



# Material Safety Data Sheet

The Dow Chemical Company

**Product Name:** STYROFOAM(TM) 2.00 x 48 Inch Panel Core 20  
Extruded Polystyrene Foam Insulation

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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

STYROFOAM(TM) 2.00 x 48 Inch Panel Core 20 Extruded Polystyrene Foam Insulation

### COMPANY IDENTIFICATION

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

Customer Information Number:

800-258-2436

SDSQuestion@dow.com

### EMERGENCY TELEPHONE NUMBER

24-Hour Emergency Contact:

989-636-4400

Local Emergency Contact:

989-636-4400

## 2. Hazards Identification

### Emergency Overview

**Color:** Blue

**Physical State:** Board

**Odor:** Odorless

**Hazards of product:**

Toxic fumes may be released in fire situations.

### OSHA Hazard Communication Standard

This product is not a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

### Potential Health Effects

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

Fumes/vapor released during thermal operations such as hot-wire cutting may cause eye irritation.

**Skin Contact:** Essentially nonirritating to skin. Mechanical injury only.

**Skin Absorption:** Skin absorption is unlikely due to physical properties.

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**Inhalation:** Dust may cause irritation to upper respiratory tract (nose and throat). Fumes/vapors released during thermal operations such as hot wire cutting may cause respiratory irritation. Concentrations 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.

**Ingestion:** Swallowing is unlikely because of the physical state. Very low toxicity if swallowed. Harmful effects not anticipated from swallowing small amounts. May cause choking or blockage of the digestive tract if swallowed.

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

**Birth Defects/Developmental Effects:** Has been toxic to the fetus in laboratory animals at doses toxic to the mother. The component(s) is/are: Styrene. Testing has indicated that normal handling and cutting are unlikely to result in exposure levels sufficient to cause the listed effects.

### 3. Composition Information

Component	CAS #	Amount
2-Propenenitrile, polymer with ethenylbenzene	9003-54-7	> 60.0 - < 100.0 %
Styrene, polymers	9003-53-6	>= 0.0 - <= 10.0 %
1,1,1,2-Tetrafluoroethane	811-97-2	>= 5.0 - <= 10.0 %

Extruded styrenic polymer foam containing a halogenated flame retardant system.

### 4. First-aid measures

#### Description of first aid measures

**General advice:** If potential for exposure exists refer to Section 8 for specific personal protective equipment.

**Inhalation:** Move person to fresh air; if effects occur, consult a physician.

**Skin Contact:** Wash skin with plenty of water.

**Eye Contact:** Flush eyes thoroughly with water for several minutes. Remove contact lenses after the initial 1-2 minutes and continue flushing for several additional minutes. If effects occur, consult a physician, preferably an ophthalmologist. May cause injury due to mechanical action.

**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.

#### 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

If lavage is performed, suggest endotracheal and/or esophageal control. Danger from lung aspiration must be weighed against toxicity when considering emptying the stomach. 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.

#### 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. In smoldering or flaming conditions, carbon monoxide, carbon dioxide and carbon are generated. Combustion products may include and are not limited to: Hydrogen halides. Combustion products may include trace amounts of: Acrylonitrile. Hydrogen cyanide. Based on combustion toxicity testing, the effects of combustion from this foam are not more acutely toxic than the effects of combustion from common building materials such as wood.

**Unusual Fire and Explosion Hazards:** Container may vent and/or rupture due to fire. When product is stored in closed containers, a flammable atmosphere can develop. 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.

### **Advice for firefighters**

**Fire Fighting Procedures:** Keep people away. Isolate fire and deny unnecessary entry. Soak thoroughly with water to cool and prevent re-ignition. If material is molten, do not apply direct water stream. Use fine water spray or foam. Cool surroundings with water to localize fire zone.

**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). If protective equipment is not available or not used, fight fire from a protected location or safe distance.

## **6. Accidental Release Measures**

**Personal precautions, protective equipment and emergency procedures:** There are no special required instructions.

**Environmental precautions:** There are no special required instructions.

**Methods and materials for containment and cleaning up:** Recover spilled material if possible. See Section 13, Disposal Considerations, for additional information.

## **7. Handling and Storage**

### **Handling**

**General Handling:** Fabrication methods which involve cutting into this product may release the blowing agent(s) remaining in the cells. Provide adequate ventilation to assure localized concentrations in release areas are maintained below the lower flammable limit. 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 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. See Section 8, EXPOSURE CONTROLS AND PERSONAL PROTECTION.

### **Storage**

Minimize sources of ignition, such as static build-up, heat, spark or flame. When large quantities of this product are stored or fabricated, blowing agents may be released. Released blowing agents may thermally decompose to form gases which may accelerate corrosion or rust formation of heaters, boilers, gas fired recirculating air furnaces or heaters, or gas water heaters. Flammable vapors may accumulate in some storage situations. 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. During shipment, storage, installation and use, this material should not be exposed to flame or other ignition sources. Minimize sources of ignition, such as static build-up, heat, spark or flame. When large quantities of this product are stored or fabricated, blowing agents may be

released. Released blowing agents may thermally decompose to form gases which may accelerate corrosion or rust formation of heaters, boilers, gas fired recirculating air furnaces or heaters, or gas water heaters. Flammable vapors may accumulate in some storage situations. 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. During shipment, storage, installation and use, this material should not be exposed to flame or other ignition sources.

## 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

Concentrations 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.

### Personal Protection

**Eye/Face Protection:** Eye protection should not be necessary. For fabrication operations safety glasses (with side shields) are recommended. If there is a potential for exposure to particles which could cause eye discomfort, wear chemical goggles.

**Skin Protection:** No precautions other than clean body-covering clothing should be needed.

**Hand protection:** Use gloves to protect from mechanical injury. Selection of gloves will depend on the task.

**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, wear respiratory protection when adverse effects, such as respiratory irritation or discomfort have been experienced, or where indicated by your risk assessment process. In dusty or misty atmospheres, use an approved particulate respirator. 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. The following should be effective types of air-purifying respirators: Organic vapor cartridge with a particulate pre-filter.

**Ingestion:** No precautions necessary due to the physical properties of the material.

### Engineering Controls

**Ventilation:** Use local exhaust ventilation, or other engineering controls to maintain airborne levels below exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, general ventilation should be sufficient for most operations. Local exhaust ventilation may be necessary for some operations.

## 9. Physical and Chemical Properties

### Appearance

Physical State	Board
Color	Blue
Odor	Odorless
pH	Not applicable
Melting Point	90 - 130 °C (194 - 266 °F) <i>Estimated.</i>
Freezing Point	Not applicable
Boiling Point (760 mmHg)	Not applicable.
Flash Point - Closed Cup	Not applicable
Flammable Limits In Air	<b>Lower:</b> Not applicable <b>Upper:</b> Not applicable
Vapor Pressure	Not applicable
Vapor Density (air = 1)	Not applicable
Specific Gravity (H <sub>2</sub> O = 1)	0.027 - 0.064 <i>Estimated.</i>

<b>Solubility in water (by weight)</b>	insoluble in water
<b>Partition coefficient, n-octanol/water (log Pow)</b>	No data available for this product.
<b>Autoignition Temperature</b>	354 °C (669 °F) <i>ASTM D1929</i>
<b>Decomposition Temperature</b>	No test data available
<b>Kinematic Viscosity</b>	Not applicable

## 10. Stability and Reactivity

### Reactivity

No dangerous reaction known under conditions of normal use.

### Chemical stability

Thermally stable at typical use temperatures.

### Possibility of hazardous reactions

Polymerization will not occur.

**Conditions to Avoid:** Avoid temperatures above 300 °C (572 °F). Exposure to elevated temperatures can cause product to decompose. Avoid direct sunlight.

**Inhibitor:** Cristobalite.

**Incompatible Materials:** Avoid contact with oxidizing materials. Avoid contact with: Aldehydes. Amines. Esters. Liquid fuels. Organic solvents.

### Hazardous decomposition products

Does not normally decompose. Evolution of small amounts of hydrogen halides occur when heated over 250°C (482°F). Decomposition products depend upon temperature, air supply and the presence of other materials. Decomposition products can include and are not limited to: Aromatic compounds. Aldehydes. Hydrogen halides. Polymer fragments. Decomposition products can include trace amounts of: Acrylonitrile. Hydrogen cyanide. Styrene. Ethylbenzene. Toxic flammable gases can be released during decomposition.

## 11. Toxicological Information

### Acute Toxicity

#### Ingestion

As product: Single dose oral LD50 has not been determined.

#### Dermal

As product: The dermal LD50 has not been determined.

#### Inhalation

As product: The LC50 has not been determined.

### Eye damage/eye irritation

Solid or dust may cause irritation or corneal injury due to mechanical action. Fumes/vapor released during thermal operations such as hot-wire cutting may cause eye irritation.

### Skin corrosion/irritation

Essentially nonirritating to skin. Mechanical injury only.

### Sensitization

#### Skin

Relevant data not available.

#### Respiratory

Relevant data not available.

### Repeated Dose Toxicity

Additives are encapsulated in the product and are not expected to be released under normal processing conditions or foreseeable emergency.

**Chronic Toxicity and Carcinogenicity**

As product: Relevant data not available.

**Developmental Toxicity**

Has been toxic to the fetus in laboratory animals at doses toxic to the mother. The component(s) is/are: Styrene. Testing has indicated that normal handling and cutting are unlikely to result in exposure levels sufficient to cause the listed effects. Contains component(s) which did not cause birth defects or any other fetal effects in lab animals.

**Reproductive Toxicity**

Relevant data not available.

**Genetic Toxicology**

Genetic toxicity studies on tested components were predominantly negative. Animal genetic toxicity studies were predominantly negative.

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## 12. Ecological Information

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**Toxicity**

Not expected to be acutely toxic to aquatic organisms.

**Persistence and Degradability**

Surface photodegradation is expected with exposure to sunlight. No appreciable biodegradation is expected. Based largely or completely on information for the blowing agent: 1,1,1,2-tetrafluoroethane (HFC-134a) remains in the foam and diffuses out slowly, most of it degrading in the troposphere to CO<sub>2</sub> and HF. 1,1,1,2-Tetrafluoroethane (HFC-134a) has a stratospheric ozone depletion potential (ODP) of zero, relative to CFC 12 (ODP=1).

**Bioaccumulative potential**

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

**Mobility in soil**

**Mobility in soil:** In the terrestrial environment, material is expected to remain in the soil. In the aquatic environment, material is expected to float.

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## 13. Disposal Considerations

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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. Landfill. Incinerator or other thermal destruction device.

## 14. Transport Information

**DOT Non-Bulk**  
NOT REGULATED

**DOT Bulk**  
NOT REGULATED

**IMDG**  
NOT REGULATED

**ICAO/IATA**  
NOT REGULATED

*This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Additional transportation system information can be obtained through an authorized sales or customer service representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.*

## 15. Regulatory Information

### **OSHA Hazard Communication Standard**

This product is not a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

### **Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Sections 311 and 312**

Immediate (Acute) Health Hazard	No
Delayed (Chronic) Health Hazard	No
Fire Hazard	No
Reactive Hazard	No
Sudden Release of Pressure Hazard	No

### **Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Section 313**

To the best of our knowledge, this product does not contain chemicals at levels which require reporting under this statute.

### **Pennsylvania (Worker and Community Right-To-Know Act): Pennsylvania Hazardous Substances List and/or Pennsylvania Environmental Hazardous Substance List:**

To the best of our knowledge, this product does not contain chemicals at levels which require reporting under this statute.

### **Pennsylvania (Worker and Community Right-To-Know Act): Pennsylvania Special Hazardous Substances List:**

To the best of our knowledge, this product does not contain chemicals at levels which require reporting under this statute.

### **California Proposition 65 (Safe Drinking Water and Toxic Enforcement Act of 1986)**

This product contains no listed substances known to the State of California to cause cancer, birth defects or other reproductive harm, at levels which would require a warning under the statute.

### **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.

## 16. Other Information

### Hazard Rating System

<b>NFPA</b>	<b>Health</b>	<b>Fire</b>	<b>Reactivity</b>
	0	1	0

### Recommended Uses and Restrictions

#### Identified uses

Material for industrial fabrication. For industrial use. We recommend that you use this product in a manner consistent with the listed use. If your intended use is not consistent with the stated use, please contact your sales or technical service representative.

#### Revision

Identification Number: 1013335 / 1001 / Issue Date 10/20/2011 / Version: 3.1

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
Action Level	A value set by OSHA that is lower than the PEL which will trigger the need for activities such as exposure monitoring and medical surveillance if exceeded.

*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.*