



# Material Safety Data Sheet

The Dow Chemical Company  
Midland, Michigan 48674  
Emergency 989.636.4400

## 1. CHEMICAL PRODUCT & COMPANY IDENTIFICATION Page: 1

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

Product: TRYMER\* 6000 RIGID POLYISOCYANURATE INSULATION

Product Code: 40090

Effective Date: 03/25/98 Date Printed: 03/20/02 MSD: 004823

The Dow Chemical Company, Midland, MI 48674

Customer Information Center: 800-258-2436

## 2. COMPOSITION/INFORMATION ON INGREDIENTS

Polymerized polyurethane modified poly-	
isocyanurate rigid cellular plastic	82.96%
1,1-Dichloro-1-fluoroethane CAS# 001717-00-6	3.18%

## 3. HAZARDS IDENTIFICATION

### EMERGENCY OVERVIEW

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\* Rigid cellular foam. Odorless. No significant immediate hazards \*

\* For emergency response are known. \*

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

EYE: Solid or dust may cause irritation or corneal injury due to mechanical action.

SKIN: Essentially nonirritating to skin. Skin absorption is unlikely due to physical properties.

INGESTION: Ingestion is unlikely due to physical state. May cause choking if swallowed.

INHALATION: Dust may cause irritation to upper respiratory tract. Signs and symptoms of excessive exposure to 1,1-dichloro-1-fluoroethane may be anesthetic or narcotic effects. Signs and

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symptoms of excessive exposure to 1,1-dichloro-fluoroethane may be central nervous system effects. Excessive exposure to 1,1-dichloro-fluoroethane may increase sensitivity to epinephrine and increase myocardial irritability (irregular heartbeats). Concentrations of the blowing agent anticipated incidental to proper industrial handling are not expected to cause acute inhalation effects.

SYSTEMIC (OTHER TARGET ORGAN) EFFECTS: Repeated exposures to dusts of this material are not anticipated to result in systemic toxicity or permanent lung injury; however, excessive exposures may cause less severe respiratory effects. In laboratory animals, repeated inhalation exposure to 8000 ppm dichlorofluoroethane produced no adverse effects; higher concentrations produced only minor biochemical changes such as an increase in cholesterol.

CANCER INFORMATION: Benign testicular tumors were observed in rats exposed to high concentrations (5000 ppm or higher) of dichlorofluoroethane for 2 years; no tumors were observed at 1500 ppm. The significance of these findings is considered equivocal. Direct administration (injection) of polyurethane dust into lungs of rats resulted in benign tumors; this route of administration delivers large particles to the lungs and is not relevant to industrial exposure.

TERATOLOGY (BIRTH DEFECTS) : Contains component(s) which did not cause birth defects; other fetal effects occurred only at doses toxic to the mother. The component is 1,1-dichloro-1-fluoroethane.

REPRODUCTIVE EFFECTS: In a 2-generation reproduction study, no reproductive effects were observed in rats exposed to 8,000 ppm dichlorofluoroethane. Slight effects were observed in rats exposed to 20,000 ppm. Effects include minimal decreases in the number of litters and in litter size, and delayed sexual maturation of male offspring believed to be secondary to the slower growth rate of the animals.

**4. FIRST AID**

EYE: Flush eyes with plenty of water; mechanical effects only.

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SKIN: Wash off in flowing water or shower.

INGESTION: No adverse effects anticipated by this route of exposure.

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

NOTE TO PHYSICIAN: Exposure may increase "myocardial irritability". Do not administer sympathomimetic drugs unless absolutely necessary. No specific antidote. Supportive care. Treatment based on judgment of the physician in response to reactions of the patient.

**5. FIRE FIGHTING MEASURES****FLAMMABLE PROPERTIES**

FLASH POINT: Not applicable

METHOD USED: Not applicable

**FLAMMABILITY LIMITS**

LFL: Not applicable.

UFL: Not applicable.

HAZARDOUS COMBUSTION PRODUCTS: In smoldering or flaming conditions, carbon monoxide, carbon dioxide, and carbon are generated. Evolution of small amounts of hydrogen halides occur when burned or heated over 250 C (482 F). Under fire conditions polymers decompose. The smoke may contain polymer fragments of varying compositions in addition to unidentified toxic and/or irritating compounds.

Studies have shown that the products of combustion of this foam are not more acutely toxic than the products of combustion of common building materials, such as wood.

OTHER FLAMMABILITY INFORMATION: Dense smoke is produced when product burns. Mechanical handling can cause formation of dusts. To reduce the potential for dust explosion, do not permit dust to accumulate.

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This urethane foam product is combustible and should be protected from flame and other high heat sources. It should be installed with code acceptable thermal barriers or used in approved alternate constructions. For more information, contact Dow.

EXTINGUISHING MEDIA: Water fog, carbon dioxide, dry chemical.

FIRE FIGHTING INSTRUCTIONS: Keep people away. Isolate fire area and deny unnecessary entry. If material is molten, do not apply direct water stream. Use fine water spray or foam. Cool surroundings with water to localize fire zone.

PROTECTIVE EQUIPMENT FOR FIRE FIGHTERS: Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting equipment (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 (See Section 15 for Regulatory Information)**

PROTECT PEOPLE: See MSDS Section 10 for information on stability and reactivity.

PROTECT THE ENVIRONMENT: For additional information see Regulatory Information, MSDS Section 15.

CLEANUP: Sweep up. Place in properly labeled containers.

**7. HANDLING AND STORAGE**

HANDLING: This product is combustible and may constitute a fire hazard if improperly used or installed. When installed, this product should be adequately protected as directed by national building regulations or instructions in the specific application brochure. No smoking, open flame or sources of ignition in handling and storage area.

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Mechanical handling equipment can cause formation of dusts. Maintain good housekeeping. Layers of flammable dusts should not be permitted to accumulate. Keep dust away from ignition sources. Provide adequate local ventilation and appropriate dust handling systems.

**WARNING:** Fabrication methods which involve cutting into this product will release blowing agent remaining in the cells. Provide adequate ventilation to assure that localized concentrations in release areas are maintained below the exposure guideline. Concentration of the blowing agents anticipated incidental to proper handling are expected to be well below those which cause acute inhalation effects and below exposure guidelines.

**STORAGE:** Keep away from possible ignition sources. Keep away from open flames and spark producing equipment. Store in a cool, well ventilated area, away from sources of ignition. Proper ventilation is recommended to control dust formation.

**8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

**ENGINEERING CONTROLS:** Good general ventilation should be sufficient for most conditions. Local exhaust ventilation may be necessary for some operations.

**PERSONAL PROTECTIVE EQUIPMENT**

**EYE/FACE PROTECTION:** Use safety glasses. If there is a potential for exposure to particles which could cause mechanical injury to the eye, wear chemical goggles.

**SKIN PROTECTION:** No precautions other than clean body-covering clothing should be needed.

**RESPIRATORY PROTECTION:** In dusty atmospheres, use an approved dust respirator.

**EXPOSURE GUIDELINE (S) :** 1,1-Dichloro-1-fluoroethane: AIHA WEEL is 500 ppm.

For particulates which have no specific guideline, the ACGIH TLV is 10 mg/m<sup>3</sup> and the OSHA PEL is 15 mg/m<sup>3</sup> total, 5 mg/m<sup>3</sup>

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respirable.

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

**9. PHYSICAL AND CHEMICAL PROPERTIES**

APPEARANCE: Rigid cellular foam.  
ODOR: None.  
VAPOR PRESSURE: Not applicable.  
VAPOR DENSITY: Not applicable.  
BOILING POINT: Not applicable.  
SOLUBILITY IN WATER: Not applicable  
SPECIFIC GRAVITY: Not applicable.

**10. STABILITY AND REACTIVITY**

CHEMICAL STABILITY: Stable at typical use temperatures

CONDITIONS TO AVOID: Avoid temperatures above 300 F (149 C) .

INCOMPATIBILITY WITH OTHER MATERIALS: Avoid contact with oxidizing materials. Aromatic hydrocarbons, aliphatic hydrocarbons, esters, amines, aldehydes.

HAZARDOUS DECOMPOSITION PRODUCTS: Hazardous decomposition products depend upon temperature, air supply and the presence of other materials. Hazardous decomposition products may include and are not limited to: aromatic compounds, aldehydes, 4-vinylcyclohexene, ethyl benzene, styrene, hydrogen bromide, hydrogen fluoride, and hydrogen chloride.

HAZARDOUS POLYMERIZATION: Will not occur

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

MUTAGENICITY (EFFECTS ON GENETIC MATERIAL) : For 1,1-dichloro-1-fluoroethane, in vitro mutagenicity studies were negative in some cases and positive in other cases. Animal mutagenicity studies were negative. The weight of evidence from a battery of mutagenicity studies suggest that this material has a very low potential to affect genetic material.

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

**MOVEMENT & PARTITIONING:** No bioconcentration is expected because of the relatively high molecular weight (MW greater than 1000) .In the terrestrial environment, material is expected to remain in the soil. In the aquatic environment, material is expected to float.

**DEGRADATION & PERSISTENCE:** This water insoluble polymeric solid is expected to be inert in the environment. Surface photo-degradation is expected with exposure to sunlight. No appreciable biodegradation is expected.

**ECOTOXICITY:** Not expected to be acutely toxic.

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

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

FOR UNUSED & UNCONTAMINATED PRODUCT, the preferred options include sending to a licensed, permitted: recycler, reclaimer, incinerator, landfill.

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

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for further details

**14. TRANSPORT INFORMATION**

DEPARTMENT OF TRANSPORTATION (D.O.T.) :  
 For D.O.T. regulatory information, if required, consult  
 transportation regulations, product shipping papers or contact your  
 Dow representative.

CANADIAN TDG INFORMATION:  
 This product is not regulated by TDG when shipped domestically  
 by land.

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

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

**U.S. REGULATIONS**

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

<u>CHEMICAL NAME</u>	<u>CAS NUMBER</u>	<u>CONCENTRATION</u>
1,1-DICHLORO-1-FLUOROETHANE	001717-00-6	3 - 18%

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SARA HAZARD CATEGORY: This product has been reviewed  
 according to the

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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:

Not to have met any hazard category

**CANADIAN REGULATIONS**

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

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

**16. OTHER INFORMATION**

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

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The Information Herein is Given In Good Faith, But No Warranty,  
Express Or Implied, Is Made. Consult The Dow Chemical Company For  
Further Information.