SPRINGVALE EPS LTD
MANUFACTURERS SAFETY DATA SHEET
EXPANDED POLYSTYRENE

Revised March 09 Version: 4

The following information is intended as guidance for those handling and working with finished expanded polystyrene products and as such it is not exhaustive. Any enquiries or requests for further information should be made to our Technical Department. Springvale does not except responsibility for the miss use of this product or interpretation of this document. The end user should ensure they carry out their own risk assessments based on the interaction of this product within their process or operations. Springvale will endeavour to work with its customers on all aspects of its product range please make us aware if you suspect incorrect information within this document.

1. IDENTIFICATION

1a: Product Names	All standard product including expanded Bead
1b: Product Type	Expanded Polystyrene (EPS) grades E & F
1c: Suppliers Address	Springvale EPS Ltd.
1d: Technical Department	Telephone No: 0845 7697452

2. COMPOSITION/INFORMATION ON INGREDIENTS

2a: Description

Expanded polystyrene containing residual amounts of expanding agent pentane. Type E products also Contain a brominated flame retardant.

2b: Dangerous Components. **#Refers to blowing agent**

Component Name	CAS No.	Hazard F	Risk Phrase
#Pentane	#109-66-0	#Highly flammable	#11

2c:Other Information

CAS number for polymer component - 900/3-53-6 (Polystyrene)

3. HAZARD IDENTIFICATION

3a: Human Health Hazard

- EPS is not known to lead to any skin irritations and is regarded as biologically inert. Residual quantities of pentane and styrene monomer are insignificant. However during hot wire cutting adequate ventilation should be provided as fumes can cause irritation to the respiratory tracts and eyes.
- Where substantial dust is produced in subsequent re- working or processing of EPS (e.g. band sawing or grinding), suitable dust extraction should be provided, to ensure that exposure does not exceed 10mg/m^3 8 hours TWA (Occupational Exposure Limit for total invaluable dust).

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3.b Safety Hazards

EPS is organic and therefore combustible. Although not exhaustive the following list of recommendations should be included when assessing the fire precautions of EPS product

- Smoking should be prohibited in the storage and processing areas.
- **Bead.** Static build up whilst transferring EPS Bead can create a fire risk. Ensure EPS bead is transferred at slowest speed possible and that all transfer equipment is suitably earthed
- EPS should be stored away from highly inflammable material such as paint or petroleum products.
- Storage and working areas should be kept free from rubbish that may spread fire or ignite spontaneously.
- Fire extinguishers / hose reels should be available at all times. And at easily recognisable fire points
- A hot work permit must be operated in areas storing or using EPS product
- Polystyrene dust, like other hydrocarbon based polymers in this form, is classified as a Group (A) flammable dust and precautions should be taken as required by Section 31 of the Factories Act 1961.
- During cutting, re working, re-cycling avoid accumulation of dusts creating explosive atmospheres use appropriate extraction
- If there is an outbreak of fire, the Fire Brigade should be called immediately and advised that EPS is involved.

4. FIRST AID MEASURES

4a: Inhalation

- Only dust produced from machining EPS or small particles are likely to be inhaled. Clear the respiratory tracts. If recovery does not occur obtain medical attention.

4b: Skin

- No specific measures maintain good standards of hygiene during use

4c: Eyes

- Flush EPS particles from the eye with water. If rapid recovery does not occur obtain medical attention

4d: Ingestion

- No specific measures. If swallowed consult medical advice

4e: Fire Inhalation of smoke or fumes

- Remove from exposure into fresh air. Keep warm and at rest. If rapid recovery does not occur obtain medical attention

Skin contact

- Molten material - Immediately flood affected area and adhering molten polymer with plenty of cold water. **DO NOT** attempt to remove molten or solidified material from the skin. Obtain immediate medical attention.

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5: FIRE FIGHTING MEASURES

5a: Specific Hazards

- Hazardous combustion products may include carbon monoxide, carbon dioxide, and Styrene monomer. Hydrogen bromide may also be released from fire retardant grades

5b. Extinguishing Media

- Foam, water spray or fog. Dry chemical powder or carbon dioxide.

6. ACCIDENTAL RELEASE MEASURES

- This product is in solid form and releases no harmful substances. No specific personal protection required, disposal refer to Section 13.
- Expanded bead: do not allow entering drains or water course clean up spills and store in a suitable container disposal refer to section 13.

7. HANDLING AND STORAGE

Although not exhaustive the following list of recommendations should be included when assessing the storage of EPS product

- Store under cover in dry conditions taking into account recommendations in Section 3b - Fire Precautions.
- Stocks of EPS material should be sited so in the event of a fire; flowing or dripping material will not cause the spread of fire to other combustible materials or to other areas of a building, in particular staircases and corridors.
- Storage should be in a level situation at ground level (not on ramps). Raised thresholds to doorways or bunds should be provided where storage on upper floors is unavoidable (particularly to the edges of floors without up stands and around staircases). The bund walls should be of fire-resisting and liquid-tight construction. The capacity of the bund area should be adequate for the volume of EPS stored.
- In warehouses where large quantities of EPS are stored, consideration should be given to the use of sprinkler systems
- Storage areas should be sited in such a manner that permanently marked access ways can be maintained, and should not impair performance of any sprinkler system.
- On building sites EPS should be stored wherever possible in a fenced compound or building which can be secured, under cover, protected from high winds and raised above damp surfaces. EPS boards should be stacked flat without bearers and protected from direct sunlight if exposure is likely to exceed one week.
- Individual storage areas on building and civil engineering sites, generally, should not contain more than 60 cubic metres (about 1 tonne) of material. If a bigger volume needs to be stored, it should be divided into 2 or more areas, at least 20 metres apart. (This refers to building and civil engineering sites). British Standards (Sect 7.4 BS6203)
- Care should be taken to avoid contact with aromatic solvents, oils, and materials such as coal tar, pitch and creosote.
- Small amounts of residual pentane (expansion agent) may be given off by finished product. Store and handle in well ventilated areas. Observe no smoking regime, avoid sources of ignition, and avoid inhalation.
- Storage temperature - ambient.

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8.EXPOSURE CONTROLS/PERSONAL PROTECTION

8a:

- Further protection required when handling expanded polystyrene, other than those stated under Section 3 should not normally be required however individual exceptions may be established as the end user should ensure a suitable and sufficient risk assessment is undertaken of the interaction of EPS and their process or operations.

8b: Occupational exposure standards

The following are the Occupational Exposure Limits for the **expansion agent** and for decomposition products. The Styrene Monomer O.E.S. is in fact a Maximum Exposure Limit (MEL).

Component Name	**Limit Type**	**Value**	**Unit**	**Other Info.**
Pentane	TWA 8hr	600	ppm	ACGIH
Pentane	STEL 15min	750	ppm	ACGIH
Styrene Monomer	TWA 8hr	430	mg/m3	EH40/00
Styrene Monomer	STEL 15min	1080	mg/m3	EH40/00
Hydrogen Bromide (Type A only)	STEL 15min	10.0	mg/m3	EH40/00
Hydrogen Bromide (Type A only)	STEL 15min	10.0	mg/m3	EH40/00

9. P**HYSICAL AND CHEMICAL PROPERTIES**

- Physical State: Cellular Foam
- Form: Moulded / Cut shapes or sheets
- Colour: White (Clay shield is coloured blue)
- Density: Ranges from 9 kg/m^3 to 40 kg/m^3
- Solubility in water: Not soluble
- Solubility in other solvents: Soluble in aromatic, halogenated solvents and ketenes
- Softening point: 95-100℃
- Ignition temperature in air: 350℃

10: STABILITY/REACTIVITY

- Expanded polystyrene is stable under normal use conditions and decomposes above 200℃. The following conditions should be avoided:
- Heat, flames and sparks. Strong sunlight for prolonged periods

11: TOXICOLOGICAL INFORMATION

- Expanded polystyrene is non-toxic and is not irritating to the skin and eyes

12: ECOLOGICAL INFORMATION

- The products are not biodegradable; non-toxic but small particles may have physical effects on aquatic and terrestrial organisms.

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13: **DISPOSAL CONSIDERATION**

Waste Disposal

Recover or recycle if possible using a registered re-cycler. Scrap expanded polystyrene is not classified as "Notifiable Waste" and may be disposed of in suitable landfill tips or by incineration under approved conditions. Advice on the preferred method should be obtained at all times from local environmental authorities

- Flame retardant grades contain a halogen complex flame retardant additive encapsulated in the polystyrene which can give rise to the emission of gases such as hydrogen bromide during incineration of waste product.
- European Waste catalogue number: 170604

14: TRANSPORT INFORMATION

- U.N. Number (United Nations) 2211
- EPS products may contain residual amounts of pentane so good ventilation should be provided during transportation
- No smoking and controls against exposure to ignition sources should be enforced whist transporting, loading and unloading operations

15. REGULATORY INFORMATION

- EC Label Name: Expanded Polystyrene
- Reach regulations (EC)
- FRA material grades contain Hexabromocyclododecane above 0.1%(w/w) listed on the candidate list for authorization established in accordance with article 59.1

16. OTHER INFORMATION

Uses range

- Insulation of walls, roofs and floors in domestic and other buildings. Cut pieces for packaging, civil
- engineering and flotation, protection of foundations from clay movement.
- Manufactures Safety Data Sheet Listing This document supersedes any other data sheet (M.S.D.S.) issued by Springvale EPS Ltd.

Safety Data Sheet Distribution.

- This document contains important information to ensure the safe storage, handling and use of this product. The information in this document should be brought to the attention of the person in your organisation, responsible for advising on safety matters.