Product: Polystyrene Insulation Health and Safety Data Sheet
Product Code: PSE020-PSE250, PRS050-PRS200

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The following information is intended to act as guidance for those persons handling finished expanded polystyrene products. Any enquiries or requests for further information should be made to the Technical Department. The end user should ensure they carry out their own risk assessments based on the operation they perform.

1. **IDENTIFICATION**

a. Product Names: Wallshield

b. Product Type: Expanded Polystyrene (EPS) Type N & SE

Suppliers Address: Springvale EPS Ltd.
Dinting Vale Business Park
Dinting Vale Glossop
Derbyshire SK13 6LG

d. Technical Department - Telephone No: 0845 7697452

2. **COMPOSITION/INFORMATION ON INGREDIENTS**

a. Description: Expanded polystyrene containing residual amounts of expanding agent pentane. Type SE products also contain a brominated flame retardant.

b. Dangerous Components

Component Name	CAS No.	Content Range	Hazard F
Pentane	109-66-0	<1%wt	Highly flammable

R phrases R11

c. Other Information: CAS number for polymer component - 900/3-53-6 (Polystyrene)

3. **HAZARD IDENTIFICATION**

a. Human Health Hazard: EPS is not known to lead to any skin irritations and is regarded as biologically inert. esidual 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 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).

b. Safety Hazards: EPS is organic and therefore combustible. The following fire precautions are recommended.

1. Smoking should be prohibited in the storage and processing areas. EPS should be stored away from highly inflammable material such as paint or petroleum products.
2. Storage and working areas should be kept free from rubbish that may spread fire or ignite spontaneously.
3. Fire extinguishers and/or hose reels should be available at an easily recognizable fire point and at all times close at hand when welding or burning adjacent to EPS.
4. 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.
5. If there is an outbreak of fire, the Fire Brigade should be called immediately and advised that EPS is involved. The area should be evacuated by all personnel, except those fighting the fire.

4. **FIRST AID MEASURES**

a. First Aid (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.

b. First Aid (Skin): No specific measures.

c. First Aid (Eyes): Flush EPS particles from the eye with water. If rapid recovery does not occur obtain medical attention.

d. First Aid (Ingestion): No specific measures.

e. First Aid (Fire):

<u>Inhalation of smoke or fumes</u>
Remove from exposure into fresh air. Keep warm and at rest. If there is respiratory distress, give oxygen. If breathing stops or shows signs of failing, apply artificial respiration. Obtain immediate medical attention.

<u>Skin contact</u>
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.

5. **FIRE FIGHTING MEASURES**

a. Specific Hazards: Hazardous combustion products may include carbon monoxide and carbon dioxide. Hydrogen bromide may also be released from fire retardant grades.

b. Extinguishing Media: Foam, water spray or fog. Dry chemical powder orcarbon dioxide.

6. **ACCIDENTAL RELEASE MEASURES**

This product is in solid form and releases no harmful substances. No specific personal protection required, and for clean up and disposal refer to Section 13.

7. **HANDLING AND STORAGE**

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 upstands 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.
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. In warehouses where large quantities of EPS are stored, consideration should be given to the use of sprinkler systems.
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, avoid inhalation.
Storage temperature - ambient.

8. **EXPOSURE CONTROLS/PERSONAL PROTECTION**

a. No further protection is required when handling expanded polystyrene, other than those stated under Section 3.

b. 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

9. **PHYSICAL AND CHEMICAL PROPERTIES**

Physical State	Cellular Foam
Form	Moulded shapes or sheets
Colour	White (Clayshield is coloured blue)(Microfoam is coloured Green)
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 ketones
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.

Hazardous decomposition products are styrene monomer, hydrogen bromide and in certain circumstances, carbon monoxide.

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.

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.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.