



Safety Data Sheet

1. PRODUCT AND COMPANY INFORMATION

Chemical Product Identification / Product Name

GX Series – Expanded Polystyrene

Recommended use and restrictions

For industrial use only – Insulation

Manufacturer Information

Atlas EPS, Division of Atlas Roofing Corporation
8240 Byron Center Ave SW
Byron Center, Michigan 49315
Telephone: 800-917-9138 (8am – 5pm EST weekdays)

Emergency Telephone

CHEMTREC (24 hours every day): 800-424-9300

2. HAZARDS IDENTIFICATION

Classification

No need for classification according to GHS criteria for this product.

Hazard Symbol



Signal Word

Warning

Hazard Statements

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. Cured finished product has negligible pentane content.

Precautionary Statements

To prevent ignition, 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 fabrication activities can produce dust particles which under certain conditions may ignite or form explosive dust atmospheres. Wear gloves, long sleeved shirt, and long pants, as needed, to reduce skin contact or irritation

Appearance and Odor

Dark Gray solid blocks, sheets, panels or forms with slight hydrocarbon odor.

Emergency Overview

Prolonged or repeated contact may dry skin and cause irritation or dermatitis. May cause eye, skin and respiratory tract irritation. Use with local exhaust ventilation.

Potential Health Effects Summary

Inhalation or eye exposure to dust from this product may cause temporary irritation. Skin exposure to the product may cause mechanical irritation, cuts or punctures.

Routes of Entry

Inhalation, skin and eye contact, and ingestion.

Acute Inhalation

Breathing dust may cause temporary mechanical irritation and coughing. Overexposure to extremely high concentrations of pentane from freshly made product can cause narcotic effects. Signs and symptoms of overexposure to pentane include headache, nausea, dizziness, difficulty walking or sleepiness.

Chronic Inhalation

None identified.

Acute Skin Contact

Direct contact with rough cut foam can cause mechanical abrasion to exposed skin.

Chronic Skin Contact

None identified.

Acute Eye Contact

Eye contact may cause mild mechanical irritation, redness, tearing and blurred vision.

Chronic Eye Contact

None identified.

Acute Ingestion

Ingestion of this material is unlikely if used as intended. However, ingestion of this product may produce gastrointestinal irritation and disturbances.

Chronic Ingestion

None identified.

Carcinogenicity

Styrene monomer

ACGIH: A4 – Not classifiable as a Human Carcinogen

IARC: 2B – Possibly Carcinogenic to Humans (Vol. 60, 1994)

Medical Conditions Aggravated by Exposure

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

3. COMPOSITION AND INGREDIENT INFORMATION

According to Regulation 2012 OSHA Hazard Communication Standard; 29CFR Part 1910.1200

| <u>Chemical Name</u> | <u>CAS No.</u> | <u>Content (W/W)</u> |
|--|----------------|----------------------|
| Polystyrene | 9003-53-6 | >=80.0 - <100.0% |
| Pentane | 109-66-0 | >=0.1 - <1.0% |
| Graphite | 7782-42-5 | >=3.0 - <7.0% |
| Isopentane | 78-78-4 | >=0.0 - <0.5% |
| Sulfonium compounds, C11-14-alkylbis (hydroxyethyl), 2-hydroxyethyl sulfates (salts) | 78169-20-7 | >=0.0 - <0.1% |

**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.*

4. FIRST AID MEASURES

General advice

If adverse health effects develop seek medical attention.

Inhalation

Keep patient calm, remove to fresh air. If difficulties occur obtain medical attention.

Skin

Wash affected areas thoroughly with soap and water. If irritation develops seek medical attention.

Eyes

In case of contact with the eyes, rinse immediately for at least 15 minutes with plenty of water. If irritation develops, see medical attention.

Ingestion

No hazards anticipated. Rinse mouth and then drink plenty of water. If difficulties occur obtain medical attention.

Most important symptoms and effects, both acute and delayed

Symptoms: headache, dizziness, incoordination, dazed state, eye irritation, skin irritation.

NOTE to physician

Treat according to symptoms (decontamination, vital functions), no known specific antidote.

5. FIRE FIGHTING MEASURES

Extinguishing media

Suitable extinguishing media: water spray, foam, dry powder, carbon dioxide.
Unsuitable extinguishing media for safety reasons: water jet.

Special hazards arising from the substance or mixture

Hazards during fire-fighting: carbon monoxide, carbon dioxide, Styrene, aliphatic hydrocarbons.
The substances/groups of substances mentioned can be released in case of fire.

Advice for fire-fighters

Protective equipment for fire-fighting: Wear self-contained breathing apparatus and chemical protective clothing.

Further information

Burns with dense emission of soot; Containers/tanks should be cooled with water spray. Dispose of fire debris and contaminated extinguishing water in accordance with official regulations.
Flammable concentration of propellant may accumulate on storage in closed containers. Product will burn on contact with flame or exposure to high temperature.

6. ACCIDENTAL RELEASE MEASURES

Land Spill

Scoop up 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 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

Precautions for safe handling

Handle in accordance with good industrial hygiene safe practices. Provide good room ventilation even at ground level (vapors are heavier than air). 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.

Vapors may form ignitable mixture with air. Keep away from heat. Prevent electrostatic charge – sources of ignition should be kept well clear. Fire extinguishers should be kept handy. Avoid all sources of ignition: heat, sparks, and open flame.

Wear gloves, long sleeved shirt, and long pants, as needed, to reduce skin contact or irritation

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.

Components with occupational exposure limits

| | | |
|----------------------|-----------|--|
| Isopentane | ACGIH TLV | TWA value 600 ppm; TWA value 1000 ppm |
| Pentane ppm | OSHA PEL | PEL 1000 ppm 2950 mg/m ³ ; STEL value 750 |
| | ACGIH TLV | 2250 mg/m ³ ; TWA value 600 ppm 1800 mg/m ³ TWA value 600 ppm; TWA value 1000 ppm |
| Graphite | OSHA PEL | TWA value 15 millions of particles per cubic foot of air |
| | ACGIH TLV | TWA value 2 mg/m ³ Respirable fraction |
| Expanded Polystyrene | OSHA PEL | 15 mg/m ³ total particulate; 5 mg/m ³ Respirable |
| | ACGIH TLV | 10 mg/m ³ Inhalable; 3 mg/m ³ Respirable |
| Styrene | OSHA PEL | 600 ppm (5 min peak); 200 ppm (Ceiling) |
| | ACGIH TLV | 40 ppm (STEL) |
| | NIOSH REL | 100 (STEL) |

Provide local exhaust ventilation to control vapors/mist.

Personal Protective Equipment:

Eye

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

Respiratory Protection

Respiratory protection is not normally required. If dusts are generated above the current occupational exposure limits, use a NIOSH-approved particulate respirator (disposable filtering dust mask type) with efficiency rating of N95 or higher. 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.

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

9. PHYSICAL AND CHEMICAL

| | |
|--|---|
| Appearance: Solid blocks, sheets, panels or forms (solid) | pH: Not applicable |
| Color: Black/dark grey | Boiling Point: Not applicable |
| Odor: Slight hydrocarbon odor | Softening Temp: Approx. 160° F |
| Boiling Point: Not applicable | Sublimation point: Not applicable |
| Flash Point: 700° F (Vapors are flammable) | Flammability: Not highly flammable |
| Flammability of Aerosol: Not Applicable | |
| Vapor Density (Air=1): Not applicable (Pentane blowing agent – 2.5) | |
| Lower explosion limit: Product not examined. Value is calculated from the data of the components. | |
| Upper explosion limit: Product not examined. Value is calculated from the data of the components. | |
| Auto ignition: 650°F (DIN 51794) | Vapor density: Heavier than air |
| Partition coefficient: Not applicable | Self-ignition: Not self-igniting |
| Thermal decomposition: 900°F | Evaporation rate: NA |
| Viscosity dynamic: NA | Viscosity kinematic: NA |
| Solubility (qualitative): Soluble | Solubility in Water: No Soluble |
| Miscibility: Immiscible | Relative Density: 0.5-4 pcf |
| Freezing Point: Not applicable | Melting Point: Not determined |

10. STABILITY and REACTIVITY

Reactivity:

Refractive with oxidizing agents. No hazardous reactions if stored and handled as prescribed/indicated. Vapors may form explosive mixture with air.

Stability:

This is a stable material if stored and handled as prescribed/indicated. Avoid sources of ignition.

Possibility of hazardous reactions:

Formation of explosive gas/air mixtures.

Incompatible Materials and Conditions to Avoid:

Temperatures over 180°F. All sources of ignition: heat, sparks, open flames. Avoid direct sunlight when enclosed in clear plastic bags. Avoid electro discharge. 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. Explosive substances according UM transport regulations class 1; propellant release will be boosted with increasing temperatures.

Hazardous Decomposition Products:

May decompose in a fire. Possible thermal decomposition products; Pentane, styrene monomers, heated product evolves combustible vapors. Thermal decomposition is at 900°F. Non decomposition if used as directed.

11. 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.

Possible routes of exposure: See Section 2

Acute Effects

Assessment of acute toxicity: not applicable

Information on: Isopentane

Assessment of acute toxicity: Aspiration may result in chemical pneumonitis, which may be fatal.

Oral: Type of value: LD50 Value: > 2000 mg/kg

Inhalation: Type of value: LC50 Value >5 mg/l

Dermal: Type of value: LD50 Value > 2000 mg/kg

Skin: Prolonged contact with the product can result in skin irritation.

Eye: Similar findings as for the skin apply to eyes.

Sensitization: No evidence

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

Repeated dose toxicity

Assessment of repeated dose toxicity: Based on our experience and the information available, no adverse health effects are expected if handled as recommended with suitable precaution for designated uses.

Genetic toxicity

Assessment of mutagenicity: Based on our experience and the information available, no adverse health effects are expected if handled as recommended with suitable precaution for designated uses.

Carcinogenicity

Assessment of carcinogenicity: Based on our experience and the information available, no adverse health effects are expected if handled as recommended with suitable precaution for designated uses.

Reproductive toxicity

Assessment of reproduction toxicity: Based on our experience and the information available, no adverse health effects are expected if handled as recommended with suitable precaution for designated uses.

Other Information:

No reports of ill effects provided product was correctly handled and processed.

Symptoms of Exposure

Headache, dizziness, incoordination, dazed state, eye irritation, skin irritation.

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. It is not expected to harm ecosystems through its applied use.

Toxicity

Aquatic toxicity

Assessment of aquatic toxicity: There is a high probability that the product is not acutely harmful to aquatic organisms. No toxic effects occur within the range of solubility.

Aquatic invertebrates

EC50 (48 h) > 100 mg/l, *Daphnia magna* (OECD Guideline 202, part 1, static)

Normal concentration. The product has low solubility in the test medium. An eluate has been tested. No toxic effects occur within the range of solubility. The product has not been tested. The statement has been derived from substances/product of similar structure of composition.

Aquatic plants

EC50 (72 h) >100 mg.l (growth rate), *Desmodium subspicatus* (OECD Guideline 201, static). Normal concentration. The product has low solubility the test medium. An eluate has been tested. No toxic effects occur within the range of solubility. The product has not been tested. The statement has been derived from substances/product of similar structure of composition.

Persistence and degradability

Assessment biodegradation and elimination (H20)

On the basis of the data available concerning eliminability/degradation and bioaccumulation potential, longer-term harm to the environment is improbable. No data available concerning biodegradation and elimination.

In accordance with the required stability the product is not readily biodegradable. The product has not been tested. The statement has been derived from the structure of the product. The product is virtually insoluble in water and can thus be separated from water mechanically in suitable effluent treatment plants.

Elimination information

Non-biodegradable

Bioaccumulative potential

The product will not be readily bioavailable due to its consistency and insolubility in water.

Additional Information

Add remarks environment, fate & pathway: Because of the product's consistency and low water solubility, bioavailability is improbable.

Other Ecotoxicological advice: At the present state of knowledge, no negative ecological effects are expected. No toxic effects occur within the range of solubility.

Information of Pentane:

The substance has a very low Global Warming Potential and no Ozone Depleting Potential.

13. WASTE DISPOSAL CONSIDERATIONS

RCRA Hazard Class: Non-hazardous

Waste Disposal: This product is not regulated by CERCLA (Superfund). Dispose of in accordance with national, state, and local regulations. Do not discharge into waterways or sewer systems without proper authorization.

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

Federal Regulations

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 known to 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: State

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 | | | | | | |
| Styrene | 100-42-5 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |

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 | 1% English Item 1243; French Item 1348 |
| | 78-78-4 | |
| | 287-92-3 | |
| Styrene | 100-42-5 | 0.1% English Item 1473; French Item 1508 |

CERCLA RQ
100 lbs.

CAS Number
78-78-4; 109-66-0

Chemical Name
Isopentane; Pentane

State Regulations

| State RTK | CAS Number | Chemical Name |
|------------------|-------------------|----------------------|
| MA, PA | 7782-42-5 | Graphite |
| MA, PA | 109-66-0 | Pentane |
| MA, NJ, PA | 78-78-4 | Isopentane |

| | | |
|---------------------------|---------|---------------|
| NFPA Hazard codes: | | |
| Health: 1 | Fire: 2 | Reactivity: 0 |

| | | |
|-------------------------|---------|--------------------|
| HMIS III rating: | | |
| Health: 1 | Fire: 2 | Physical Hazard: 0 |

16. ADDITIONAL COMMENTS

Other Information

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.

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