

SAFETY DATA SHEET

(According to Regulation (EC) No. 1907/2006, (EC) No.1272/2008 and (EU) No. 2015/830)

Product Name	ASCHEM EPS R	Date of issue	04.11.2015
		Date of revision	17.12.2018
Form Number	UR.ES-BF-GBF01-EN	Revision No.	4
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SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY / UNDERTAKING

1.1. Product Identifier

Product Name : ASCHEM EPS R (Regular), Expandable Polystyrene
Product Grade/Type : **0305R, 0507R, 0709R, 1012R**
Chemical Name : Expandable Polystyrene (containing pentane expanding agent).
Synonyms : Styrene polymer, EPS R, Regular Expandable Polystyrene polystyrene, poly(phenylethene).
Trade name : ASCHEM EPS R.
CAS No. : None assigned.
EC No. : Polymer exempt.
REACH Registration No. : Polymer exempt.
Chemical Formula : Not available.

1.2. Relevant Identified Uses of The Substance and Uses Advised Against

Identified Use(s) : Used for packaging materials (suitable for food contact and other) and for the manufacture of industrial materials which do not require fire classification.

Uses Advised Against : None known.

1.3. Details of The Supplier of the Safety Data Sheet

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1.4. Emergency Phone Numbers

Emergency Phone No. : +90 322 634 22 10

SECTION 2: HAZARDS IDENTIFICATION

2.1. Classification of the Substance

Regulation (EC) No. 1272/2008 (CLP). In use, may form flammable/explosive vapor-air mixture.
 EUH018: In use, may form flammable/explosive vapor-air mixture.

2.2. Label Elements

According to Regulation (EC) No. 1272/2008 (CLP)

Signal Word : None

Pictograms : None

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Hazard Statement (s)	EUH018: In use, may form flammable/explosive vapor-air mixture.
Precautionary Statements	<p>P210: Keep away from heat, sparks, open flame, hot surfaces. No smoking.</p> <p>P233: Keep container tightly closed.</p> <p>P243: Take precautionary measures against static discharge.</p> <p>P403+P235: Store in well-ventilated place. Keep cool.</p>
2.3. Other Hazards	<p>Product releases pentane, a flammable hydrocarbon.</p> <p>May cause irritation to skin and eyes.</p>

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Polystyrene (CAS No. 9003-53-6), containing pentane isomers as blowing agent and a brominated flame retardant.

3.1. Polymer

Classification according to EC No. 1272/2008

Component	%	CAS No	EINECS No	REACH Registration No.	Hazard Codes & Pictograms (EC 1272/2008)
Polystyrene	> 92.0	9003-53-6	-	Polymer exempt	-
Pentane (mixed isomers)	< 7	109-66-0; 78-78-4	203-692-4; 201-142-8		GHS02, Flam. Liq. 2/1, H225/224; GHS08, Asp. Tox. 1, H304; GHS07, STOT SE 3, H336; GHS09, Aquatic Chronic 2, H411 EUH066

For full text of GHS/H statements see Section 16.

SECTION 4: FIRST AID MEASURES

4.1. Description of first aid measures

Inhalation	Remove persons affected by vapor 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.

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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 the immediate medical attention and special treatment needed

Unlikely to be required but if necessary treat symptomatically.

SECTION 5: FIRE FIGHTING MEASURES

5.1. Extinguishing Media

Suitable extinguishing media

Water spray, carbon dioxide, foam and dry powder.

Unsuitable extinguishing media

Water jet.

5.2. Special Hazards Arising from the Substance

This product may give rise to hazardous fumes in a fire. Hazardous Decomposition Product(s): Carbon monoxide, Carbon dioxide, styrene, aliphatic hydrocarbons and traces of hydrogen bromide can be produced.

5.3. Advice for Firefighters

Firefighters should wear complete protective clothing including self-contained breathing apparatus.

Keep personnel removed from and upwind of fire. Keep containers cool by spraying 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

Spilling product may be slippery.

Pentane can form explosive mixture with air.

The pentane vapor 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 for cleaning up

Small spillages: Sweep up and shovel into waste drums or plastic bags. Transfer to lidded container for disposal or recovery.

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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. Further information: See also Section 8 & 13.

SECTION 7: HANDLING AND STORAGE

7.1. Precautions for Safe Handling

Provide adequate ventilation, including appropriate local extraction. Avoid formation of dust. Do not breath dust. Keep 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. Do not eat, drink or smoke when using this product.

The electrical system should be spark free. Take precautionary measures against static discharges. Ensure adequate earthing.

Avoid release to environment. In case of disposal, permission must be obtained from the appropriate Local Authority.

During process; take precautionary measures against static discharges. Avoid the build-up of static electric charge and the formation of an explosive pentane-air mixture by emptying containers completely when processing.

Do not work with line velocity above 8m/s during normal pumping operations. Increasing line velocity can increase the build up of static electric charges. 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

Flammable concentrations of pentane may accumulate on storage in closed containers. Before unloading freight containers, keep doors open and ventilate for one hour. . 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.

Specific design for storage rooms or vessels: 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.

Storage Temperature: Ambient.

Incompatible materials: Avoid storing or handling in conjunction with UN Class 1 explosives.

Suitable containers: Steel (drums).

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7.3. Specific End Use(s)

Used basically for the manufacture of foamed thermal insulation and packaging.

SECTION 8: EXPOSURE CONTROL/PERSONAL PROTECTION

8.1. Control Parameters

8.1.1. Occupational Exposure Limits

The following are limits for the expanding agent, during the conversion process (expansion) the preparation evolves pentane.

Substance	CAS No.	LTEL (8 hr TWA, ppm)	LTEL (8 hr TWA g/m ³)	STEL (ppm)	STEL (mg/m ³)	Note
Styrene	100-42-5	20	-	40	-	
Pentane (mixed isomers)	109-66-0 78-78-4	600	1800	-	-	WEL

Source: WEL, Workplace Exposure Limit, (UK HSE EH40) (see Section 15)

8.1.2. Biological limit value: Not established.

8.1.3. PNECs and DNELs: Not established

8.2. Exposure controls

8.2.1. Appropriate engineering controls: Use only in well-ventilated areas.

8.2.2. Individual protection measures, such as personal protective 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

Appearance	Solid
Form/Color	Small spherical beads/White (mat)
Density	1020 - 1050 kg/m ³ (beads, at 20 °C)
Bulk density	circa. 600 kg/m ³ (at 20 °C)
Vapour pressure	Not applicable
Vapour density (air: 1)	2.5 (pentane)
Boiling point	Not available
Melting point	Not available
Flash Point	< -50 °C (pentane)
Upper explosive limit	%7.8 (v/v) (pentane)

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Lower explosive limit	%1.3 (v/v) (pentane)
Solubility in water	Insoluble
Solubility (other)	Soluble in aromatic hydrocarbons, halogenated solvents and ketones.
pH	Not applicable
Auto ignition temperature	285 °C (pentane)
Softening point	70-75 °C (beads expand with evolution of pentane)
Explosive properties	May form flammable/explosive vapor-air mixture during usage.
Oxidising properties	Not oxidising

SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity	Stable under normal usage and storage conditions.
10.2. Chemical Stability	Stable under normal usage and storage conditions.
10.3. Possibility of Hazardous Reactions	In use, may form flammable/explosive vapor-air mixture.
10.4. Conditions to avoid	Keep away from heat, sources of ignition and direct sunlight.
10.5. Incompatible Materials	Avoid storage and/or handling with UN Class 1 explosives.
10.6. Hazardous decomposition	Pentane, styrene, carbon monoxide, hydrogen bromide (incase of fire or during hot wire cutting). Release of pentane increases with temperature. (beads expand with evolution of pentane)

SECTION 11: TOXICOLOGICAL INFORMATION

Assessment is based on available information for 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.
Skin corrosion/irritation	May cause irritation to skin and eyes.
Serious eye damage/ irritation	May cause irritation to skin and eyes.
Respiratory or skin sensitization	No data.
Germ cell mutagenicity	No data.

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Carcinogenicity No data.

Reproductive toxicity No data.

STOT - single exposure No data.

STOT - repeated exposure No data.

Aspiration hazard 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 a substance which is classified as dangerous for the environment. However recent studies on aquatic organisms have shown that EPS-beads, while containing this substance, 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), Desmodium subspicatus (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.

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. Bio accumulative potential

The product 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. PBT and vPvB Assessments: No data.

12.6. Other Adverse Effects: None. Pentane has very low Global Warming Potential (< 0.00044) and zero Ozone Depletion Potential.

SECTION 13: DISPOSAL CONSIDERATIONS

Unused, old and surplus beads may still contain residual pentane. So, the product has to be treated using all the safety measures in place for the fresh material (section 7).

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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. UN proper shipping name

POLYMERIC BEADS, EXPANDABLE, evolving flammable vapor.

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 Marpol 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

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SECTION 15: REGULATORY INFORMATION

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

15.1.1. EU regulations

Authorizations and / or restrictions on use

Candidate List of Substances of Very High Concern for Authorization Listed in: Hexabromocyclododecane

REACH: ANNEX XIV list of substances subject to authorization Listed in: Hexabromocyclododecane.
HBCD is listed as a substance in Annex XIV of the REACH regulation and as such is subjected to Authorisation under the REACH; its use and placing of the market will be prohibited as of August 2015, except for the uses for which it may be authorized for beyond that date. Further information is available on request.

REACH: Annex XVII Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles All chemicals are not listed.

Community Rolling Action Plan (CoRAP) All chemicals are not listed.

15.1.2. National regulations Not applicable.

15.2. Chemical Safety Assessment Not available.

SECTION 16: OTHER INFORMATION

Regulation (EC) No. 1272/2008 (CLP)

Hazard statement(s), Precautionary statement(s) and Hazard Codes

H224	Extremely flammable liquid and vapour
H304	May be fatal if swallowed and enters airways
H336	May cause drowsiness or dizziness
H361	Suspected of damaging fertility or the unborn child
H362	May cause harm to breast-fed children
H400	Very toxic to aquatic life
H410	Very toxic to aquatic life with long lasting effects
H411	Toxic to aquatic life with long lasting effects
EUH066	Repeated exposure may cause skin dryness or cracking
Flam. Liq. 1	Flammable liquid Category 1
Asp. Tox. 1	Aspiration hazard Category 1
STOT SE 3	Specific target organ toxicity - single exposure Category 3
Repr. 2	Reproductive toxicity Category 2

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Aquatic Acute 1

Aquatic Chronic 1

Aquatic Chronic 2

Hazardous to the aquatic environment Acute Category 1

Hazardous to the aquatic environment Chronic Category 1

Hazardous to the aquatic environment Chronic Category 2

Hazard Pictograms



GHS02



GHS07



GHS08



GHS09

Legend

LTEL

Long Term Exposure Limit

STEL

Short Term Exposure Limit

PBT

Persistent, Bioaccumulative and Toxic

vPvB

very Persistent very Bioaccumulative

DNEL

Derived No Effect Level

Revision 1: This Safety Data Sheet was prepared in accordance with Regulation (EC) No.1907/2006, (EC) No.1272/2008 and (EU) No. 2015/830

Revision 2: E-mail of competent person has changed.

Revision 3: Form number has changed.

Revision 4: Product Type 0507R and 0709R are added. 0408R and 0810R are excluded from previous version.

Disclaimer

The information contained herein is accurate to the best of our knowledge. We do not suggest or guarantee that any hazards listed herein are the only ones which exist.

ASCHEM makes no warranty of any kind, express or implied, concerning the safe use of this material in your process or in combination with other substances. Effects can be aggravated by other materials and/or this material may aggravate or add to the effects of other materials. User has the sole responsibility to determine the suitability of the materials for any use and the manner of use contemplated. User must meet all applicable safety and health standards.

Annex to the extended Safety Data Sheet (eSDS)

No information available.

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