

1: IDENTIFICATION OF SUBSTANCE / PREPARATION / COMPANY INFORMATION

Product : Expanded Polystyrene (EPS) Type White Non FRA and FRA Class E

Application	Uses: Not exhaustive but can Include
Loose Bead	Cavity wall insulation / Commercial fillings
Block/Sheet	Wide range of construction uses including Civil Engineering fabrications, foundation clay heave protection, flotation units, temporary and permanent formers, thermal insulation boards, Protective / Insulating packaging.

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2: HAZARD IDENTIFICATION (although not exhaustive)

Human Health Hazard: Expanded polystyrene (EPS)

- EPS product itself is not classed as a hazardous substance under the current COSHH regulations
- EPS is regarded as biologically inert.
- However during hot wire cutting suitable and adequate ventilation should be provided as smoke / fumes may cause irritation to the respiratory tracts and eyes.
- Where substantial dust is likely to be produced in any subsequent re- working or processing of EPS (band sawing or grinding) suitable dust extraction should be provided to ensure exposure is kept to a minimum.

Safety hazards

- EPS is chemically organic and therefore combustible. The following list of recommendations although not exhaustive is aimed at providing guidance and best practice when assessing fire risk with EPS material.
- As a matter of best practice Smoking should be prohibited in EPS storage, conversion and processing areas.
- Static build up whilst transferring EPS loose bead can create a fire risk.
- Ensure EPS loose 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.
- Maintain good housekeeping regimes in storage, work and processing areas they should be kept free from the build-up of waste / rubbish that may spread fire or ignite spontaneously.
- Fire extinguishers / hose reels should be available at all times at clearly signed and easily accessible fire points.
- A hot work permit must be operated in all areas involved in the processing, storage, or re-working of EPS materials. (EPS) dust, like other hydrocarbon based polymers in this form is classified as a Group (A) flammable dust and suitable precautions should be taken including the use of appropriate extraction to avoid accumulations creating explosive atmospheres.
- During the cutting, re working, re-cycling of EPS avoid the accumulation of fine dusts creating explosive atmospheres, use appropriate controls and extraction.
- Strong winds may liberate loose bead, EPS board or cut EPS pieces. Ensure products are secured and sealed effectively.
- In the event of a fire which requires the Fire Service to attend ensure they are advised that EPS is involved.

3: COMPOSITION / INFORMATION ON INGREDIENTS (although not exhaustive)

Description

Expanded polystyrene (EPS) may contain residual minimal amounts of Pentane expansion agent.

Class E products also contain a polymerised flame retardant
Polystyrene CAS number 9003-53-6

	Component Name	Content range	CAS No
Expansion Agent	Pentane	(W/W) <1%	109-66-0
	Iso pentane	(W/W) <1%	78-78-4

4: FIRST AID MEASURES (although not exhaustive)

Inhalation: Unlikely, however dust or small particles produced from the re-working or machining of EPS may be inhaled. During operations likely to create dust or small particles ensure adequate methods of extraction are used and suitable PPE is available. If dust or small particles are inhaled clear the respiratory tracts. If rapid recovery does not occur obtain immediate medical attention.

Skin & Skin contact: No specific measures, however maintain good standards of hygiene during and after use. Operations likely to create molten plastic ensure suitable controls are in place to prevent skin contact and suitable PPE is available. In the event of contact DO NOT try to pull molten or solidified material from the skin, Flood affected area immediately with cold water and obtain immediate medical attention.

Eyes: Dust or small particles produced from re-working or machining EPS may irritate eyes. During operations likely to create dust or small particles ensure suitable extraction is used and suitable PPE is available. If contact occurs flush EPS particles from the eye/s with water. If rapid recovery does not occur obtain immediate medical attention.

Ingestion: No specific measures. If swallowed seek immediate medical attention

Fire, Inhalation of smoke or fumes: Remove the subject from exposure into fresh air. Keep subject warm and at rest. If rapid recovery does not occur obtain immediate medical attention

5: FIRE FIGHTING MEASURES (although not exhaustive)

Specific Hazards: Hazardous combustion products may include carbon monoxide, carbon dioxide, and styrene monomer.

Extinguishing Media: Foam, water spray or fog. Dry chemical powder or carbon dioxide.
Do not use water or Foam on fires involving electricity.

Fire Service: If it is necessary to summons the Fire Services for assistance please advise them that expanded polystyrene (EPS) is involved.

6. ACCIDENTAL RELEASE MEASURES (although not exhaustive)

EPS block/board: This product is supplied in moulded block/or cut board form and as such does not pose any specific threat. No specific personal protection required, disposal or re-cycling (refer to Section 13).

EPS bead: Do not allow loose bead to enter into drains or watercourses clean up spills and store in a suitable containers for disposal or re-cycling (refer to section 13).

7. HANDLING AND STORAGE (although not exhaustive)

The following list of recommendations are presented as guidance and best practice when assessing the storage and handling of EPS product:

1. Store under cover in dry conditions taking into account safety information & recommendations in the previous sections of this document.
2. 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 store away from staircases and corridors.
3. 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 material and liquid-tight construction. The capacity of the bund area should be at least 3% of the maximum total volume of EPS stored.
4. In Warehouses where large quantities of EPS are stored, consideration should be given to the use of sprinkler systems.
5. Storage should not impair the performance of any sprinkler system.
6. Storage temperature – ambient.
7. Storage areas should be sited in such a manner that permanently marked access & exit ways can be maintained.
8. Ensure EPS is stored in well ventilated areas away from all ignition sources including exposed overhead, lighting / heating etc. Operate a hot work permit procedure, and observe no smoking regime,
9. On building sites EPS should be stored wherever possible in a secure fenced compound or building. It should be stored 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 7 days
10. Individual storage areas on building and civil engineering sites generally should not contain more than 60 cubic meters (about 1 tonne) of material. If a greater volume needs to be stored it should be divided into 2 or more areas at least 20 meters apart. (This refers to Building and Civil Engineering Sites) British Standards (Sect 7.4 BS6203).
11. Care should be taken to avoid contact with aromatic solvents, oils, and materials such as coal tar, pitch and creosote.
12. Small amounts of residual pentane (expansion agent) may be given off by finished product, avoid inhalation.
13. Weather conditions such as high winds may liberate loose bead or cut EPS pieces, ensure products are stored and sealed securely and protected from high winds.
14. Although some EPS products are relatively light and may be carried by an individual, it is recommended to avoid injury to the carrier or damage to the product the end user should carry out a risk assessment of onsite operating and environmental conditions likely to affect safe handling of EPS product.
15. After re-working the surface of some EPS boards or cut pieces may be rough textured therefore suitable work wear should be worn to protect from rubbing on the skin, arms etc.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION (although not exhaustive)

Further protection during use / handling of EPS other than previously stated should not normally be required; however individual exceptions may be established. The end user should therefore ensure a suitable and sufficient risk assessment including environmental considerations is undertaken of the interaction of Polystyrene (EPS) and their processes, tasks or operations.

Occupational exposure standards: As a Guide

The following are the Occupational Exposure Limits for the expansion agent and for decomposition products

TWA=Time Weighted Average - STEL Short Term Exposure Limit – MEL Maximum Exposure limit.

Component Name	Limit Type	PPM	Mg/m3	Other Info.
Pentane	TWA 8hr	600	1800	
Pentane	STEL 15min	-	-	
Styrene	TWA 8hr	100	430	
Styrene	STEL 15min	250	1080	

9. PHYSICAL AND CHEMICAL PROPERTIES (although not exhaustive)

- Physical State: Cellular Foam
- Form: Moulded / Cut shapes or sheets
- Colour: White
- Density: Ranges from 9 kg/m³ to 50 kg/m³
- Solubility in water: Not soluble
- Solubility in other solvents: Soluble in aromatic, halogenated solvents and ketones
- Softening point: 95-100°C
- Ignition temperature in air: 360°C

10: STABILITY/REACTIVITY (although not exhaustive)

Expanded polystyrene is stable under normal use conditions and decomposes above 200°C.

Avoid: Heat, flames& sparks. Avoid Strong sunlight for prolonged periods.

11: TOXICOLOGICAL INFORMATION (although not exhaustive)

Expanded polystyrene is non-toxic.

12: ECOLOGICAL INFORMATION (although not exhaustive)

Products are non-biodegradable. Nontoxic

13: DISPOSAL CONSIDERATION (although not exhaustive)

Waste Disposal

If possible recover or recycle using a registered re-cycler.

Scrap expanded polystyrene is not classified as "Notifiable Waste" and may be disposed of in suitable landfill sites or by incineration under approved conditions. Advice on the preferred method of disposal should be obtained at all times from local environmental authorities.

Waste Key 07 02 13

14: TRANSPORT INFORMATION (although not exhaustive)

Product not classed as hazardous.

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

15. REGULATORY INFORMATION (although not exhaustive)

- EC Label Name: Expanded Polystyrene.

16. OTHER INFORMATION: (not exhaustive in content)

The information supplied in this document 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 helpline. Springvale does not accept responsibility for the miss use of this product or wrongful interpretation of this document. The end user should ensure they carry out their own risk assessments including environmental considerations based on the interaction of this product with their process or operations. Springvale will endeavour to work with its customers on all aspects of its product range. Please make us aware of any concerns you may have regarding the content of this document or product use. Springvale reserve the right to update/ review content and information of this and associated documents regularly. Springvale MSDS are produced in good faith in consultation with documentation and information supplied from raw material suppliers and we may from time to time make adjustments to information contained within this document.

Manufactures Safety Data Sheet Listing

This document supersedes any other previous data sheet (M.S.D.S.) issued by Springvale EPS Ltd.

Safety Data Sheet Distribution. (Although not exhaustive)

This document contains important information aimed at 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.

Environmental considerations

Springvale are registered waste carriers and re-cyclers. Uncontaminated polystyrene can be re-cycled by Springvale

Other Guidance (although not exhaustive)

HSE Plastics processing sheets No1/2 <http://www.hse.gov.uk/pubns/ppis1.pdf>
<http://www.hse.gov.uk/pubns/ppis2.pdf>



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