



1. PRODUCT AND COMPANY IDENTIFICATION

Company

The Greenstreak Group
3400 Treecourt Industrial Blvd
St. Louis, MO 63122

24 Hour Emergency Response Information

800 424 9300

Product : Falcon Foam Expanded Polystyrene (EPS)

2. COMPOSITION/ INFORMATION ON INGREDIENTS

Common Name	Chemical Name	CAS #	WT%
Polystyrene Foam	Ethenylbenzene homopolymer	9003-53-6	92-100%
Pentanes* (isomers)	N- pentane	109-66-0	<8%
	Isopentane	78-78-4	
	Cyclopentane	287-92-3	
Styrene (residual)	Vinyl Benzene	100-42-5	0-0.2%

*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.

NOTE: See section 8 of MSDS for exposure limits data for these ingredients.

3. HAZARDS IDENTIFICATION

Appearance and Odor: White, gray or reddish solid blocks, sheets panels or forms with slight hydrocarbon odor.

EMERGENCY OVERVIEW: No unusual conditions are expected from this product after it is aged. Freshly expanded or heated foam may off-gas pentane which can accumulate at hazardous concentrations above the Lower Explosion Limit (LEL) if stored in closed containers or confined areas. To prevent ignitions, avoid smoking, keep from open flames and high temperatures. If heated above decomposition temperature or burned, product can emit an irritating dense black smoke and acid gases. Grinding, sawing or fabrications activities can produce dust particles which under certain conditions may ignite or form explosive dust atmospheres.

Primary Routes of Exposure: Inhalation, skin, eyes, swallowing

Potential Health Effects:

ACUTE (short term) Breathing dust may cause temporary mechanical irritation and coughing. Eye contact may cause mild mechanical irritation, redness, tearing and blurred vision. Direct contact with rough cut foam can cause mechanical abrasion cuts or puncture to fingers, hands or exposed skin.



Overexposure to extremely high concentrations of pentane can cause narcotic effects. Signs and symptoms of extreme overexposure to pentane include headache, nausea, dizziness, difficulty walking or sleepiness. Studies have shown that short term (10 minute) exposures to pentane at 5000ppm produced no symptoms.

CHRONIC (long term): There is no know chronic health effects connected with long term use or contact with this product. See Section 11 of MSDS for toxicological data.

Medical conditions Aggravated by Exposure: Treat symptomatically. Specific data are not available which address medical conditions that are generally recognized as being aggravated by exposure to this product. However, chronic respiratory or eye conditions may worsen from exposure to these products.

4. FIRST AID MEASURES

Inhalation: Move person to fresh air, If breathing is difficult or irritation persists, seek medical attention. If not breathing, administer artificial respirations. Seek immediate medical attention.

Eye Contact:

Flush eyes with running water for at least 15 minutes. See doctor if irritation persists.

Skin Contact: Wash with mild soap and running water. Remove and launder contaminated clothing before reuse. If irritation develops, get medical attention.

Ingestion: Ingestion of this material is unlikely. If it does occur, do not induce vomiting and seek medical attention. Watch person for several days to make sure that intestinal blockage does not occur.

5. FIRE FIGHTING MEASURES

Flash Point and Method: Not Determined

Information provided by bead manufacturers indicate:

-40F (40C) Tagible for pentane blowing agent

675F (ASTM D-1929) for expandable beads per bead manufacturer.

653F (345C) Tagible (closed cup) per other bead manufacturer

Flammability Limits (%) 1.5% LEL to 7.8%UEL (pentane blowing agent)

Auto Ignition Temperature: Not Determined

880F (ASTM D 1929) for expanded polystyrene per bead manufacturer

800.6F (345C) per another bead manufacturer

Extinguishing Media: Use water spray, water fog, fire-fighting foam or dry chemical or CO₂ 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 areas.

Electrostatic discharge can be a source of ignitions of accumulated pentane vapors exceeding the L.E.L. (lower explosion limit) of 1.5% (15,000ppm). If ignited, there may be a very high rate of flame propagation and/or an associated explosion. Assure proper ventilation of storage or shipping containers to prevent accumulation of hazardous concentrations of off-gassed pentane.



Fire Fighting Instructions: Use self-contained breathing apparatus (SCBA) and full bunker turnout gear in a sustained fire.

Hazardous Combustion Products: Burning foam emits a dense black irritation smoke with acid gases. Primary combustion products are carbon monoxide, carbon dioxide, and styrene. Other undetermined hydrocarbon fractions could be released in small quantities.

6. ACCIDENTAL RELEASE MEASURES

Land Spill:

Scoop un material and put into suitable container for recycling or disposal as a non-hazardous waste in an appropriate recycling or disposal facility.

Water Spill:

This material will float and disperse with wind and current. Contain the material with booms, 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 scooped up for recycling or disposal as a non-hazardous waste.

7. HANDLING AND STORAGE

Storage

General Advice:

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 CONTROLS AND PERSONAL PROTECTION

Ingredient	OSHA PEL (8-hr TWA)	ACGIH TLV (8-hr TWA)
Expanded Polystyrene Foam	15mg/m ³ (total dust)	10mg/m ³ (inhalable fraction)
	5 mg/m ³ (respirable dust)	3 mg/m ³ (respirable PNOC)
Pentane	600ppm TWA 750ppm STEL	600ppm TWA
Styrene Monomer	50ppm TWA 100ppm STEL	20ppm 40ppm STEL



PNOC = Particles Not Otherwise Classified

Ventilation: General dilution ventilation and/or local exhaust ventilation should be provided as necessary to maintain exposure below occupations exposure limits and to prevent accumulation of hazardous concentrations of off-gassed pentane (see section 5)

PERSONAL PROTECTION

Respiratory Protection: If dusts are generated, wear a properly fitted NIOSH/MSHA approved disposable dust respirator such as the 3M model 8210 (formerly 8710) or model 8271 (formerly 9900) in high humidity environments or equivalent. Wear an air-purifying respirator with charcoal cartridges or a supplied air respirator when exposures to pentane exceed the occupational exposure limits. Use respirators protection in accordance with your company's respiratory protection program, local regulations and OSHA regulations under 29 CFR1920.134

Skin Protection: Gloves, long sleeved shirt, long pants, as needed.

Eye Protection: Safety glasses or goggles

Work and Hygienic Practices: Handle using good industrial hygiene and safety practices. Avoid unnecessary dust exposures when cutting or abrading by using adequate local exhaust or general ventilation.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State: Solid
Odor: Slight Hydrocarbon Odor
Color: White, gray or reddish solid blocks, sheets, panels or forms.
PH: Not applicable
Boiling point: No information
Freezing point: No information
Vapor pressure: 400mm Hg
Vapor density: 2.5 Pentane Blowing Agent (Air =1)
Solubility: Water insoluble
Specific Gravity: 1.05 to 1.18
Evaporation Rate: Not Available

10. STABILITY AND REACTIVITY

General: Stable

Conditions to avoid: Reactive with oxidizing agents. Organic solvents, esters, amines and aldehydes will dissolve product. High temperature, poor ventilation combines with freshly expanded product may create hazardous, explosive or fire conditions.

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



Hazardous polymerization: Will not occur



11. TOXICOLOGICAL INFORMATION

CARCINOGENICITY: The table below indicates whether or not each agency has listed each ingredients as a carcinogen:

Ingredient	ACGIH	IARC	NTP	OSHA
Polystyrene	NO	NO	NO	NO
Pentanes	NO	NO	NO	NO
Styrene Monomer	A4	2B	NO	Possible Select

ACGIH: A4 Not Classifiable as a Human Carcinogen
 IARC 2B – sufficient animal

	LD50 Oral	LD 50 Dermal	LD50 Inhalation
Polystyrene	N/A	N/A	N/A
Pentanes	N/A	N/A	123,400 ppm (rat)
Styrene	2650 mg/kg (rat)	N/A	9,500 mg/m3
Monomer	316 mg/kg (mouse)		

Styrene Monomer:

In March 1987, the International Agency for Research on Cancer (IARC) reclassified styrene as possible carcinogenic to human (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.

12. 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.

13. 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. TRANSPORT INFORMATION

TSCA Status: All ingredients are listed on the TSCA Inventory.

NSR Status (Canada): All Ingredients are listed on the Domestic Substance List (DSL)

SARA Title III:

Hazard Categories:
Acute Health: Yes
Chronic Health: No
Fire Hazard: Yes
Pressure Hazard: No
Reactivity Hazard: No

Reportable Ingredients:
Sec. 302/304: None
Sec. 313: None

California Proposition 65: This material contains detectable amounts of some chemicals known to the State of California to cause cancer. Styrene oxide is listed as known the State of California to cause cancer. Styrene oxide is a metabolite of styrene monomer.

Clean Air Act: Styrene is listed as a hazardous air pollutant

WHMIS (Canada): **Status:** Not Controlled
WHMIS Classification(s): None

15. OTHER INFORMATION

HMIS and NFPA Hazard Rating:	Category	HMIS	NFPA
	Acute Health	2	2
	Flammability	3	3
	Reactivity	0	0

(a) HMIS and NFPA Ratings based on hazards of pentane. Aged board will have lower ratings.

NFPA Unusual Hazards: Freshly expanded or heated foam may off gas pentane which can accumulate at hazardous concentrations above the LEL in closed containers or confined areas.

HMIS Personal Protection: To be supplied by user depending upon use.

Revision Summary: This is a new MSDS, Read this information carefully, 3/24/00