



# Material Safety Data Sheet

The Dow Chemical Company

**Product Name:** FROTH-PAK(TM) 400 B HFC Polyurethane Foam System

**Issue Date:** 05/22/2008

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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.

## 1. Product and Company Identification

### Product Name

FROTH-PAK(TM) 400 B HFC Polyurethane Foam System

### COMPANY IDENTIFICATION

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

Customer Information Number: 800-258-2436

### EMERGENCY TELEPHONE NUMBER

**24-Hour Emergency Contact:** 989-636-4400

**Local Emergency Contact:** 989-636-4400

## 2. Hazards Identification

### Emergency Overview

**Color:** White

**Physical State:** Liquid

**Odor:** Amine.

### Hazards of product:

**CAUTION!** May cause eye irritation. May be harmful if inhaled. Vapor reduces oxygen available for breathing. May cause anesthetic effects. May cause central nervous system effects; may cause respiratory tract irritation. Keep upwind of spill. Toxic fumes may be released in fire situations. Contents under pressure. Avoid temperatures above 50°C (122°F)

### OSHA Hazard Communication Standard

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

### Potential Health Effects

**Eye Contact:** May cause moderate eye irritation. May cause slight corneal injury.

**Skin Contact:** Brief contact may cause slight skin irritation with local redness.

**Skin Absorption:** Prolonged skin contact is unlikely to result in absorption of harmful amounts.

**Inhalation:** Prolonged excessive exposure may cause adverse effects. In confined or poorly ventilated areas, vapor can easily accumulate and can cause unconsciousness and death due to displacement of oxygen. May cause respiratory irritation and central nervous system depression. Excessive exposure may increase sensitivity to epinephrine and increase myocardial irritability (irregular heartbeats). Symptoms of excessive exposure may be anesthetic or narcotic effects; dizziness and drowsiness may be observed.

**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.

**Effects of Repeated Exposure:** Contains a component which is reported to be a weak organophosphate-type cholinesterase inhibitor. Excessive exposure may produce organophosphate type cholinesterase inhibition. Signs and symptoms of excessive exposure may be headache, dizziness, incoordination, muscle twitching, tremors, nausea, abdominal cramps, diarrhea, sweating, pinpoint pupils, blurred vision, salivation, tearing, tightness in chest, excessive urination, convulsions. Contains component(s) which have been reported to cause effects on the following organs in animals: Liver. Bone marrow. Kidney. For ethylene glycol: In humans, effects have been reported on the following organs: Central nervous system. Observations in humans include: Nystagmus (involuntary eye movement).

**Birth Defects/Developmental Effects:** For the component(s) tested: Has been toxic to the fetus in laboratory animals at doses toxic to the mother. For similar material(s): Has been toxic to the fetus in lab animals at doses nontoxic to the mother. Did not cause birth defects in laboratory animals. Based on animal studies, ingestion of very large amounts of ethylene glycol appears to be the major and possibly only route of exposure to produce birth defects. Exposures by inhalation or skin contact, the primary routes of occupational exposure, had minimal effect on the fetus, in animal studies.

### 3. Composition Information

Component	CAS #	Amount
Phthalic anhydride, diethylene glycol polyester	32472-85-8	>= 15.0 - <= 30.0 %
Sucrose , propylene oxide polymer	9049-71-2	>= 15.0 - <= 30.0 %
1,1,1,2-Tetrafluoroethane	811-97-2	>= 15.0 - <= 30.0 %
Tris(1-chloro-2-propyl) phosphate	13674-84-5	>= 15.0 - <= 30.0 %
Ethylene glycol	107-21-1	>= 1.0 - <= 5.0 %

### 4. First-aid measures

**Eye Contact:** Flush eyes thoroughly with water for several minutes. Remove contact lenses after the initial 1-2 minutes and continue flushing for several additional minutes. If effects occur, consult a physician, preferably an ophthalmologist.

**Skin Contact:** Wash skin with plenty of water.

**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.

**Ingestion:** If swallowed, seek medical attention. Do not induce vomiting unless directed to do so by medical personnel.

**Notes to Physician:** Due to structural analogy and clinical data, this material may have a mechanism of intoxication similar to ethylene glycol. On that basis, treatment similar to ethylene glycol intoxication may be of benefit. In cases where several ounces (60 - 100 ml) have been ingested, consider the use of ethanol and hemodialysis in the treatment. Consult standard literature for details of treatment. If ethanol is used, a therapeutically effective blood concentration in the range of 100 - 150 mg/dl may be achieved by a rapid loading dose followed by a continuous intravenous infusion. Consult standard literature for details of treatment. 4-Methyl pyrazole (Antizol®) is an effective blocker of alcohol dehydrogenase and should be used in the treatment of ethylene glycol (EG), di- or triethylene glycol (DEG, TEG), ethylene glycol butyl ether (EGBE), or methanol intoxication if available. Fomepizole protocol (Brent, J. et al., New England Journal of Medicine, Feb. 8, 2001, 344:6, p. 424-9): loading

dose 15 mg/kg intravenously, follow by bolus dose of 10 mg/kg every 12 hours; after 48 hours, increase bolus dose to 15 mg/kg every 12 hours. Continue fomepizole until serum methanol, EG, DEG, TEG or EGBE are undetectable. The signs and symptoms of poisoning include anion gap metabolic acidosis, CNS depression, renal tubular injury, and possible late stage cranial nerve involvement. Respiratory symptoms, including pulmonary edema, may be delayed. Persons receiving significant exposure should be observed 24-48 hours for signs of respiratory distress. In severe poisoning, respiratory support with mechanical ventilation and positive end expiratory pressure may be required. Maintain adequate ventilation and oxygenation of the patient. This material is a cholinesterase inhibitor. Treat symptomatically. Atropine, only by injection, is the preferable antidote. Oximes, such as 2-PAM/protopam, may be therapeutic if used early; however, use only in conjunction with atropine. In case of severe acute poisoning, use antidote immediately after establishing an open airway and respiration. Attempt seizure control with diazepam 5-10 mg (adults) intravenous over 2-3 minutes. Repeat every 5-10 minutes as needed. Monitor for hypotension, respiratory depression, and need for intubation. Consider second agent if seizures persist after 30 mg. If seizures persist or recur administer phenobarbital 600-1200 mg (adults) intravenous diluted in 60 ml 0.9% saline given at 25-50 mg/minute. Evaluate for hypoxia, dysrhythmia, electrolyte disturbance, hypoglycemia (treat adults with dextrose 100 mg intravenous). If exposed, plasma and red blood cell cholinesterase tests may indicate significance of exposure (baseline data are useful). 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". Do not administer sympathomimetic drugs such as epinephrine unless absolutely necessary. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

## 5. Fire Fighting Measures

**Extinguishing Media:** Water fog or fine spray. Dry chemical fire extinguishers. Carbon dioxide fire extinguishers. Foam. Do not use direct water stream. May spread fire. Alcohol resistant foams (ATC type) are preferred. General purpose synthetic foams (including AFFF) or protein foams may function, but will be less effective.

**Fire Fighting Procedures:** Keep people away. Isolate fire and deny unnecessary entry. Use water spray to cool fire exposed containers and fire affected zone until fire is out and danger of reignition has passed. Fight fire from protected location or safe distance. Consider the use of unmanned hose holders or monitor nozzles. Immediately withdraw all personnel from the area in case of rising sound from venting safety device or discoloration of the container. Do not use direct water stream. May spread fire. 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.

**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). If protective equipment is not available or not used, fight fire from a protected location or safe distance.

**Unusual Fire and Explosion Hazards:** Container may rupture from gas generation in a fire situation. Violent steam generation or eruption may occur upon application of direct water stream to hot liquids. Blowing agent vaporizes quickly at room temperature.

**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 fluoride. Hydrogen chloride. Carbon monoxide. Carbon dioxide.

## 6. Accidental Release Measures

**Steps to be Taken if Material is Released or Spilled:** Contain spilled material if possible. Absorb with materials such as: Dirt. Sand. Sawdust. Collect in suitable and properly labeled containers. Wash the spill site with water. See Section 13, Disposal Considerations, for additional information.

**Personal Precautions:** Isolate area. Keep unnecessary and unprotected personnel from entering the area. Spilled material may cause a slipping hazard. Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection. Refer to Section 7, Handling, for additional precautionary measures.

**Environmental Precautions:** Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information.

## 7. Handling and Storage

### Handling

**General Handling:** Avoid contact with eyes. Avoid breathing vapor. Wash thoroughly after handling. Keep container closed. Use only with adequate ventilation. This material is hygroscopic in nature. Contents under pressure. Do not puncture or incinerate container. Do not enter confined spaces unless adequately ventilated. See Section 8, EXPOSURE CONTROLS AND PERSONAL PROTECTION.

**Other Precautions:** Spills of these organic materials on hot fibrous insulations may lead to lowering of the autoignition temperatures possibly resulting in spontaneous combustion.

### Storage

Store under cover in a dry, clean, cool, well ventilated place away from sunlight. Blowing agent may migrate from product and accumulate in some storage situations.

**Storage Period:**  
6 Months

**Storage temperature:**  
25 °C

## 8. Exposure Controls / Personal Protection

### Exposure Limits

Component	List	Type	Value
1,1,1,2-Tetrafluoroethane	WEEL	TWA	4,240 mg/m3 1,000 ppm
Ethylene glycol	ACGIH	Ceiling Aerosol.	100 mg/m3

### Personal Protection

**Eye/Face Protection:** Use chemical goggles.

**Skin Protection:** Use protective clothing chemically resistant to this material. Selection of specific items such as face shield, boots, apron, or full body suit will depend on the task.

**Hand protection:** Use gloves chemically resistant to this material. Examples of preferred glove barrier materials include: Chlorinated polyethylene. Polyethylene. Ethyl vinyl alcohol laminate ("EVAL"). Polyvinyl alcohol ("PVA"). Styrene/butadiene rubber. Viton. Examples of acceptable glove barrier materials include: Butyl rubber. Natural rubber ("latex"). Polyvinyl chloride ("PVC" or "vinyl"). 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:** Respiratory protection should be worn when there is a potential to exceed the exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, use an approved respirator. When respiratory protection is required, use an approved positive-pressure self-contained breathing apparatus or positive-pressure airline with auxiliary self-contained air supply. For emergency conditions, use an approved positive-pressure self-contained breathing apparatus. In confined or poorly ventilated areas, use an approved self-contained breathing apparatus or positive pressure air line with auxiliary self-contained air supply.

**Ingestion:** Use good personal hygiene. Do not consume or store food in the work area. Wash hands 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.

## 9. Physical and Chemical Properties

Physical State	Liquid
Color	White
Odor	Amine.
Flash Point - Closed Cup	$\geq 100$ °C ( $\geq 212$ °F) <i>Estimated</i>
Flammable Limits In Air	<b>Lower:</b> No test data available <b>Upper:</b> No test data available
Autoignition Temperature	No test data available
Vapor Pressure	230 psi @ 25 °C Container is under pressure.
Boiling Point (760 mmHg)	$> 100$ °C ( $> 212$ °F) <i>Estimated</i> .
Vapor Density (air = 1)	No test data available
Specific Gravity (H <sub>2</sub> O = 1)	1.02 - 1.04 25 °C/25 °C <i>ASTM D891</i>
Freezing Point	No test data available
Melting Point	No test data available
Solubility in Water (by weight)	Slightly soluble
pH	<i>Not applicable</i>
Kinematic Viscosity	No test data available

## 10. Stability and Reactivity

### Stability/Instability

Stable under recommended storage conditions. See Storage, Section 7.

**Conditions to Avoid:** Avoid temperatures above 50 °C (122 °F) Product can oxidize at elevated temperatures. Generation of gas during decomposition can cause pressure in closed systems. Elevated temperatures can cause pressure buildup in closed containers due to the release of blowing agents.

**Incompatible Materials:** Avoid contact with: Strong acids. Avoid unintended contact with: Amines. Avoid unintended contact with isocyanates. The reaction of polyols and isocyanates generates heat.

### Hazardous Polymerization

Will not occur by itself.

### Thermal Decomposition

Decomposition products depend upon temperature, air supply and the presence of other materials. Decomposition products can include and are not limited to: Carbon dioxide. Alcohols. Ethers. Hydrocarbons. Ketones. Polymer fragments. Halogenated hydrocarbons.

## 11. Toxicological Information

### Acute Toxicity

#### Ingestion

Single dose oral LD50 has not been determined. Estimated LD50, Rat  $> 2,000$  mg/kg

#### Skin Absorption

The dermal LD50 has not been determined. Estimated LD50, Rabbit  $> 2,000$  mg/kg

**Repeated Dose Toxicity**

Contains a component which is reported to be a weak organophosphate-type cholinesterase inhibitor. Excessive exposure may produce organophosphate type cholinesterase inhibition. Signs and symptoms of excessive exposure may be headache, dizziness, incoordination, muscle twitching, tremors, nausea, abdominal cramps, diarrhea, sweating, pinpoint pupils, blurred vision, salivation, tearing, tightness in chest, excessive urination, convulsions. Contains component(s) which have been reported to cause effects on the following organs in animals: Liver. Bone marrow. Kidney. For ethylene glycol: In humans, effects have been reported on the following organs: Central nervous system. Observations in humans include: Nystagmus (involuntary eye movement).

**Chronic Toxicity and Carcinogenicity**

For the component(s) tested: Did not cause cancer in laboratory animals.

**Developmental Toxicity**

For the component(s) tested: Has been toxic to the fetus in laboratory animals at doses toxic to the mother. For similar material(s): Has been toxic to the fetus in lab animals at doses nontoxic to the mother. Did not cause birth defects in laboratory animals. Based on animal studies, ingestion of very large amounts of ethylene glycol appears to be the major and possibly only route of exposure to produce birth defects. Exposures by inhalation or skin contact, the primary routes of occupational exposure, had minimal effect on the fetus, in animal studies.

**Genetic Toxicology**

In vitro genetic toxicity studies were negative for component(s) tested. Genetic toxicity studies in animals were negative for component(s) tested.

**12. Ecological Information**

**ENVIRONMENTAL FATE**

Data for Component: Phthalic anhydride, diethylene glycol polyester

**Movement & Partitioning**

Based largely or completely on data for major component(s): Bioconcentration potential is low (BCF less than 100 or log Pow less than 3).

**Persistence and Degradability**

Biodegradation under aerobic static laboratory conditions is moderate (BOD20 or BOD28/ThOD between 10 and 40%).

**Biological oxygen demand (BOD):**

BOD 5	BOD 10	BOD 20	BOD 28
17 %	29 %		

**Chemical Oxygen Demand:** 1.50 mg/mg

Data for Component: Sucrose , propylene oxide polymer

**Movement & Partitioning**

No bioconcentration is expected because of the relatively high water solubility.

**Persistence and Degradability**

Based on information for a similar material: Material is inherently biodegradable (reaches > 20% biodegradation in OECD test(s) for inherent biodegradability).

Data for Component: 1,1,1,2-Tetrafluoroethane

**Movement & Partitioning**

Bioconcentration potential is low (BCF less than 100 or log Pow less than 3). Potential for mobility in soil is high (Koc between 50 and 150).

**Henry's Law Constant (H):** 5.00E-2 atm\*m3/mole; 25 °C Measured

**Partition coefficient, n-octanol/water (log Pow):** 1.68 Estimated

**Partition coefficient, soil organic carbon/water (Koc):** 97 Estimated

**Persistence and Degradability**

1,1,1,2-Tetrafluoroethane (HFC-134a) has a stratospheric ozone depletion potential (ODP) of zero, relative to CFC 12 (ODP=1). Material is expected to biodegrade only very slowly (in the environment). Fails to pass OECD/EEC tests for ready biodegradability.

**Indirect Photodegradation with OH Radicals**

Rate Constant	Atmospheric Half-life	Method
6.20E-15 cm <sup>3</sup> /s	1,700 d	Estimated

**OECD Biodegradation Tests:**

Biodegradation	Exposure Time	Method
4 %	28 d	OECD 301D Test

**Theoretical Oxygen Demand:** 0.47 mg/mg

Data for Component: Tris(1-chloro-2-propyl) phosphate

**Movement & Partitioning**

Bioconcentration potential is low (BCF < 100 or Log Pow < 3). Potential for mobility in soil is low (Koc between 500 and 2000).

**Henry's Law Constant (H):** < 1.35E-5 atm\*m<sup>3</sup>/mole; 25 °C Estimated

**Partition coefficient, n-octanol/water (log Pow):** 2.59 Measured

**Partition coefficient, soil organic carbon/water (Koc):** 1,300 Estimated

**Bioconcentration Factor (BCF):** 0.8 - 4.6; common carp (Cyprinus carpio); Measured

**Persistence and Degradability**

Material is expected to biodegrade only very slowly (in the environment). Fails to pass OECD/EEC tests for ready biodegradability.

**Indirect Photodegradation with OH Radicals**

Rate Constant	Atmospheric Half-life	Method
4.47E-11 cm <sup>3</sup> /s	0.24 d	Estimated

**OECD Biodegradation Tests:**

Biodegradation	Exposure Time	Method
14 %	28 d	OECD 301E Test

**Theoretical Oxygen Demand:** 1.17 mg/mg

Data for Component: Ethylene glycol

**Movement & Partitioning**

Bioconcentration potential is low (BCF < 100 or Log Pow < 3). Potential for mobility in soil is very high (Koc between 0 and 50). Given its very low Henry's constant, volatilization from natural bodies of water or moist soil is not expected to be an important fate process.

**Henry's Law Constant (H):** 8.05E-09 atm\*m<sup>3</sup>/mole; 25 °C Estimated

**Partition coefficient, n-octanol/water (log Pow):** -1.36 Measured

**Partition coefficient, soil organic carbon/water (Koc):** 1 Estimated

**Distribution in Environment: Mackay Level 1 Fugacity Model:**

Air	Water.	Biota	Soil	Sediment
2.1 %	98 %	< 0.01 %	< 0.01 %	< 0.01 %

**Persistence and Degradability**

Material is readily biodegradable. Passes OECD test(s) for ready biodegradability. Material is ultimately biodegradable (reaches > 70% mineralization in OECD test(s) for inherent biodegradability).

**Indirect Photodegradation with OH Radicals**

Rate Constant	Atmospheric Half-life	Method
8.32E-12 cm <sup>3</sup> /s	15 h	Estimated

**OECD Biodegradation Tests:**

Biodegradation	Exposure Time	Method
> 94 %	28 d	OECD 301F Test
90 %	1 d	OECD 302B Test

**Theoretical Oxygen Demand:** 1.29 mg/mg

**ECOTOXICITY**

Data for Component: Phthalic anhydride, diethylene glycol polyester

Material is practically non-toxic to aquatic organisms on an acute basis (LC50/EC50/EL50/LL50 >100 mg/L in the most sensitive species tested).

**Fish Acute & Prolonged Toxicity**

LC50, fathead minnow (*Pimephales promelas*), 96 h: > 500 mg/l

**Aquatic Invertebrate Acute Toxicity**

LC50, water flea *Daphnia magna*, 48 h: > 500 mg/l

**Data for Component: Sucrose , propylene oxide polymer**

Based on information for a similar material: Material is practically non-toxic to aquatic organisms on an acute basis (LC50/EC50/EL50/LL50 >100 mg/L in the most sensitive species tested).

**Data for Component: 1,1,1,2-Tetrafluoroethane**

Material is practically non-toxic to aquatic organisms on an acute basis (LC50/EC50/EL50/LL50 >100 mg/L in the most sensitive species tested).

**Fish Acute & Prolonged Toxicity**

LC50, rainbow trout (*Oncorhynchus mykiss*), static, 96 h: 450 mg/l

**Aquatic Invertebrate Acute Toxicity**

EC50, water flea *Daphnia magna*, 48 h, immobilization: 980 mg/l

**Data for Component: Tris(1-chloro-2-propyl) phosphate**

Material is slightly toxic to aquatic organisms on an acute basis (LC50/EC50/EL50/LL50 between 10 and 100 mg/L in the most sensitive species tested).

**Fish Acute & Prolonged Toxicity**

LC50, bluegill (*Lepomis macrochirus*), 96 h: 84 mg/l

**Aquatic Invertebrate Acute Toxicity**

EC50, water flea *Daphnia magna*, 48 h, immobilization: 63 mg/l

**Aquatic Plant Toxicity**

EC50, green alga *Selenastrum capricornutum*, biomass growth inhibition, 96 h: 47 mg/l

EC50, alga *Scenedesmus* sp., biomass growth inhibition, 72 h: 45 mg/l

**Toxicity to Micro-organisms**

EC50, OECD 209 Test; activated sludge, respiration inhibition, 3 h: 784 mg/l

**Data for Component: Ethylene glycol**

Material is practically non-toxic to aquatic organisms on an acute basis (LC50/EC50/EL50/LL50 >100 mg/L in the most sensitive species tested).

**Fish Acute & Prolonged Toxicity**

LC50, rainbow trout (*Oncorhynchus mykiss*), static, 96 h: 18,000 - 46,000 mg/l

**Aquatic Invertebrate Acute Toxicity**

LC50, water flea *Daphnia magna*, static, 48 h: 46,300 - 51,100 mg/l

**Aquatic Plant Toxicity**

EC50, green alga *Selenastrum capricornutum*, biomass growth inhibition, 96 h: 9,500 - 13,000 mg/l

**Toxicity to Micro-organisms**

EC50, OECD 209 Test; activated sludge, respiration inhibition, 30 min: 225 mg/l

## 13. Disposal Considerations

DO NOT DUMP INTO ANY SEWERS, ON THE GROUND, OR INTO ANY BODY OF WATER. All disposal practices 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. AS YOUR SUPPLIER, WE HAVE 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: Composition Information. 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: Handling &

Storage Information, MSDS Section 7 Stability & Reactivity Information, MSDS Section 10 Regulatory Information, MSDS Section 15

## 14. Transport Information

### DOT Non-Bulk

**Proper Shipping Name:** COMPRESSED GAS, N.O.S.  
**Technical Name:** Fluorinated Hydrocarbons, Nitrogen  
**Hazard Class:** 2.2 **ID Number:** UN1956

### DOT Bulk

**Proper Shipping Name:** COMPRESSED GAS, N.O.S.  
**Technical Name:** Fluorinated Hydrocarbons, Nitrogen  
**Hazard Class:** 2.2 **ID Number:** UN1956

### IMDG

**Proper Shipping Name:** COMPRESSED GAS, N.O.S.  
**Technical Name:** Fluorinated Hydrocarbons, Nitrogen  
**ID Number:** 2.2  
**EMS Number:** F-C,S-V

### ICAO/IATA

**Proper Shipping Name:** COMPRESSED GAS, N.O.S.  
**Technical Name:** Fluorinated Hydrocarbons, Nitrogen  
**Hazard Class:** 2.2 **ID Number:** UN1956 **Cargo Packing Instruction:** 200  
**Passenger Packing Instruction:** 200

*This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Additional transportation system information can be obtained through an authorized sales or customer service representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.*

## 15. Regulatory Information

### OSHA Hazard Communication Standard

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

### Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Sections 311 and 312

<b>Immediate (Acute) Health Hazard</b>	Yes
<b>Delayed (Chronic) Health Hazard</b>	No
<b>Fire Hazard</b>	No
<b>Reactive Hazard</b>	No
<b>Sudden Release of Pressure Hazard</b>	Yes

### Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Section 313

This product contains the following substances which are subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and which are listed in 40 CFR 372.

<b>Component</b>	<b>CAS #</b>	<b>Amount</b>
Ethylene glycol	107-21-1	>= 1.0 - <= 5.0 %

**Pennsylvania (Worker and Community Right-To-Know Act): Pennsylvania Hazardous Substances List and/or Pennsylvania Environmental Hazardous Substance List:**

The following product components are cited in the Pennsylvania Hazardous Substance List and/or the Pennsylvania Environmental Substance List, and are present at levels which require reporting.

<b>Component</b>	<b>CAS #</b>	<b>Amount</b>
Ethylene glycol	107-21-1	>= 1.0 - <= 5.0 %

**Pennsylvania (Worker and Community Right-To-Know Act): Pennsylvania Special Hazardous Substances List:**

To the best of our knowledge, this product does not contain chemicals at levels which require reporting under this statute.

**California Proposition 65 (Safe Drinking Water and Toxic Enforcement Act of 1986)**

This product contains no listed substances known to the State of California to cause cancer, birth defects or other reproductive harm, at levels which would require a warning under the statute.

**US. Toxic Substances Control Act**

All components of this product are on the TSCA Inventory or are exempt from TSCA Inventory requirements under 40 CFR 720.30

**CEPA - Domestic Substances List (DSL)**

All substances contained in this product are listed on the Canadian Domestic Substances List (DSL) or are not required to be listed.

**16. Other Information**

**Recommended Uses and Restrictions**

Polyurethane foam.

**Revision**

Identification Number: 64119 / 1001 / Issue Date 05/22/2008 / Version: 4.0

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

**Legend**

N/A	Not available
W/W	Weight/Weight
OEL	Occupational Exposure Limit
STEL	Short Term Exposure Limit
TWA	Time Weighted Average
ACGIH	American Conference of Governmental Industrial Hygienists, Inc.
DOW IHG	Dow Industrial Hygiene Guideline
WEEL	Workplace Environmental Exposure Level
HAZ_DES	Hazard Designation
Action Level	A value set by OSHA that is lower than the PEL which will trigger the need for activities such as exposure monitoring and medical surveillance if exceeded.

*The Dow Chemical Company urges each customer or recipient of this (M)SDS to study it carefully and consult appropriate expertise, as necessary or appropriate, to become aware of and understand the data contained in this (M)SDS and any hazards associated with the product. The information herein is provided 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 between various locations. It is the buyer's/user's responsibility to ensure that his activities comply with all federal, state, provincial or local laws. The information presented here pertains only to the product as shipped. Since conditions for use of the product are not under the control of the manufacturer, it is the buyer's/user's duty to determine the conditions necessary for the safe use of this product. Due to the proliferation of sources for information such as manufacturer-specific (M)SDSs, we are not and cannot be responsible for (M)SDSs obtained from any source other than ourselves. If you have*

*obtained an (M)SDS from another source or if you are not sure that the (M)SDS you have is current, please contact us for the most current version.*