



**MATERIAL SAFETY DATA SHEET  
EXPANDED POLYSTYRENE FOAM PRODUCTS**

**Updated: April, 2015**

**1. Identification**

Product identifier: Expanded Polystyrene Foam (EPS)  
Recommended use: Use in sheets and formed products for packaging, construction materials, safety gear, cold chain products and other miscellaneous applications.

Manufacturer: Plymouth Foam Inc.  
1800 Sunset Drive  
Plymouth, WI 53073

Supplier: Plymouth Foam Inc.  
1800 Sunset Drive  
Plymouth, WI 53073

Telephone numbers-  
24 hour emergency assistance:  
Chemctrec (US) 800-424-9300  
Plymouth Foam 800-669-1176

Telephone numbers-  
General assistance:  
Customer Service 800-669-1176  
7:00 am – 4:30 p.m.  
General 920-893-0535  
MSDS 920-892-3120

Product Codes: Duraspec, Duraguard, Durafold, EPS, Geofoam

**2. Hazard(s) Identification**

Physical hazards: Not classified  
Health hazards: Not classified  
OSHA defined hazards: Combustible Dust      Classified  
Label elements:  
Hazard: None  
Signal word: Warning  
Hazard statement: Not applicable  
Prevention: Not applicable  
Response: Not applicable  
Storage: Not applicable  
Disposal: Not applicable  
Hazard(s) not otherwise classified (HNOC): Not classified



Emergency Overview:

	<b>Health</b>	<b>Fire</b>	<b>Reactivity</b>	<b>Degree of Hazard</b>
NFPA Rating:	1	2*	0	0 – Minimal (Insignificant)
HMIS Rating:	1	2*	0	1 – Slight (Minor) 2 – Moderate 3 – Serious (High) 4 – Severe (Extreme)

Supplemental information  
Hazard Statement

IN USE, MATERIAL MAY RELEASE PENTANES, A FLAMMABLE HYDROCARBON, WHICH MAY FORM A FLAMMABLE/EXPLOSIVE VAPOR-AIR MIXTURE.

May form combustible dust concentrations in air if converted to small particles during further processing, handling, or by other means.

Prevention

Prevent dust accumulation to minimize explosion hazard. Keep away from heat/sparks/open flames/hot surfaces.-No smoking materials nearby.

**3. Composition/information on ingredients**

Components	Common name and synonyms	CAS Number	%
POLYSTYRENE		9003-53-6	97-98%
PENTANE Mixture*	n-pentane Isopentane Cyclopentane	09-66-0 78-78-4 287-92-3	Mixture <2%
MODIFIERS AND/OR ADDITIVES		Mixture	0.01 - 1%
When requested, insect and fungus additive: Disodium Octaborate Tetrahydrate		12008-41-2	<0.4%

\*This is a flammable blowing agent that off-gasses from product. Most of the pentane off-gasses prior to shipment. However, residual blowing agent may gradually off-gas from the foam during storage or use.

Composition comments

Values do not reflect absolute minimums and maximums; these values are typical which may vary from time to time



This Safety Data Sheet is intended to communicate potential health hazards and potential physical hazards associated with the product(s) covered by this sheet, and is not intended to communicate product specification information. For product specification information, contact Plymouth Foam Inc.

#### **4. First-aid measures**

##### Inhalation

No hazard. If exposed to excessive levels of dust, remove affected individual from source of exposure to fresh air. Seek medical attention.

##### Skin Contact

Not applicable

##### Eye Contact

If eyes become irritated from contact with dust or particles, flush immediately with large amounts of water for at least 15 minutes. Eyelids should be held away from the eyeball to ensure thorough rinsing. Get medical attention if irritation persists.

##### Ingestion

Seek medical attention if individual consumed excessive amounts.

#### **5. Fire-fighting measures**

Flash Point and Method:	Not applicable
Upper Flammable Limit (UFL):	Not applicable
Lower Flammable Limit (LFL):	Not applicable
Auto Ignition:	880° F (ASTM D-1929) for expanded polystyrene
Extinguishing Method:	Use water spray, water fog, fire-fighting foam or dry chemical or CO <sub>2</sub> extinguishing media.

##### Unusual Fire and Explosion Hazards:

Pentane vapors may be emitted from freshly expanded or processed foam or when product is heated. Hazardous concentrations may accumulate inside a sealed container or within confined space areas. Assure proper ventilation of storage or shipping containers to prevent accumulation of hazardous concentrations of off-gassed pentane. No smoking materials should be allowed near any storage units.

##### Hazardous Combustion Products:

Burning foam emits a dense, black, irritating smoke with acid gases. Primary combustion products are carbon monoxide, carbon dioxide, and styrene. Other undetermined hydrocarbon fraction could be released in small quantities.

#### **6. Accidental Release Measures**

##### Land Spill:

Scoop up material and put into suitable container for recycling or disposal as a nonhazardous waste in an appropriate recycling or disposal facility.



**Water Spill:**

This material will float and disperse with wind and current. Contain the material with brooms, pick up or remove with a vacuum truck.

**Air Release:**

This material will settle out of the air. If concentrated on land, it can then be scooped up for recycling or disposal as a non-hazardous waste.

**7. Handling and Storage**

**Storage Temperature:**

Below 170° F. Storage Pressure: Not applicable.

**General Storage:**

Store in a well-ventilated area. Assure storage containers or areas and shipping containers are adequately ventilated. The flammable vapors of pentane blowing agent) are heavier than air and may accumulate in low places. "No Smoking – No Matches – No Lighters – No Welding" rules should be enforced.

**8. Exposure Control/Personal Protection**

**Work Practices and Engineering Controls:**

Avoid unnecessary dust exposures when cutting or abrading by using adequate local exhaust or general ventilation. General dilution ventilation and/or local exhaust ventilation should be provided as necessary to maintain exposures below occupational exposure limits and to prevent accumulation of hazardous concentrations of off-gassed pentane (see section 5).

**Personal Protective Equipment:**

Eye: Safety glasses or goggles may be worn to reduce the risk of eye injury or irritation

**Respirators:**

Respiratory protection is not normally required. If dusts are generated up to 10 times above occupational exposure limits, use a NIOSH-approved particulate respirator (disposable filtering dust mask type) with an efficiency rating of N95 or higher (e.g. 3M's 8210, Moldex 2300). Wear an air-purifying respirator with charcoal cartridges or a supplied air respirator when exposure to pentane exceeds exposure limits.

**Skin:**

Gloves, long sleeved shirt and long pants may be worn, as needed, to prevent skin contact and irritation.

Other: None.



INGREDIENT	OSHA PEL	ACGIH TLV	NIOSH REL
Expanded Polystyrene			
PNOC:			
Inhalable		10 mg/m3	
Respirable	5 mg/m3	3mg/m3	
Total Particulate	15 mg/m3	--	
Pentanes			
Pentane	1000 ppm	600 ppm	120 ppm 610 (Ceiling)
Cyclopentane -	600 ppm	600ppm	
Styrene	100 ppm 200 ppm (Ceiling) 600 ppm (5 minute peak)	20 ppm 40 ppm (STEL)	50 ppm 100 ppm (STEL)

Additional Information: The products listed in this MSDS do not contain any form of Asbestos

## 9. Physical and Chemical

Appearance:	White or gray, sheets, shapes, coolers
Vapor Density (Air=1):	Not applicable (Pentane blowing agent – 2.5)
Physical State:	Solid pH: Not applicable
Vapor Pressure (mm Hg @ 20 o C):	400 mm Hg Boiling Point: Not applicable
Odor:	Slight hydrocarbon odor
Viscosity:	Not applicable
Specific Gravity (Water=1):	1.05 to 1.18 Freezing Point: Not applicable
Solubility in Water:	Very slight
Melting Point:	Not determined

## 10. Ecological Information

This material is not expected to cause harm to animals, plants or fish. Fish or animals may eat product and obstruct their digestive tract. It is not expected to harm ecosystems through its applied use.

## 11. Reactivity

General: This is a stable material; avoid sources of ignition.

Incompatible Materials and Conditions to Avoid: Reactive with oxidizing agents. Organic solvents, esters, amine and aldehydes will dissolve product. High temperature, poor ventilation combined with freshly expanded product may create hazardous, explosive or fire conditions.

Hazardous Decomposition Products: May decompose in a fire. See Section 5 of MSDS for combustion products statement.

Hazardous Polymerization: Will not occur.

## 12. Toxicological Information



This product has not been tested as a separate entity. Therefore, the hazards must be evaluated on the basis of the individual ingredients, and those hazards must be assumed to be additive in the absence of complete information. The hazards described in this document have been evaluated on a threshold of 1.0% for all hazardous ingredients and 0.1% for all carcinogens.

Acute Effects: Acute health effects from this product are unlikely when used as intended.

Chronic Effects: Chronic health effects from this product are unlikely when used as intended.

#### Styrene Monomer

In March 1987, the International Agency for Research on Cancer (IARC) reclassified styrene as possibly carcinogenic to humans (Group 2B) due to "inadequate evidence in humans", "limited evidence in animals" and "other relevant data". Previously, styrene was classified as a Group 3 compound (not classified as to carcinogenicity to humans). The IARC working group determined that the weight of data on genetic and related effects, together with the consideration that styrene metabolized in humans and animals to styrene oxide for which there is sufficient evidence of carcinogenicity in experimental animals and has been classified by IARC as probably carcinogenic to humans (Group 2A), was sufficient reason to recommend the change in classification.

### **13. Waste Disposal Considerations**

RCRA Hazard Class: Non-hazardous

Waste Disposal: Incinerate, recycle or dispose in a licensed facility. Do not discharge into waterways or sewer systems without proper authority

### **14. Transportation Information**

US DOT Information: For domestic transportation purposes, this product is not regulated as a hazardous material by the US Department of Transportation (DOT) under Title 49 of the Code of Federal Regulations.

### **15. Regulatory Information**

#### Clean Air Act

This product contains styrene, which is listed as a hazardous air pollutant

#### SARA Title III Regulations

This product contains pentane and residual styrene monomer, which OSHA defines as a hazardous chemical. This product may be portable under SARA sections 311 and 312, depending on the maximum on-site storage volumes. This product does not contain any substance(s) subject to the reporting requirements (i.e., at or above de minimis quantities) of sections 302 and 304 of Title III of the Superfund Amendments and Reauthorization Act (SARA-40 CFR 355). This product does not contain any substance(s) subject to reporting requirements (i.e., at or above de minimis quantities) of sections 302 and 304 of Title III of the Superfund Amendments and Reauthorization Act (SARA-40 CFR 372).

#### Toxic Substance Control Act (TSCA)

All ingredients are listed on the TSCA inventory.

#### California Proposition 65



This material contains detectable amounts of some chemicals listed by the State of California to cause cancer. Styrene oxide is listed as known to the State of California to cause cancer. Styrene oxide is a metabolite of styrene monomer.

**Component Analysis: States**

The following components appear on one or more of the following state hazardous substance lists:

Component	CAS #	CA	MA	MI	MN	NJ	PA
Pentane (Isomers)	109-66-0 78-78-4 287-92-3	X	X	X	X	X	X
Styrene	100-42-5	X	X	X	X	X	X

**Component Analysis: WHMIS IDL**

The following components appear on one or more of the following state hazardous substance lists:

Component	CAS #	Minimum Concentration
Pentane (Isomers)	109-66-0 78-78-4 287-92-3	1% English Item 1243; French Item 1348
Styrene	100-42-5	0.1% English Item 1473; French Item 1508

**16. Additional Comments**

Issue Date: April 1, 2015

Revision Date: April 1, 2015

Version: 01

**Other Information**

This SDS has been prepared to comply with federal regulations that are intended to quickly provide useful information to the user(s) of this material or products. It is not intended to serve as a comprehensive discussion of all possible risks of hazards, but rather provides information generally accepted in the scientific community as relevant regarding the potential hazards of this product.

Reasonable care has been taken in the preparation of this information, but the manufacturer makes no warranty of merchantability or any other warranty, expressed or implied, with respect to this information. The manufacturer makes no representations and assumes no liability for any direct, incidental or consequential damages resulting from its use.