



12.1

The Dow Chemical Company  
Midland, Michigan 48674

# Material Safety Data Sheet

## 1. CHEMICAL PRODUCT & COMPANY IDENTIFICATION

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

Product: STYROFOAM\* 8.125 INCH WHITE FLORAL & CRAFT EDGE TRIM EXTRUDE  
D BILLET

Product Code: 52935

Effective Date: 01/24/02 Date Printed: 01/25/02 MSD: 006575

The Dow Chemical Company, Midland, MI 48674

Customer Information Center: 800-258-2436

## 2. COMPOSITION/INFORMATION ON INGREDIENTS

Polystyrene	CAS# 009003-53-6
Chlorodifluoroethane	CAS# 000075-68-3
Chlorodifluoromethane	CAS# 000075-45-6
Halogenated flame retardant	

## 3. HAZARDS IDENTIFICATION

### EMERGENCY OVERVIEW

\*\*\*\*\*  
 \* Rigid white foam billet. Odorless. No significant immediate \*  
 \* hazards for emergency response are known. \*  
 \*\*\*\*\*

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

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

**SKIN:** Mechanical injury only. Essentially nonirritating to skin. Skin absorption is unlikely due to physical properties.

**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. May cause choking or blockage of the digestive tract if swallowed.

**INHALATION:** Dust may cause irritation to upper respiratory tract (nose and throat). Vapors/fumes released during thermal operations such as hot wire cutting may cause eye

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and respiratory irritation. High concentrations of the blowing agents (> 5000 ppm) may cause central nervous system, anesthetic or narcotic effects & cardiac sensitization (irregular heartbeats). In animals, excessive exposure to chlorodifluoroethane (HCFC 142b) has caused low blood pressure, respiratory stimulation and chest tightness (bronchoconstriction). Concentrations of the blowing agents anticipated incidental to proper handling are expected to be well below those which cause the acute inhalation effects and below exposure guidelines.

SYSTEMIC (OTHER TARGET ORGAN) EFFECTS: No relevant information found.

CANCER INFORMATION: Neither polystyrene foam dust nor chlorodifluoroethane caused cancer in long-term animal studies. Increased tumor incidence was observed in male rats after lifetime exposure to high concentrations (50,000 ppm) of chlorodifluoromethane (HCFC-22). Long-term animal studies at lower concentrations (up to 10,000 ppm) have been negative.

TERATOLOGY (BIRTH DEFECTS): No birth defects were seen in animal studies with chlorodifluoroethane. Chlorodifluoromethane (HCFC-22) caused birth defects in animals only at doses toxic to the mother.

REPRODUCTIVE EFFECTS: Contains component(s) which did not interfere with reproduction in animal studies. The component(s) is/are chlorodifluoromethane (HCFC-22).

#### 4. FIRST AID

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

SKIN: Wash off in flowing water or shower.

INGESTION: No adverse effects anticipated by this route of exposure incidental to proper industrial handling.

INHALATION: Remove to fresh air. 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

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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: 670F, 354C Flash Ignition Temperature.

METHOD USED: ASTM D1629 Proc. B.

FLAMMABILITY LIMITS

LFL: Not applicable

UFL: Not applicable

HAZARDOUS COMBUSTION PRODUCTS: Hazardous combustion products may include and are not limited to carbon dioxide and carbon monoxide.

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

FIRE FIGHTING INSTRUCTIONS: This polystyrene foam plastic product is combustible. This product contains a flame retardant additive to inhibit accidental ignition from small fire sources. However, once ignited this product will burn, emitting a dense black smoke. During shipping, storage, and use this product must be protected from flame or other high heat sources. During certain fabrication operations such as cutting and grinding, blowing agents contained in the foam and dust may be released. Accumulation of blowing agents or dust in air could present flammability and explosion concerns. Provide adequate ventilation, and appropriate dust handling systems where needed. This product should not be shipped, stored or used in virtually airtight spaces to prevent the build-up of combustible vapors.

PROTECTIVE EQUIPMENT FOR FIRE FIGHTERS: Wear positive-pressure, self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, pants, boots, and gloves).

6. ACCIDENTAL RELEASE MEASURES (See Section 15 for Regulatory Information)

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**PROTECT THE ENVIRONMENT:** Fire water run off may be toxic.

**CLEANUP:** Pick up, or if dust or in small pieces, sweep up, and place in suitable container for disposal.

**7. HANDLING AND STORAGE**

**HANDLING:** Mechanical handling equipment can cause formation of dusts. Maintain good housekeeping. Layers of flammable dusts should not be permitted to accumulate.

**STORAGE:** Flammable vapors may accumulate in some storage situations. Storage, use and handling areas should be 'No Smoking' areas.

Gas fired recirculating air furnaces or heaters, gas water heaters, etc., drawing air from areas where there may be a presence of chlorodifluoroethane gas from storage or fabrication of extruded polystyrene foam, can be subjected to rust and corrosion problems as a result of thermal decomposition of the blowing agents to hydrogen chloride.

**NOTICE:** This polystyrene foam plastic product is **COMBUSTIBLE** and should be protected from flame and other high heat sources. For more information, contact the appropriate fire regulatory authority or Dow (1-800-441-4369).

**8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

**ENGINEERING CONTROLS:** Provide general and/or local exhaust ventilation to control airborne levels below the exposure guidelines.

**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. If vapor exposure causes eye discomfort, use a full-face respirator.

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

**RESPIRATORY PROTECTION:** Atmospheric levels should be maintained below the exposure guideline. When respiratory protection

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is required for certain operations, use an approved air-purifying respirator. In dusty atmospheres, use an approved dust respirator.

**EXPOSURE GUIDELINE (S):**

1-Chloro-1,1-difluoroethane (HCFC 142b): AIHA WEEL is 1000 ppm, TWA. Chlorodifluoroemethane (HCFC 22): ACGIH TLV & OSHA PEL are 1000 ppm. ACGIH classifies as A4. PELs are in accord with those recommended by OSHA, as in the 1989 revision of PELs.

**9. PHYSICAL AND CHEMICAL PROPERTIES**

**APPEARANCE/PHYSICAL STATE:** Rigid cellular foam board  
**ODOR:** No odor.  
**VAPOR PRESSURE:** Not applicable  
**VAPOR DENSITY:** Not applicable  
**BOILING POINT:** Not applicable  
**SOLUBILITY IN WATER/MISCIBILITY:** None  
**SPECIFIC GRAVITY OR DENSITY:** .027 To .064

**10. STABILITY AND REACTIVITY**

**CHEMICAL STABILITY:** Stable.

**CONDITIONS TO AVOID:** Avoid fires and high temperatures. Temperatures over 300C (572F) will release combustible gases.

**INCOMPATIBILITY WITH OTHER MATERIALS:** Aromatic hydrocarbons, higher (>C5) aliphatic hydrocarbons, esters, amines, higher aldehydes.

**HAZARDOUS DECOMPOSITION PRODUCTS:** Does not normally decompose. In smoldering or flaming conditions, carbon monoxide, carbon dioxide, carbon are generated. Evolution of small amounts of hydrogen bromide, hydrogen chloride and hydrogen fluoride occurs when burned or heated over 250C (482F); under high heat, non-flaming conditions, small amounts of aromatic hydrocarbons such as styrene and ethylbenzene are generated.

**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)**

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MUTAGENICITY: For chlorodifluoroethane (HCFC 142b) and chlorodifluoromethane (HCFC 22) in vitro mutagenicity studies were negative in some cases and positive in other cases. Animal mutagenicity studies were negative.

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. Based on information for flame retardant. There is no evidence of any significant leaching, therefore it is unlikely to contaminate ground water.

DEGRADATION & PERSISTENCE: Surface photodegradation is expected with exposure to sunlight. No appreciable biodegradation is expected. Based on information for blowing agent. Most of the chlorodifluoromethane (HCFC-22) diffuses out of the foam in the first years of the product's life, most of it degrading in the troposphere to CO<sub>2</sub>, HCl, and HF. Chlorodifluoromethane (HCFC 22) has a stratospheric ozone depletion potential of 0.055, relative to CFC 12 (ODP=1). Chlorodifluoroethane (HCFC-142b) remains in the foam and diffuses out slowly, most of it degrading in the troposphere to CO<sub>2</sub>, HCl, and HF. Chlorodifluoroethane (HCFC 142b) has a stratospheric ozone depletion potential of 0.065, relative to CFC 12 (ODP=1).

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

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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.

For additional information, refer to Handling & Storage Information, MSDS Section 7.

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 Customers Information Center at 800-258-2436 or 989-832-1556 for further details.

14. TRANSPORT INFORMATION

DEPARTMENT OF TRANSPORTATION (D.O.T.):

This product is not regulated by D.O.T. when shipped domestically by land.

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

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REGULATORY INFORMATION (CONTINUED)

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:

CHEMICAL NAME	CAS NUMBER	CONCENTRATION
CHLORODIFLUOROMETHANE	000075-45-6	<7 %
CHLORODIFLUOROETHANE	000075-68-3	<10 %

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:

Not to have met any hazard category  
This hazard category classification is listed solely to assist with federal laws under SARA Title III. This classification is not intended nor appropriate for evaluating safe handling and use of this product. Refer to the body of this material safety data sheet for health and safety information.

STATE RIGHT-TO-KNOW: The following product components are cited on certain state lists as mentioned. Non-listed components may be shown in the composition section of the MSDS.

CHEMICAL NAME	CAS NUMBER	LIST
CHLORODIFLUOROMETHANE	000075-45-6	NJ2 NJ3
CHLORODIFLUOROETHANE	000075-68-3	NJ2 NJ3 PA1

NJ2=New Jersey Environmental Hazardous Substance (present at greater than or equal to 1.0%).  
NJ3=New Jersey Workplace Hazardous Substance (present at greater than or equal to 1.0%).  
PA1=Pennsylvania Hazardous Substance (present at greater than or equal to 1.0%).

CANADIAN REGULATIONS

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REGULATORY INFORMATION (CONTINUED)

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

This product is exempt under WHMIS

CANADIAN ENVIRONMENTAL PROTECTION ACT (CEPA):

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

16. OTHER INFORMATION

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) RATINGS:

Health	0
Flammability	1
Reactivity	0

MSDS STATUS: Revised Sections 2 and 13.

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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.

