



# Material Safety Data Sheet

The Dow Chemical Company

**Product Name:** Froth Pak(TM) 2.25SR 480BF HFC

**Issue Date:** 2013.12.18

**Print Date:** 19 Dec 2013

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) 2.25SR 480BF HFC

### COMPANY IDENTIFICATION

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

**For MSDS updates and Product Information:** 800-258-2436

**Prepared By:** Prepared for use in Canada by EH&S, Hazard Communications.  
**Revision** 2013.12.18  
**Print Date:** 12/19/2013

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:** Characteristic

### 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. Isolate area. Keep upwind of spill. Contents under pressure.

**Potential Health Effects**

**Eye Contact:** May cause moderate eye irritation. May cause slight corneal injury. Vapor of amines may cause swelling of the cornea resulting in visual disturbances such as blurred or hazy vision. Bright lights may appear to be surrounded by halos. Effects may be delayed and typically disappear spontaneously.

**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. Signs and symptoms of excessive exposure may include: May cause lacrimation (tears). Salivation. Convulsions. Tremors. Increased activity (hyperactivity).

**Aspiration hazard:** Based on physical properties, not likely to be an aspiration hazard.

**Effects of Repeated Exposure:** Contains component(s) which have been reported to cause effects on the following organs in animals: Liver. Lung.

**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.

**Reproductive Effects:** For the minor component(s): In laboratory animal studies, effects on reproduction have been seen only at doses that produced significant toxicity to the parent animals.

**3. Composition/information on ingredients**

Component	CAS #	Amount WW
1,1,1,2-Tetrafluoroethane	811-97-2	>= 15.0 - <= 40.0 %
Sucrose , propylene oxide	9049-71-2	>= 15.0 - <= 40.0 %
Tris(1-chloro-2-propyl) phosphate	13674-84-5	>= 15.0 - <= 40.0 %
Polyalkylene glycol	9003-11-6	>= 5.0 - <= 13.0 %
Tris(dimethylamino)propyl amine	33329-35-0	>= 0.5 - <= 1.5 %

Amounts are presented as percentages by weight.

**4. First-aid measures****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.

**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.

**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.

**Indication of immediate medical attention and special treatment needed**

Maintain adequate ventilation and oxygenation of the patient. 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). Exposure may increase "myocardial irritability". Do not administer sympathomimetic drugs such as epinephrine unless absolutely necessary. Exposure to amine vapors may cause minor transient edema of the corneal epithelium (glauropsia) with blurred vision, blue haze and halos around bright objects. Effects disappear in a few hours and temporarily reduce ability to drive vehicles. No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

**5. Fire Fighting Measures****Suitable extinguishing media**

Water fog or fine spray. Dry chemical fire extinguishers. Carbon dioxide fire extinguishers. Foam. Alcohol resistant foams (ATC type) are preferred. General purpose synthetic foams (including AFFF) or protein foams may function, but will be less effective.

**Extinguishing Media to Avoid:** Do not use direct water stream. May spread fire.

**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: Carbon monoxide. Carbon dioxide. Hydrogen halides.

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

**Advice for firefighters**

**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. Contain fire water run-off if possible. Fire water run-off, if not contained, may cause environmental damage. Review the "Accidental Release Measures" and the "Ecological Information" sections of this (M)SDS.

**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.

See Section 9 for related Physical Properties

## 6. Accidental Release Measures

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

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

**Methods and materials for containment and cleaning up:** 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.

## 7. Handling and Storage

### Handling

**General Handling:** Avoid contact with eyes. Avoid breathing vapor. Wash thoroughly after handling. Use with adequate ventilation. Keep container closed. Do not enter confined spaces unless adequately ventilated. This material is hygroscopic in nature. 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 in a dry place. Avoid prolonged exposure to heat and air. Protect from atmospheric moisture. Blowing agent may migrate from product and accumulate in some storage situations. Elevated temperatures can cause pressure buildup in closed containers due to the release of blowing agents. Store in the following material(s): Carbon steel. Stainless steel. Polypropylene. Polyethylene-lined container. Teflon. Glass-lined container. Aluminum. Plasite 3066 lined container. Plasite 3070 lined container. 316 stainless steel. See Section 10 for more specific information.

**Storage Period:**

6 Months

**Storage temperature:**

25 °C

## 8. Exposure Controls / Personal Protection

### Exposure Limits

Component	List	Type	Value
1,1,1,2-Tetrafluoroethane	AIHA WEEL	TWA	4,240 mg/m <sup>3</sup> 1,000 ppm

*Consult local authorities for recommended exposure limits.*

### Personal Protection

**Eye/Face Protection:** Use chemical goggles. If exposure causes eye discomfort, use a full-face respirator.

**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

<b>Appearance</b>	
<b>Physical State</b>	Liquid.
<b>Color</b>	White
<b>Odor</b>	Characteristic
<b>Odor Threshold</b>	No test data available
<b>pH</b>	Not applicable
<b>Melting Point</b>	No test data available
<b>Freezing Point</b>	No test data available
<b>Boiling Point (760 mmHg)</b>	> 100 °C <i>Estimated.</i>
<b>Flash Point - Closed Cup</b>	> 100 °C <i>Estimated.</i>
<b>Evaporation Rate (Butyl Acetate = 1)</b>	No test data available
<b>Flammability (solid, gas)</b>	Not applicable to liquids
<b>Flammable Limits In Air</b>	<b>Lower:</b> No test data available <b>Upper:</b> No test data available
<b>Vapor Pressure</b>	2,140 kPa @ 55 °C <i>Supplier</i>
<b>Vapor Density (air = 1)</b>	No test data available
<b>Specific Gravity (H<sub>2</sub>O = 1)</b>	1.18 21 °C/21 °C <i>Estimated.</i>
<b>Solubility in water (by weight)</b>	Slightly soluble
<b>Partition coefficient, n-octanol/water (log Pow)</b>	No data available for this product. See Section 12 for individual component data.
<b>Autoignition Temperature</b>	No test data available
<b>Decomposition Temperature</b>	No test data available
<b>Explosive properties</b>	Not explosive
<b>Oxidizing properties</b>	No

## 10. Stability and Reactivity

### Reactivity

No dangerous reaction known under conditions of normal use.

### Chemical stability

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

### Possibility of hazardous reactions

Polymerization will not occur by itself.

**Conditions to Avoid:** Product can oxidize at elevated temperatures. Elevated temperatures can cause pressure buildup in closed containers due to the release of blowing agents. Generation of gas during decomposition can cause pressure in closed systems.

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

### 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: Carbon dioxide. Alcohols. Ethers. Hydrocarbons. Hydrogen halides. Ketones. Polymer fragments.

## 11. Toxicological Information

### Acute Toxicity

#### Ingestion

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

#### Dermal

The dermal LD50 has not been determined.

Estimated. LD50, rabbit > 2,000 mg/kg

#### Inhalation

The LC50 has not been determined.

### Eye damage/eye irritation

May cause moderate eye irritation. May cause slight corneal injury. Vapor of amines may cause swelling of the cornea resulting in visual disturbances such as blurred or hazy vision. Bright lights may appear to be surrounded by halos. Effects may be delayed and typically disappear spontaneously.

### Skin corrosion/irritation

Brief contact may cause slight skin irritation with local redness.

### Sensitization

#### Skin

Based on information for component(s): Did not cause allergic skin reactions when tested in guinea pigs.

#### Respiratory

No relevant data found.

### Repeated Dose Toxicity

Contains component(s) which have been reported to cause effects on the following organs in animals: Liver. Lung.

### Chronic Toxicity and Carcinogenicity

Contains component(s) which 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.

### Reproductive Toxicity

For the minor component(s): In laboratory animal studies, effects on reproduction have been seen only at doses that produced significant toxicity to the parent animals.

### Genetic Toxicology

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

#### Component Toxicology - 1,1,1,2-Tetrafluoroethane

Inhalation	LC50, 4 h, rat > 500,000 ppm
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#### Component Toxicology - Tris(1-chloro-2-propyl) phosphate

Inhalation	No deaths occurred at this concentration. LC50, 4 h, Aerosol, rat > 7 mg/l
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#### Component Toxicology - Tris(dimethylamino)propyl amine

Inhalation	LC50, 4 h, rat 6.9 mg/l
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## 12. Ecological Information

### Toxicity

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

#### Aquatic Invertebrate Acute Toxicity

EC50, *Daphnia magna* (Water flea), 48 h, immobilization: 980 mg/l

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

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, *Danio rerio* (zebra fish), static test, 96 h: 6,310 mg/l

#### Aquatic Invertebrate Acute Toxicity

EC50, *Daphnia magna* (Water flea), static test, 48 h, immobilization: 9,890 mg/l

#### Aquatic Plant Toxicity

NOEC, *Desmodesmus subspicatus* (green algae), static test, biomass growth inhibition, 72 h: 100 mg/l

#### Aquatic Invertebrates Chronic Toxicity Value

*Daphnia magna* (Water flea), semi-static test, 21 d, mortality, NOEC: >= 10 mg/l, LOEC: > 10 mg/l

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

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

#### Fish Acute & Prolonged Toxicity

LC50, *Lepomis macrochirus* (Bluegill sunfish), static test, 96 h: 84 mg/l

#### Aquatic Invertebrate Acute Toxicity

EC50, *Daphnia magna* (Water flea), 48 h, immobilization: 131 mg/l

#### Aquatic Plant Toxicity

ErC50, *Pseudokirchneriella subcapitata* (green algae), static test, Growth rate inhibition, 96 h: 82 mg/l

#### Toxicity to Micro-organisms

EC50, activated sludge test (OECD 209), Respiration inhibition, 3 h: 784 mg/l

#### Aquatic Invertebrates Chronic Toxicity Value

*Daphnia magna* (Water flea), semi-static test, 21 d, number of offspring, NOEC: 32 mg/l, LOEC: > 32 mg/l

#### Data for Component: **Polyalkylene glycol**

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: Tris(dimethylamino)propyl amine**

Material is practically non-toxic to fish on an acute basis (LC50 > 100 mg/L).

**Fish Acute & Prolonged Toxicity**

LC50, Oryzias latipes (Orange-red killifish), static test, 48 h: 430 mg/l

**Persistence and Degradability**

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

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

**OECD Biodegradation Tests:**

Biodegradation	Exposure Time	Method	10 Day Window
4 %	28 d	OECD 301D Test	fail

**Indirect Photodegradation with OH Radicals**

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

Theoretical Oxygen Demand: 0.47 mg/mg

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

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

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

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

**OECD Biodegradation Tests:**

Biodegradation	Exposure Time	Method	10 Day Window
14 %	28 d	OECD 301E Test	fail
95 %	64 d	OECD 302A Test	Not applicable

**Indirect Photodegradation with OH Radicals**

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

Theoretical Oxygen Demand: 1.17 mg/mg

**Data for Component: Polyalkylene glycol**

Based on information for a similar material: Biodegradation under aerobic laboratory conditions is below detectable limits (BOD20 or BOD28/ThOD < 2.5%).

**Data for Component: Tris(dimethylamino)propyl amine**

Material is not readily biodegradable according to OECD/EEC guidelines.

**Indirect Photodegradation with OH Radicals**

Rate Constant	Atmospheric Half-life	Method
3.40E-10 cm <sup>3</sup> /s	0.031 d	Estimated.

Theoretical Oxygen Demand: 3.41 mg/mg

**Bioaccumulative potential**

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

**Bioaccumulation:** Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

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

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

**Bioaccumulation:** Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

**Partition coefficient, n-octanol/water (log Pow):** -3.38 - -3.25 Estimated.



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

**Bioaccumulation:** Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

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

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

Data for Component: **Polyalkylene glycol**

**Bioaccumulation:** No bioconcentration is expected because of the relatively high molecular weight (MW greater than 1000).

Data for Component: **Tris(dimethylamino)propyl amine**

**Bioaccumulation:** Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

**Partition coefficient, n-octanol/water (log Pow):** 0.6 Estimated.

**Mobility in soil**Data for Component: **1,1,1,2-Tetrafluoroethane**

**Mobility in soil:** Potential for mobility in soil is high (Koc between 50 and 150).

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

**Henry's Law Constant (H):** 5.00E-02 atm\*m3/mole; 25 °C Measured

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

**Mobility in soil:** No data available.

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

**Mobility in soil:** Potential for mobility in soil is slight (Koc between 2000 and 5000).

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

**Henry's Law Constant (H):** < 1.35E-05 atm\*m3/mole; 25 °C Estimated.

Data for Component: **Polyalkylene glycol**

**Mobility in soil:** No data available.

Data for Component: **Tris(dimethylamino)propyl amine**

**Mobility in soil:** Expected to be relatively immobile in soil (Koc > 5000)., 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.

**Partition coefficient, soil organic carbon/water (Koc):** > 5,000 Estimated.

**Henry's Law Constant (H):** 3.01E-14 atm\*m3/mole Estimated.

## 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

**TDG Small container**

**Proper Shipping Name:** CHEMICAL UNDER PRESSURE, N.O.S.

**Technical Name:** FLUORINATED HYDROCARBONS

**Hazard Class:** 2.2 **ID Number:** UN3500

**TDG Large container**

**Proper Shipping Name:** CHEMICAL UNDER PRESSURE, N.O.S.

**Technical Name:** FLUORINATED HYDROCARBONS**Hazard Class:** 2.2 **ID Number:** UN3500**IMDG****Proper Shipping Name:** CHEMICAL UNDER PRESSURE, N.O.S.**Technical Name:** FLUORINATED HYDROCARBONS**Hazard Class:** 2.2 **ID Number:** UN3500**EMS Number:** F-C,S-V**Marine pollutant:** No**ICAO/IATA****Proper Shipping Name:** CHEMICAL UNDER PRESSURE, N.O.S.**Technical Name:** FLUORINATED HYDROCARBONS**Hazard Class:** 2.2 **ID Number:** UN3500 **Cargo Packing Instruction:** 218**Passenger Packing Instruction:** 218**15. Regulatory Information****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.

**Hazardous Products Act Information: CPR Compliance**

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: WHMIS Classification**

This product is not a "Controlled Product" under WHMIS.

**16. Other Information****Recommended Uses and Restrictions****Identified uses**

Polyurethane foam.

**Revision**

Identification Number: 64142 / 0000 / Issue Date 2013.12.18 / Version: 3.0

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
VOL/VOL	Volume/Volume

*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.*