SAFETY DATA SHEET

BEWi RAW EPS A-, B- AND K-GRADES

The safety data sheet is in accordance with Commission Regulation (EU) 2015/830 of 28 May 2015 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH)

SECTION 1: Identification of the substance / mixture and of the company / undertaking

Date issued	03.02.2021
Revision date	03.02.2022

1.1. Product identifier

Product name	BEWi RAW EPS A-, B– AND K-GRADES

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

Use of the substance / preparation	Used primarly for the manufacture of foamed thermal insulation and for extensive range of cushioning and insulation packaging. Finished goods production is based on a moulding process with use of steam.

1.3. Details of the supplier of the safety data sheet

Manufacturer

Company name	Bewi RAW
Postal address	P.O.Box 360
Postcode	06101
City	Porvoo
Country	Finland
Email	lex.edelman@bewi.com
Website	http://www.bewi.com
Enterprise No.	FI10947476

1.4. Emergency telephone number

Emergency telephone	Telephone number: Tel. +358 9 471977 or +358 9 4711(switchboard) Description: Poison information centre, Helsinki, postal address: P.O.Box 790, FI-00029 HUS

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008 [CLP / GHS]	EUH 018

2.2. Label elements

Precautionary statements	P210 Keep away from . No smoking. P233 Keep container tightly closed. P243 Take action to prevent static discharge. P403+P235 Store in a well-ventilated place. Keep cool.
Supplemental label information	EUH018 In use may form flammable/explosive vapour-air mixture.

2.3. Other hazards

Other hazards	Product releases pentane, a flammable hydrocarbon. It may cause irritation to skin and eyes.

SECTION 3: Composition / information on ingredients

3.2. Mixtures

Substance	Identification	Classification	Contents	Notes
Pentane / mixture of isomers	CAS No.: 109-66-0, 78-78-4 REACH Reg. No.: 01-2119474207-37-0002	Flam. Liq. 1; H224,H225 Asp. tox 1; H304 STOT SE3; H336 Aquatic Chronic 2; H411 EUH 066	< 7 %	

Substance comments: Expandable polystyrene (CAS.N° 9003-53-6), containing pentane isomers as blowing agent.

SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation	Inhalation of pentane may cause respiratory irritation, headache, dizziness and lack of coordination. Remove person affected by vapour to fresh air. If rapid recovery does not occur, obtain medical attention.
Skin contact	Wash skin with soap and water. If symptoms persist, obtain medical attention.
Eye contact	Flush eye immediately with plenty of water, also under the eyelids, for at least 15 minutes. If rapid recovery does not occur, 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

General symptoms and effects	Eyes and Skin Contact: Redness, irritation. Inhalation: headache and dizziness.

4.3. Indication of any immediate medical attention and special treatment needed

Medical treatment	Unlikely to be required but if necessary treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media	Foam, water fog. Dry chemical powder, carbon dioxide, sand and earth may be used for small fires only.
Improper extinguishing media	Do not use water jet.

5.2. Special hazards arising from the substance or mixture

Fire and explosion hazards	The product is not classified as flammable but will burn. Hazardous combustion products may include carbon monoxide, carbon dioxide, styrene and aliphatic hydrocarbons.

5.3. Advice for firefighters

Personal protective equipment	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.
Other information	Keep adjacent containers cool by spraying water.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures	Remove ignition sources. Extinguish naked flames. No smoking. Avoid sparks. Take precautionary measures against static discharge. Avoid standing on spilled product as loose beads cause a slip hazard.

6.2. Environmental precautions

Environmental precautionary measures	Prevent from entering drains.

6.3. Methods and material for containment and cleaning up

Other information	Small spillage: Shovel up and place in a labelled, sealable container for subsequent safe disposal. Large spillage: Transfer to a labelled, sealable container for recovery or safe disposal.

6.4. Reference to other sections

Other instructions	Vapour may form an explosive mixture with air. See section 13 for information disposal.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Handling	Do not breath vapour or fumes from heated product. Avoid generation or accumulation of dust. Use local exhaust extraction over processing area. Storage rooms should be ventilated to reduce the pentane release, and provide a suitable ventilation system to prevent accumulation of pentane (see section 8.1). Ventilate freight containers for one hour before unloading.Should be kept away from naked flames and other sources of ignition. Extinguish any naked flames. Remove ignition sources. Avoid sparks. Avoid friction. Do not smoke. Take precautionary measures against static discharges. Earth all equipment. Avoid releasing the unused material into the environment and dispose of in accordance with the national regulations.

7.2. Conditions for safe storage, including any incompatibilities

Storage	Reseal plastic liners. Keep container tightly closed and in a cool, well-ventilated place. Keep away from direct sun light and other sources of heat or ignition. Keep away from rain, moisture and freezing conditions. Maximum storage temperature: 20°C. Also safety devices to alert about the build up of pentane explosive mixtures with air should be used. The electrical system should prevent sparks. BULK: Keep under inert gas. Open top should be covered with an open rigid grid. Take precautionary measures against static discharges. Install spark free electrical equipment. Ventilate freight containers for one hour before unloading. Line velocity should not exceed 8m/s during normal pumping operations. Type of materials used in the packaging/containers: The product is usually put on the market in cardboard octabin, or in bulk. Other suitable materials: steel (drums). Antistatic footwear and clothing should be used. Earth all equipment. It is recommended not to double stack octabins. Or placing the octabins on warehouse racks without extra support under the pallet.

7.3. Specific end use(s)

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

SECTION 8: Exposure controls / personal protection

8.1. Control parameters

Substance	Identification	Exposure limits	TWA Year
Pentane / mixture of isomers	CAS No.: 109-66-0, 78-78-4	Limit value (8 h) : 500 ppm Limit value (8 h) : 1500 mg/m³ **Limit value (short term)** Value: 630 ppm **Limit value (short term)** Value: 1900 mg/m³	
Control parameters comments	Not established Not established		

DNEL / PNEC

DNEL	Comments: Not established
PNEC	Comments: Not established

8.2. Exposure controls

Safety signs

Precautionary measures to prevent exposure

Product related measures to prevent exposure	Use only in well ventilated areas.

Eye / face protection

Eye protection, comments	Wear safety goggles.

Hand protection

Hand protection, comments	Type of gloves: suitable safety gloves. Breaktrough time of glove material: refer to the information by the gloves producer.

Skin protection

Skin protection remark	Standard work clothes and antistatic safety shoes. Refer to the information by the cloth & glove producer.

Respiratory protection

Respiratory protection, comments	An approved dust mask should be worn if dust is generated during handling.

Appropriate environmental exposure control

Environmental exposure controls	European Community and local provision on Volatile organic substances (VOC), are to be fulfilled when they are applicable to the EPS industry.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	Solid, white or grey small spherical beads.
Odour limit	Comments: Not established
pH	Status: In delivery state Comments: Not available
Melting point / melting range	Comments: Not available
Boiling point / boiling range	Comments: Not available
Flash point	Comments: < -50°C (pentane)
Evaporation rate	Comments: Not available
Flammability	In use may form flammable/explosive vapour-air mixture.
Lower explosion limit with unit of measurement	Comments: 1.3 VOL.-% (pentane)

Upper explosion limit with units of measurement	Comments: 7.8 VOL.-% (pentane)
Vapour pressure	Comments: Not available
Vapour density	Comments: 2.5 (Pentane) air = 1
Relative density	Comments: 1020-1050 kg/m³ (20°C)
Bulk density	Comments: Bulk density appr. 600 kg/m³
Solubility description	Insoluble
Solubility	Comments: Soluble in aromatics, hydrocarbons, halogenated solvents and ketones.
Partition coefficient: n-octanol/ water	Comments: Not available
Auto-ignition temperature	Comments: 285 ° C (Pentane) ASTM E-659)
Decomposition temperature	Comments: Not available
Viscosity	Comments: Not established. Not established.
Explosive properties	In use may form flammable/explosive vapour-air mixture.
Oxidising properties	Not oxidising

9.2. Other information

Other physical and chemical properties

Physical and chemical properties	Softening temperature: 70 – 75 °C. (beads expand with evolution of pentane).

SECTION 10: Stability and reactivity

10.1. Reactivity

Reactivity	Stable under normal conditions.

10.2. Chemical stability

Stability	Stable under normal conditions.

10.3. Possibility of hazardous reactions

Possibility of hazardous reactions	In use may form flammable/explosive vapour air mixture.

10.4. Conditions to avoid

Conditions to avoid	Keep away from heat sources of ignition and direct sunlight.

10.5. Incompatible materials

Materials to avoid	Avoid storing or handling in conjunction with UN Class 1 explosives.

10.6. Hazardous decomposition products

Hazardous decomposition products	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

11.1. Information on toxicological effects

Acute toxicity	Type of toxicity: Acute Value:
Substance	Pentane / mixture of isomers
Acute toxicity	**Type of toxicity:** Acute **Value:**

Other information regarding health hazards

Assessment of acute toxicity, classification	Inhalation The product can evolve pentane vapours, which at high concentrations may lead to dizziness, headache and anaesthetic effects.
Irritation	May cause irritation to skin and eyes.
Assessment of carcinogenicity, classification	Data not available.
STOT-single exposure	Effect to possible exposure to pentane. High exposure of pentane vapours can cause drowsiness and dizziness.
STOT-repeated exposure	-

11.2 Other information

Comments	May cause irritation to skin and eyes.

SECTION 12: Ecological information

12.1. Toxicity

Ecotoxicity	Practically non-toxic, EC50>100 mg/l, to organisms in sewage treatment plants (estimated). Small particles may have physical exxects on aquatic and terrestrial organisms. Inbitory effects on the activity of micro-organisms and impact on sewage treatment plants. The product should not end up in the environment.
Aquatic, comments	Aquatic plants: EC50 > 100 mg/l. Nominal concentration. The product has low solubility in the test medium.

12.2. Persistence and degradability

Persistence degradability additional information	Stable in normal conditions.
Persistence and degradability, comments	Not inherently biodegradable (polymer).

12.3. Bioaccumulative potential

Bioaccumulative potential	EPS has low potential for bioaccumulation.

12.4. Mobility in soil

Mobility	Expandable polystyrene beads sink in fresh water: may float or sink in sea water.

12.5. Results of PBT and vPvB assessment

PBT assessment results	Not available.

12.6. Endocrine disrupting properties

12.7. Other adverse effects

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

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Specify the appropriate methods of disposal	Surplus, unused, old beads may still contain residual pentane. Therefore it has to be treated using all the safety measures in place for the fresh material. Appropriate methods of disposal of preparation: 1. Recycling or incineration. 2. Remove all packaging for recovery, recycle or waste disposal. Dispose of as special waste in compliance with local and national regulations. Recover or recycle if possible. Remove all packaging for recovery or disposal. Normal disposal is via incineration operated by an accredited disposal contractor.

SECTION 14: Transport information

14.1. UN number

ADR/RID/ADN	2211
IMDG	2211
ICAO/IATA	2211

14.2. UN proper shipping name

ADR/RID/ADN	POLYMERIC BEADS, EXPANDABLE, evolving flammable vapour.
IMDG	POLYMERIC BEADS, EXPANDABLE, evolving flammable vapour.
ICAO/IATA	POLYMERIC BEADS, EXPANDABLE

14.3. Transport hazard class(es)

ADR/RID/ADN	9
IMDG	9
ICAO/IATA	9
Comments	9

14.4. Packing group

ADR/RID/ADN	III
IMDG	III
ICAO/IATA	III

14.5. Environmental hazards

Comments	None.

14.6. Special precautions for user

Special safety precautions for user	633: Keep away from any source of ignition.

14.7. Maritime transport in bulk according to IMO instruments

Pollution category	Not applicable.

ADR/RID Other information

Tunnel restriction code	(D/E)
Hazard No.	90

SECTION 15: Regulatory information

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

Legislation and regulations	Not available.

15.2. Chemical safety assessment

Chemical safety assessment	Not available.

SECTION 16: Other information

List of relevant H-phrases (Section 2 and 3)	EUH 018 In use may form flammable / explosive vapour-air mixture. EUH 066 Repeated exposure may cause skin dryness or cracking. H224 Extremely flammable liquid and vapour. 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.
Training advice	Training on safety in handling, storage and converting the product should be given to the employees based on all the existing information.
Recommended restrictions on use	The preparation is intended for professional users only.
Key literature references and sources for data	This Safety Data Sheet was prepared in accordance with EC Regulation (EC) 1907/2006 (REACH), 1272/2008 (CLP) & 453/2010.
Abbreviations and acronyms used	LTEL Long Term Exposure Limit STEL Short Term Exposure Limit

	DNEL Derived No Effect Level PNEC Predicted No Effect Concentration PBT Persistent, Bioaccumulative and Toxic vPvB very Peristent, very Bioaccumulative
Version	13
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