

Sunpor Lambdapor® STD

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product identifier

Trade name Sunpor Lambdapor® STD

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CAS No. None assigned.

EINECS No. None assigned.

REACH Registration No. None assigned.

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified use(s) Used primarily for the manufacture of foamed thermal insulation and packaging.

Uses advised against None known.

1.3 Details of the supplier of the Safety Data Sheet

SUNPOR Kunststoff GmbH
 Tiroler Straße 14
 3105 St. Pölten
 Austria / Österreich

Telephone ++ 43 2742 291 0
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 eMail office@sunpor.at

1.4 Emergency telephone number 24 h Emergency Contact Services
 National Chemical Emergency Centre (NCEC) Oxfordshire, UK
+44 (0) 12 35 23 96 70 Sunpor Kunststoff GmbH – NCEC29003

United Kingdom: National Poisons Information Centre: None provided

SECTION 4: FIRST AID MEASURES



4.1 Description of first aid measures

Inhalation	Remove persons affected by vapour to fresh air. If symptoms persist, obtain medical attention.
Skin Contact	Wash skin with soap and water. If symptoms persist, obtain medical attention.
Eye Contact	Irrigate with eyewash solution or clean water, holding the eyelids apart, for at least 15 minutes. If symptoms persist, obtain medical attention.
Ingestion	Unlikely to be hazardous if swallowed. IF SWALLOWED: Do not induce vomiting. Obtain medical attention immediately if ingested.

4.2 Most important symptoms and effects, both acute and delayed

Inhalation: Headache, Dizziness.
 Eyes and Skin Contact: Redness, Irritation.

4.3 Indication of immediate medical attention and special treatment needed

Unlikely to be required but if necessary treat symptomatically.

SECTION 5: FIRE-FIGHTING MEASURES

Product is not classified as flammable, but will burn on contact with flame or exposure to high temperature (see Section 9).

5.1 Extinguishing Media

Suitable Extinguishing Media	Water spray, foam, dry powder or CO ₂ .
Unsuitable Extinguishing Media	Do not use water jet.

5.2 Special hazards arising from the substance or mixture

This product may give rise to hazardous fumes in a fire. Hazardous Decomposition Products: Carbon monoxide, Carbon dioxide, styrene, aliphatic hydrocarbons.

Advice for fire-fighters

Fire fighters should wear complete protective clothing including self-contained breathing apparatus. Chemical protection suit. Keep containers cool by spraying with water if exposed to fire. Flammable concentrations of pentane may accumulate on storage in closed containers.

SECTION 6: ACCIDENTAL RELEASE MEASURES**6.1 Personal precautions, protective equipment and emergency procedures**

Caution - spillages may be slippery.

Pentane can form explosive mixture with air. The pentane vapour is heavier than air; beware of pits and confined spaces. Remove or make safe all sources of ignition. Avoid friction, sparks, or other means of ignition. Take precautionary measures against static discharges. Use only non-sparking tools.

6.2 Environmental precautions

Prevent entry into drains.

6.3 Methods and material for containment and cleaning up

If safe to do so: Small spillages: Sweep up and shovel into waste drums or plastic bags. Transfer to a lidded container for disposal or recovery. Large spillages: Use vacuum equipment suitable for use in hazardous locations for collecting spilt materials, where practicable. Transfer to a lidded container for disposal or recovery.

6.4 Reference to other sections

See Also Section 8 and 13.

SECTION 7: HANDLING AND STORAGE**7.1 Precautions for safe handling**

Provide adequate ventilation, including appropriate local extraction. Do not breathe dust. Avoid generation of dust clouds. Should be kept away from naked flames and other sources of ignition. Extinguish any other fire. Remove or make safe all sources of ignition. Avoid friction, sparks, or other means of ignition. The electrical system should be spark-free. Do not eat, drink or smoke when using this product. Take precautionary measures against static discharges. Ensure adequate earthing. Avoid release to the environment. Permission must be obtained from the appropriate Local Authority before disposing of waste material.

Process Hazards

Take precautionary measures against static discharges. To avoid the buildup of static electric charge, and also the formation of an explosive pentane-air mixture, containers should be fully emptied when processing. Line velocity should not exceed 8m/s during normal pumping operations. All parts of the plant and equipment should be electrically bonded together and connected to earth. Electrical continuity should be checked at regular intervals. Antistatic clothing and footwear should be used.

7.2	Conditions for safe storage, including any incompatibilities	<p>Flammable concentrations of pentane may accumulate on storage in closed containers. Before unloading freight containers, keep doors open and ventilate for one hour. Keep container tightly closed, in a cool, well ventilated place. Keep away from direct sunlight and other sources of heat or ignition. Keep away from rain and moist conditions. Bulk: Keep under inert gas. Open top tanks should be covered with an open rigid grid. Take precautionary measures against static discharges. The electrical system should be spark-free. The product is usually supplied in fibreboard octabins. It is recommended not to double stack octabins.</p>
	Specific design for storage rooms or vessels	<p>Storage rooms should be kept cool to reduce pentane release, and provided with a suitable ventilation system to prevent accumulation of pentane. In addition, safety devices to alert any build up of pentane/air explosive mixtures should be used. The electrical system should be spark-free. Equipment to be installed in potentially explosive atmospheres should conform to the requirements of ATEX Directive 94/9/EC.</p>
	Storage Temperature	<p>Ambient.</p>
	Incompatible materials	<p>Avoid storing or handling in conjunction with UN Class 1 explosives.</p>
	Suitable containers	<p>Steel (drums).</p>
7.3	Specific end use(s)	<p>Used primarily for the manufacture of foamed thermal insulation and packaging.</p>

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Occupational Exposure Limits

United Kingdom:

109-66-0: pentaneTWA value 3,000 mg/m³ ; 1,000 ppm (OEL (EU))

indicative

TWA value 1,800 mg/m³ ; 600 ppm (WEL/EH 40 (UK))**78-78-4: isopentane; 2-methylbutane**TWA value 3,000 mg/m³ ; 1,000 ppm (OEL (EU))

indicative

TWA value 1,800 mg/m³ ; 600 ppm (WEL/EH 40 (UK))

8.2 Exposure controls

8.2.1 Appropriate engineering controls

Use only in well-ventilated areas.

8.2.2 Personal protection equipment

Eye/face protection



Safety spectacles.

Skin protection (Hand protection/
Other)

Wear suitable gloves. Recommended: Impervious gloves (EN 374). Breakthrough time of the glove material: refer to the information provided by the gloves' producer. Wear suitable protective clothing. Antistatic safety shoes or antistatic boots.

Respiratory protection



An approved dust mask should be worn if dust is generated during handling.

Thermal hazards

Not applicable.

8.2.3 Environmental Exposure Controls

European Community and local provisions on Volatile Organic Substances (VOC), are to be fulfilled when they are applicable to the EPS industry.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

These properties are the most relevant.

9.1 Information on basic physical and chemical properties

Form	Solid, Small spherical beads.
Colour	White or colored
Odour	Perceptible odour.
Odour Threshold (ppm)	Not established.
pH (Value)	Not applicable.
Melting Point (°C)	Not available.
Boiling Point (°C)	Not available.
Flash Point (°C)	< -50°C (Pentane)
Upper Explosive Limit (UEL)	7.8% (v/v) (Pentane)
Lower Explosive Limit (LEL)	1.3% (v/v) (Pentane)
Auto Ignition Temperature (°C)	285°C (Pentane) (ASTM E-659)
Evaporation rate	Not available.
Flammability (solid, gas)	In use, may form flammable/explosive vapour-air mixture.
Vapour Pressure (mm Hg)	Not available.
Vapour Density (Air=1)	2.5 (Pentane)
Density (g/ml)	1020–1050kg/m ³ @ 20°C (beads)
Bulk Density (g/ml)	circa. 600kg/m ³ @ 20°C
Softening Point (°C)	70-75°C (beads expand with evolution of pentane)
Solubility (Water)	Insoluble.
Solubility (Other)	Soluble in aromatic hydrocarbons, halogenated solvents and ketones.
Partition Coefficient (n-Octanol/water)	Not available.
Decomposition Temperature (°C)	Not available.
Viscosity (mPa.s)	Not established.
Explosive properties	In use, may form flammable/explosive vapour-air mixture.
Oxidising properties	Not oxidising.

9.2 Other information None.

SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity	Stable under normal conditions.
10.2 Chemical stability	Stable under normal conditions.
10.3 Possibility of hazardous reactions	In use, may form flammable/explosive vapour-air mixture.
10.4 Conditions to avoid	Keep away from heat, sources of ignition and direct sunlight.
10.5 Incompatible materials	Avoid storing or handling in conjunction with UN Class 1 explosives.
10.6 Hazardous Decomposition Product(s)	Pentane, styrene monomer, carbon monoxide (in case of fire or during hot wire cutting). Release of pentane increases with temperature. (beads expand with evolution of pentane).

SECTION 11: TOXICOLOGICAL INFORMATION

This assessment is based on information available on similar products.

11.1 Information on toxicological effects

11.1.1 Polymer

Acute toxicity

- Inhalation The product can evolve pentane vapours, which at high concentrations may lead to dizziness, headache and anaesthetic effects.
- Ingestion Unlikely to be hazardous if swallowed.
- Skin Contact No data.
- Eye Contact No data.

Irritation May cause irritation to skin and eyes.

Corrosivity No data.

Sensitisation No data.

Repeated dose toxicity No data.

Carcinogenicity No data.

Mutagenicity No data.

Toxicity for reproduction No data.

11.2 Other information

None.

SECTION 12: ECOLOGICAL INFORMATION

This environmental hazard assessment is based on information available on similar products.

This product contains substances which are classified as dangerous for the environment. However recent studies on aquatic organisms have shown that EPS-beads, while containing these substances, do not need to be classified for environmental hazard.

12.1 Toxicity Aquatic invertebrates:: EC50 (48 h) > 100 mg/l, Daphnia magna (OECD Guideline 202, part 1, static) Nominal concentration. The product has low solubility in the test medium. An eluate has been tested. No toxic effects occur within the range of solubility.

Aquatic plants:: EC50 (48 h) > 100 mg/l, EC50 (72 h) > 100 mg/l (growth rate), Desmodemus subspicatus (OECD Guideline 202, part 1, static) Nominal concentration. The product has low solubility in the test medium. An eluate has been tested.

12.2 Persistence and degradability The product itself has not been tested. In accordance with the required stability the product is not readily biodegradable. The statement has been derived from the structure of the product. It can be largely eliminated from the water by abiotic processes, e.g. mechanical separation.

12.3 Bioaccumulative potential The product has low potential for bioaccumulation.

12.4 Mobility in soil The product is essentially insoluble in water. Expandable polystyrene sinks in fresh water, may float or sink in sea water.

12.5 Results of PBT and vPvB assessment Not classified as PBT or vPvB

12.6 Other adverse effects Pentane has very low Global Warming Potential (<0.00044) and zero Ozone Depletion Potential.


SECTION 13: DISPOSAL CONSIDERATIONS

Surplus, unused, old beads may still contain residual pentane. Therefore product has to be treated using all the safety measures in place for the fresh material. See Also Section 7.

13.1 Waste treatment methods	Recover or recycle if possible. Remove all packaging for recovery or disposal. Normal disposal is via incineration operated by an accredited disposal contractor.
13.2 Additional Information	Dispose of contents in accordance with local, state or national legislation.

SECTION 14: TRANSPORT INFORMATION

14.1 UN number	UN2211
14.2 Proper Shipping Name	POLYMERIC BEADS, EXPANDABLE, evolving flammable vapour.
14.3 Transport hazard class(es)	9
14.4 Packing Group	III
14.5 Environmental hazards	None. Not classified as a Marine Pollutant.
14.6 Special precautions for user	633: Keep away from any source of ignition. Transport or conveyance within the manufacturing premises: Refer to the internal procedures and information provided by this document. Transport or conveyance outside the manufacturing premises: Apply the requirements of the regulations on transport of dangerous goods and the manufacturer's recommendation on safe loading, transporting, unloading of the material.
14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.

14.8 Additional Information	Hazard Identification Number: 90 Tunnel Restriction Code: D/E IMDG EMS F-A, S-I
Hazard label(s)	
Sea transport (IMDG)	
Air transport (ICAO/IATA)	
	UN Class 9 miscellaneous hazard label

SECTION 15: REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

The data should be considered when making any assessment under the Control of Substances Hazardous to Health Regulations (COSHH), and related guidance, for example, 'COSHH Essentials' (United Kingdom).

Directive 94/62/EC on packaging and packaging waste.

If other regulatory information applies that is not already provided elsewhere in this safety data sheet, then it is described in this subsection.

15.2 Chemical Safety Assessment	Chemical Safety Assessment not required. Exposure scenarios of registered components are available on request.
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SECTION 16: OTHER INFORMATION

In addition to the information given in the safety data sheet we refer to the product specific 'Technical Information'.

Full text of the classifications, including the hazard classes and the hazard statements, if mentioned in section 2 or 3:

Asp. Tox.	Aspiration hazard
Flam. Liq.	Flammable liquids
STOT SE	Specific target organ toxicity — single exposure
Aquatic Chronic	Hazardous to the aquatic environment - chronic
H225	Highly flammable liquid and vapour.
H304	May be fatal if swallowed and enters airways.
H336	May cause drowsiness or dizziness.
H411	Toxic to aquatic life with long lasting effects.
H224	Extremely flammable liquid and vapour.
EUH066	Repeated exposure may cause skin dryness or cracking.

* Data changed from previous version

Training advice:

Suitable information on safety in handling, storage and conversion of the product should be given to employees based on all the existing information. A DVD on EPS Fire Safety is available from Plastics Europe in 18 European languages.

Please contact your EPS beads supplier for a copy.

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Annex to the extended Safety Data Sheet (eSDS)

No information available.