, alga Scenedesmus sp., Growth rate inhibition, 8 d: 550 mg/l
EbC50, green alga Pseudokirchneriella subcapitata (formerly known as Selenastrum capricornutum), biomass growth inhibition, 96 h: > 662 mg/l
Toxicity to Micro-organisms
EC50, OECD 209 Test; activated sludge, static, 40 min: 2,590 mg/l

Data for Component: **1,2-Epoxybutane (butylene oxide)**

Material is harmful to aquatic organisms (LC50/EC50/IC50 between 10 and 100 mg/L in the most sensitive species).

Fish Acute & Prolonged Toxicity
LC50, golden orfe (Leuciscus idus), static, 96 h: > 100 mg/l
Aquatic Invertebrate Acute Toxicity
EC50, water flea Daphnia magna, static, 48 h, mobility: 70 mg/l
Aquatic Plant Toxicity
ErC50, green alga Desmodesmus subspicatus, Growth rate inhibition, 72 h: > 500 mg/l
Toxicity to Micro-organisms
EC50, OECD Guideline 209 (Activated Sludge, Respiration Inhibition Test); activated sludge, domestic, static, 0.5 h: 900 mg/l

12.2 Persistence and Degradability

Data for Component: **Dichloromethane; methylene chloride**

Based on stringent OECD test guidelines, this material cannot be considered as readily biodegradable; however, these results do not necessarily mean that the material is not biodegradable under environmental conditions. Biodegradation rate may increase in soil and/or water with acclimation.
OECD Biodegradation Tests:

Biodegradation	Exposure Time	Method	10 Day Window
5 - 26 %	28 d	OECD 301C Test	Not applicable

Data for Component: **1,2-Epoxybutane (butylene oxide)**

Material is readily biodegradable. Passes OECD test(s) for ready biodegradability.
Stability in Water (1/2-life):
11 d
OECD Biodegradation Tests:

Biodegradation	Exposure Time	Method	10 Day Window
90 %	28 d	OECD 310/ISO 14593	pass

12.3 Bioaccumulative potential

Data for Component: **Dichloromethane; methylene chloride**

Bioaccumulation: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).
Partition coefficient, n-octanol/water (log Pow): 1.25 Measured
Bioconcentration Factor (BCF): 2 - 40; fish; Measured

Data for Component: **1,2-Epoxybutane (butylene oxide)**

Bioaccumulation: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).
Partition coefficient, n-octanol/water (log Pow): 0.68 Measured

12.4 Mobility in soil

Data for Component: **Dichloromethane; methylene chloride**

Mobility in soil: Potential for mobility in soil is very high (Koc between 0 and 50).
Partition coefficient, soil organic carbon/water (Koc): 46.8 Estimated.
Henry's Law Constant (H): 3.98E+02 Pa*m3/mole. Calculated

Data for Component: **1,2-Epoxybutane (butylene oxide)**

Mobility in soil: Potential for mobility in soil is very high (Koc between 0 and 50).
Partition coefficient, soil organic carbon/water (Koc): 4.49 Estimated.
Henry's Law Constant (H): 2.02E-04 atm*m3/mole; 25 °C Estimated.
Distribution in Environment: Mackay Level 1 Fugacity Model:

Air	Water.	Biota	Soil	Sediment
87.29 %	12.69 %		0 %	0 %

12.5 Results of PBT and vPvB assessment

Data for Component: **Dichloromethane; methylene chloride**

This substance is not considered to be persistent, bioaccumulating and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulating (vPvB).

Data for Component: **1,2-Epoxybutane (butylene oxide)**

This substance is not considered to be persistent, bioaccumulating and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulating (vPvB).

12.6 Other adverse effects

Data for Component: **Dichloromethane; methylene chloride**

This substance is not in Annex I of Regulation (EC) 2037/2000 on substances that deplete the ozone layer.

Data for Component: **1,2-Epoxybutane (butylene oxide)**

This substance is not in Annex I of Regulation (EC) 2037/2000 on substances that deplete the ozone layer.

Section 13. Disposal Considerations

13.1 Waste treatment methods

This product, when being disposed of in its unused and uncontaminated state should be treated as a hazardous waste according to EC Directive 91/689/EEC. Any disposal practices must be in compliance with all national and provincial laws and any municipal or local by-laws governing hazardous waste. For used, contaminated and residual materials additional evaluations may be required. Do not dump into any sewers, on the ground, or into any body of water.

Section 14. Transport Information

ROAD & RAIL
Proper Shipping Name: DICHLOROMETHANE
Hazard Class: 6.1 **ID Number:** UN1593 **Packing Group:** PG III

Hazard identification No: 60
Tremcard Number: 61S1593
Environmental Hazard: No

OCEAN
Proper Shipping Name: DICHLOROMETHANE
Hazard Class: 6.1 **ID Number:** UN1593 **Packing Group:** PG III
EMS Number: F-A,S-A
Marine pollutant.: No

AIR
Proper Shipping Name: DICHLOROMETHANE
Hazard Class: 6.1 **ID Number:** UN1593 **Packing Group:** PG III
Cargo Packing Instruction: 663
Passenger Packing Instruction: 655
Environmental Hazard: No

INLAND WATERWAYS
Proper Shipping Name: DICHLOROMETHANE
Hazard Class: 6.1 **ID Number:** UN1593 **Packing Group:** PG III
Hazard identification No: 60
Tremcard Number: 61S1593
Environmental Hazard: No

Section 15. Regulatory Information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

European Inventory of Existing Commercial Chemical Substances (EINECS)
The components of this product are on the EINECS inventory or are exempt from inventory requirements.

15.2 Chemical Safety Assessment
A Chemical Safety Assessment has been carried out for this substance.

Section 16. Other Information

Hazard statement in the composition section

H225	Highly flammable liquid and vapour.
H302	Harmful if swallowed.
H312	Harmful in contact with skin.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H332	Harmful if inhaled.
H335	May cause respiratory irritation.
H336	May cause drowsiness or dizziness.
H351	Suspected of causing cancer.
H373	May cause damage to organs through prolonged or repeated exposure.
H412	Harmful to aquatic life with long lasting effects.

Risk-phrases in the Composition section

R11	Highly flammable.
R20/21/22	Harmful by inhalation, in contact with skin and if swallowed.
R36/37/38	Irritating to eyes, respiratory system and skin.
R40	Limited evidence of a carcinogenic effect.
R52/53	Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R67	Vapours may cause drowsiness and dizziness.

Product Literature

Additional information on this product may be obtained by calling your sales or customer service contact. Ask for a product brochure. Additional information on this and other products may be obtained by visiting our web page.

Revision

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Most recent revision(s) are noted by the bold, double bars in left-hand margin throughout this document.

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