



Material Safety Data Sheet

1. CHEMICAL PRODUCT & COMPANY IDENTIFICATION

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

Product: STYROFOAM® TONGUE AND GROOVE EXTRUDED FOAM INSULATION

Product Code: 82078

Effective Date: 10/25/01

Date Printed: 01/03/02

MSD: 002462

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
Ethyl chloride	CAS# 000075-00-3
Halogenated flame retardant	

This product may contain additives (such as magnesium silicate, CAS# 14807-96-6) generally at levels <1.5% maximum.

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

Blue rigid cellular foam board. 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: Essentially nonirritating to skin. Mechanical injury only. 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.

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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 and respiratory irritation. High concentrations of blowing agents (>25,000 ppm chlorodifluoroethane/HCF 142b, >10,000 ppm ethyl chloride) may cause central nervous system depression, anesthetic effects and irregular heartbeats (cardiac sensitization). In animals, excessive exposure to chlorodifluoroethane (HCF 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 that cause acute inhalation effects and below exposure guidelines.

SYSTEMIC (OTHER TARGET ORGAN) EFFECTS: Contains component(s) which, in animals, have been shown to cause kidney and liver effects. The component(s) is/are ethyl chloride.

CANCER INFORMATION: Neither polystyrene foam dust, or chlorodifluoroethane (HCF 142b) caused cancer in long-term animal studies. An increase in uterine tumors has been reported in female mice exposed for their lifetimes to 15,000-ppm ethyl chloride. Such tumors did not occur in rats similarly exposed. These results are not believed to be relevant to humans.

TERATOLOGY (BIRTH DEFECTS): No birth defects were observed in animal studies with ethyl chloride and chlorodifluoroethane (HCF 142b).

REPRODUCTIVE EFFECTS: No relevant information found.

4. FIRST AID

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

SKIN: Wash off in flowing water or shower.

INGESTION: If swallowed, seek medical attention. May cause gastrointestinal blockage. Do not give laxatives. Do not induce vomiting unless directed to do so by medical personnel.

INHALATION: Remove to fresh air. If not breathing give artificial respiration. If breathing is difficult, oxygen

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should be administered by qualified personnel. Call a physician or transport to a medical facility.

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

5. FIRE FIGHTING MEASURES**FLAMMABLE PROPERTIES**

FLASH POINT: 670F, 354C Flash ignition temperature.

METHOD USED: ASTM D1929 Proc. B.

FLAMMABILITY LIMITS

LFL: Not applicable.

UFL: Not applicable.

HAZARDOUS COMBUSTION PRODUCTS: Under fire conditions polymers decompose. The smoke may contain polymer fragments of varying compositions in addition to unidentified toxic and/or irritating compounds. In smoldering or flaming conditions, carbon monoxide, carbon dioxide and carbon are generated. Hazardous combustion products may include, and are not limited to, hydrogen fluoride, hydrogen chloride and hydrogen bromide. 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: When product is stored in closed containers a flammable atmosphere can develop. Container may vent and/or rupture due to fire. Mechanical cutting, grinding or sawing can cause formation of dusts. To reduce the potential for dust explosion, do not permit dust to accumulate. This product contains a flame retardant to inhibit accidental ignition from small fire sources. This plastic foam product is combustible and should be protected from flames and other high heat sources. For more information contact Dow. Dense smoke is produced when product burns.

EXTINGUISHING MEDIA: Foam, water, carbon dioxide, dry chemical.

FIRE FIGHTING INSTRUCTIONS: Keep people away. Isolate fire area and deny unnecessary entry. Soak thoroughly with water to cool

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and prevent re-ignition. Cool surroundings with water to localize fire zone. If material is molten, do not apply direct water stream. Use fine water spray or foam.

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). 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: Clear non-emergency personnel from area. Use appropriate safety equipment. For additional information, refer to Section 8" Exposure Controls/Personal Protection.

PROTECT THE ENVIRONMENT: Firewater run off may be toxic.

CLEANUP: Pick up, or if dust or in small pieces, sweep up and place in suitable container for disposal. See Section 13, Disposal Considerations.

7. HANDLING AND STORAGE

HANDLING: Maintain good housekeeping. Layers of flammable dusts should not be permitted to accumulate. See Section 8, Exposure Controls/Personal Protection.

In order to prevent buildup of combustible vapors, do not store large quantities of this product in unventilated spaces. Transport bulk shipments of this product in ventilated vehicles.

STORAGE: Flammable vapors may accumulate in some storage situations. Storage, use and handling areas should be "No Smoking" areas. See Section 8, Exposure Controls/Personal Protection. See Section 10, Stability and Reactivity.

Minimize sources of ignition, such as static buildup, heat, spark or flame.

When storing or fabricating large quantities of extruded polystyrene foam, the blowing agents (i.e. ethyl chloride and

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chlorodifluoroethane) released from the foam, if any, may thermally decompose to hydrogen chloride, which tends to accelerate corrosion or rust development of heaters, boilers, gas fired recirculating air furnaces or heaters, or gas water heaters.

This polystyrene foam plastic 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 alternative constructions.

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 that 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: Atmospheric levels should be maintained below the exposure guideline. When respiratory protection is required for certain operations, including but not limited to saw, router or hot-wire cutting, use an approved air-purifying respirator. In dusty atmospheres, use an approved dust respirator.

EXPOSURE GUIDELINE (S): Ethyl chloride: ACGIH TLV is 100 ppm, skin, A3. OSHA PEL is 1000 ppm.

1-Chloro-1, 1-difluoroethane (HCFC 142b): AIHA WEEL is 1000 ppm, TWA.

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

Although some of the additives used in this product may have exposure guidelines, these additives are encapsulated in the product and no exposure would be expected under normal

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handling conditions.

A "skin" notation following the exposure guideline refers to the potential for dermal absorption of the material. It is intended to alert the reader that inhalation may not be the only route of exposure and that measures to minimize dermal exposures should be considered.

9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE/PHYSICAL STATE: Blue rigid cellular foam board.

ODOR: Odorless

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

STABILITY: Thermally stable at typical use temperatures.

CONDITIONS TO AVOID: Maximum use temperature 73C (165F). Avoid temperatures above 300C (572F). Product can decompose at elevated temperatures. Avoid direct sunlight.

INCOMPATIBILITY WITH OTHER MATERIALS: Avoid contact with oxidizing materials. Avoid contact with aldehydes, amines, esters, liquid fuels and organic solvents.

HAZARDOUS DECOMPOSITION PRODUCTS: Does not normally decompose. Evolution of small amounts of hydrogen halides occur when heated over 250C, 482F. Hazardous decomposition products depend upon temperature, air supply and the presence of other materials. Hazardous decomposition products may include and are not limited to ethyl benzene, aromatic compounds, aldehydes, hydrogen bromide, hydrogen chloride, hydrogen fluoride, polymer fragments and styrene. Under high heat, non-flaming conditions, small amounts of aromatic hydrocarbons such as styrene and ethyl benzene 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 ethyl chloride and chlorodifluoroethane (HCFC 142b), in vitro mutagenicity studies were negative in some cases and positive in other cases. For the minor component(s) chlorodifluoroethane (HCFC 142b), 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 largely or completely on information for flame retardant. There is no evidence of any significant leaching; therefore it is unlikely to contaminate ground water.

DEGRADATION & PERSISTENCE: Surface photo degradation is expected with exposure to sunlight. No appreciable biodegradation is expected. Based largely or completely on information for blowing agent. Chlorodifluoroethane (HCFC 142b) remains in the foam and diffuses out slowly, most of it degrading in the troposphere to CO₂, HCl and HF. Chlorodifluoroethane (HCFC 142b) has a stratospheric ozone depletion potential (ODP) of 0.065, relative to CFC 12 (ODP=1). Most of the ethyl chloride diffuses out of the foam in the first years of the product's life; most of it degrading in the troposphere to CO₂ and HCl.

ECOTOXICITY: Not expected to be acutely toxic.

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

DISPOSAL: 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

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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, 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 Customer 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 DOT 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

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:

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REGULATORY INFORMATION (CONTINUED)

CHEMICAL NAME	CAS NUMBER	CONCENTRATION
CHLOROETHANE (ETHYL CHLORIDE)	000075-00-3	<8 %
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:

A delayed health hazard

CALIFORNIA PROPOSITION 65: The following statement is made in order to comply with the California Safe Drinking Water and Toxic Enforcement Act of 1986:

WARNING: This product contains a chemical known to the State of California to cause cancer.

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
CHLOROETHANE (ETHYL CHLORIDE)	000075-00-3	PA3 NJ3 PAI NJ2 NJI
CHLORODIFLUOROETHANE	000075-68-3	NJ3 PAI NJ2
CARBON DIOXIDE	000124-38-9	NJ3 PAI
TALC	014807-96-6	NJ3 PAI

NJ1=New Jersey Special Health Hazard Substance (present at greater than or equal to 0.1%).

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

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REGULATORY INFORMATION (CONTINUED)

or equal to 1.0%).

PA1=Pennsylvania Hazardous Substance (present at greater than or equal to 1.0%).

PA3=Pennsylvania Environmental Hazardous Substance (present at greater than or equal to 1.0%).

OSHA HAZARD COMMUNICATION STANDARD:

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

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.

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 7, 13 (area code), 15.

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