



## 1) PRODUCT AND COMPANY IDENTIFICATION

THE DOW CHEMICAL COMPANY  
Midland Michigan 48674  
USA

24-Hour Emergency Phone Number: 989-636-4400

Customer Service: 800-366-4740

PRODUCT NAME : FROTH-PAK (TM) 12.0 B 1.75 Can Polyurethane Spray Foam System

MATERIAL TYPE : Polyol blend

ISSUE DATE : 07/19/2007

REVISION DATE : 08/10/2004

## 2) COMPOSITION/INFORMATION ON INGREDIENTS

Ingredient	CAS Number	%
Polyols	mixture	40-70%
Amine Polyol	52019-35-9	15-40%
Chlorodifluoromethane	75-45-6	10-30%

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## 3) HAZARDS IDENTIFICATION

### EMERGENCY OVERVIEW

Vapors reduce oxygen available for breathing and are heavier than air.

May cause severe eye burns and skin irritation.

### EYE

May cause severe eye irritation. May cause moderate corneal injury. May cause permanent impairment of vision, even blindness. Elevated temperatures may generate vapor levels sufficient to cause eye irritation.

### SKIN

Repeated exposure may cause skin irritation. A single prolonged exposure is not likely to result in the material being absorbed through skin in harmful amounts.

### INGESTION

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

### INHALATION

Exposure to fluorocarbons at high concentrations may effect the nervous system and produce a rapid anesthetic effect. The dense vapor of this material can reduce the oxygen available for breathing and produce symptoms such as headache, dizziness, drowsiness, cyanosis and lack of muscle control followed by collapse. Prolonged exposure to an oxygen-deficient atmosphere may be fatal. Inhalation of this material may cause an increase in the sensitivity of the heart to adrenaline, which could result in irregular heart beats and reduced heart function.

### SYSTEMIC EFFECTS

Excessive exposure to fluorocarbons may effect the central nervous system and produce anesthetic and narcotic-like symptoms.

## 4) FIRST-AID MEASURES

### EYE

Irrigate eyes immediately with water for at least 30 minutes. Remove contacts after the first five minutes and then continue washing. Obtain medical treatment immediately.

### **SKIN**

Remove material from skin immediately by washing with soap and plenty of water. Remove contaminated clothing and shoes while washing. Seek medical attention if irritation persists.

### **INGESTION**

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

### **INHALATION**

Remove to fresh air if effects occur. Consult a Physician.

### **NOTE TO PHYSICIAN**

No specific antidote. Supportive care. Treatment based on judgment of the physician in response to reactions of the patient.

## **5) FIRE-FIGHTING MEASURES**

### **FLAMMABLE PROPERTIES**

Flash point: >212 deg. F (100 deg. C)

### **HAZARDOUS COMBUSTION PRODUCTS**

Incomplete combustion may lead to the build-up of toxic pyrolysis products. Complete combustion will result in: Carbon oxides, Nitrogen oxides, Water, Ammonia and trace amounts of Hydrogen Cyanide.

Additional combustion products may include ammonia, hydrochloric acid, hydrofluoric acid, chlorine, fluorine, phosgene and phosphorous oxides.

### **OTHER FLAMMABILITY INFORMATION**

SPECIFIC FIRE OR EXPLOSION HAZARDS: Will support combustion.

### **EXTINGUISHING MEDIA**

Use carbon dioxide, dry chemical, foam, water fog or fine spray. Alcohol resistant foams (ATC type) are preferred if available. General purpose synthetic foams (including AFFF) or protein foams may function, but much less effective. Do not use direct water stream which can spread fire.

### **PROTECTIVE EQUIPMENT - FIRE FIGHTERS**

Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, pants, boots, and gloves). If protective equipment is not available or not used, fight fire from a protected location or safe distance.

## **6) ACCIDENTAL RELEASE MEASURES**

### **PROTECT PEOPLE**

Isolate area. May be a slipping hazard. Wear adequate personal protective equipment

### **PROTECT THE ENVIRONMENT**

Contain material to prevent contamination of ground and surface water. Spills should be collected to prevent contamination of waterways. Recover if possible, or dispose of according to applicable regulations.

### **CLEAN-UP**

Spills should be contained by, and covered with large quantities of sand, earth or any other readily available absorbent material, which is then brushed in vigorously to assist absorption. The mixture can then be collected into drums and removed for disposal. Wash residues from area with soap and water and rinse down. Contaminated water should be retained, not being allowed to flow into ground or surface water.

## **7) HANDLING AND STORAGE**

## **HANDLING**

CAUTION: Contents under pressure. Avoid open flames. Do not puncture or incinerate. Since polyols are handled together with diisocyanates, proper distinction between these two kinds of products is essential in order to avoid undesired mixing resulting in uncontrolled polymerization.

## **STORAGE**

Keep container tightly closed; product is hygroscopic.

- Storage Temperature: 60-90F (15.6-32.2C)

## **8) EXPOSURE CONTROL/PERSONAL PROTECTION**

### **ENGINEERING CONTROLS**

Use only with adequate ventilation. Local exhaust ventilation may be necessary for some operations.

### **EYE/FACE PROTECTION**

Use chemical goggles. If vapor exposure causes eye discomfort, use a full-face respirator. Eye wash fountain should be located in immediate work area.

### **SKIN PROTECTION**

Use gloves impervious to this material. Wear clean, long-sleeved, body covering clothing. After work and before eating, drinking or smoking wash and clean yourself carefully with soap and water. Contaminated clothing should be washed and/or dry cleaned before re-use.

### **RESPIRATORY PROTECTION**

For most conditions, no respiratory protection is needed; however, if handling at elevated temperature without sufficient ventilation or in presence of aerosols, use an approved air-purifying respirator. Atmospheric levels should be maintained below the exposure guideline.

### **EXPOSURE GUIDELINES(S)**

Chlorofluoromethane (HCFC-22): ACGIH Threshold Limit Value (TLV) is 1000 ppm TWA-8 hours.

## **9) PHYSICAL AND CHEMICAL PROPERTIES**

### **APPEARANCE/PHYSICAL STATE**

liquid

### **VAPOR PRESSURE**

2500 mm Hg at 21 deg C. (70 deg F).

### **SPECIFIC GRAVITY**

1.20 @ 25C

## **10) STABILITY AND REACTIVITY**

### **CHEMICAL STABILITY**

Stable under recommended storage conditions.

### **CONDITIONS TO AVOID**

Product can oxidize or decompose at elevated temperatures.

Avoid open flames, welding arcs or other high temperature sources which induce thermal decomposition.

Storage at temperatures higher than those recommended may lead to pressure build-up in closed containers. Do not store in open sunshine.

### **INCOMPATIBILITY WITH OTHER MATERIALS**

Avoid contact with oxidizing materials and strong acids. Avoid unintended contact with isocyanates. The reaction of polyols and isocyanates generates heat.

Strong acids and oxidizers.

#### **HAZARDOUS DECOMPOSITION PRODUCTS**

None under normal conditions of storage and use.

#### **HAZARDOUS POLYMERIZATION**

Will not occur by itself.

### **11) TOXICOLOGICAL INFORMATION**

#### **TOXICOLOGICAL INFORMATION**

Chlorodifluoromethane (HCFC-22): A slightly increased tumor incidence has been observed in one study using male rats exposed to 50,000 ppm HCFC-22 (50 times the current ACGIH TLV). The test material used in that study contained impurities, among which was HCFC-31, a known carcinogen and mutagen. No increased tumor incidences have been observed in female rats or in mice of both sexes. The data do not indicate that HCFC-22 constitutes a carcinogenic hazard to humans.

#### **ACUTE**

Excessive exposure to HCFC-22 (Chlorodifluoromethane) may cause depression of the central nervous system, or possible asphyxiation.

#### **SKIN**

Amine polyol LD50 for skin absorption in rabbits is 12,800 mg/kg.

Polyol: LD50 in rabbits is >2000 mg/kg.

#### **INGESTION**

Amine polyol oral LD50 for rats is 1370 mg/kg.

Polyol: LD50 in rats is >2000 mg/kg.

#### **MUTAGENICITY**

Mutagenicity studies on amine polyol was negative.

### **12) ECOLOGICAL INFORMATION**

#### **MOVEMENT & PARTITIONING**

Bioconcentration is low (BCF less than 100 or Log Pow less than 3). Log octanol/water partition coefficient (log Pow) is 0.2.

Volatilization from water to air is expected for HCFC-22, chlorodifluoromethane.

#### **DEGRADATION & PERSISTENCE**

Based on the stringent test guidelines, the polyol cannot be considered as readily biodegradable; however, these results do not necessarily mean that the material is not biodegradable under environmental conditions.

#### **ECOTOXICITY**

Based largely or completely on information for similar material. Material is moderately toxic to aquatic organisms on an acute basis (LC50/EC50 between 1 and 10 mg/L in most sensitive species).

### **13) DISPOSAL CONSIDERATIONS**

#### **DISPOSAL**

DO NOT DUMP INTO ANY SEWERS, ON THE GROUND, OR INTO ANY BODY OF WATER. All disposal methods must be in compliance with all Federal, State/Provincial and local laws and regulations.

Regulations may vary in different locations. Waste characterizations and compliance

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with applicable laws are the responsibility solely of the waste generator. THE DOW CHEMICAL COMPANY HAS NO CONTROL OVER THE MANAGEMENT PRACTICES OR MANUFACTURING PROCESSES OF PARTIES HANDLING OR USING THIS MATERIAL. THE INFORMATION PRESENTED HERE PERTAINS ONLY TO THE PRODUCT AS SHIPPED IN ITS INTENDED CONDITION AS DESCRIBED IN MSDS SECTION 2 (Composition/Information On Ingredients).

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

As a service to its customers, Dow can provide names of information resources to help identify waste management companies and other facilities which recycle, reprocess or manage chemicals or plastics, and that manage used drums. Telephone Dow's Customer Information Center at 800-258-2436 or 989-832-1556 for further details.

## **14) TRANSPORT INFORMATION**

### **US D.O.T.**

This product is not regulated when pressures are less than 40 psi. When greater than 40 psi, the classification is: Compressed Gases, N.O.S. ( chlorodifluoromethane), 2.2 UN1956.

### **CANADIAN TDG**

This product is not regulated when pressures are less than 40 psi. When greater than 40 psi, the classification is: Compressed Gases, N.O.S. ( chlorodifluoromethane), 2.2 UN1956.

## **15) REGULATORY INFORMATION**

### **NOTICE**

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

### **REGULATORY INFORMATION**

#### U.S. REGULATIONS

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

CHEMICAL NAME CAS NUMBER

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Chlorodifluoromethane 75-45-6

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

An immediate health hazard

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TOXIC SUBSTANCES CONTROL ACT (TSCA):

All ingredients are on the TSCA inventory.

OSHA HAZARD COMMUNICATION STANDARD:

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

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

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

Category:

Chemical Name CAS# RQ

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NONE

CALIFORNIA PROPOSITION 65: The following components are known to the state of California as causing cancer and/or birth defects:

NONE

PENNSYLVANIA STATE RIGHT TO KNOW HAZARDOUS PRODUCTS LIST:

NONE

CANADIAN REGULATIONS

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

D2B - eye or skin irritant

B3 - compressed gas

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

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

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

COMPONENTS: CAS #

NONE

CANADIAN ENVIRONMENTAL PROTECTION ACT (CEPA):

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All substances in this product are listed on the Canadian Domestic Substance List (DSL).

**16) OTHER INFORMATION**

**OTHER INFORMATION**

No other information.

(TM), \*, or (R) Indicates a trademark of The Dow Chemical Company.