Expanded Polystyrene MSDS

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING	
Product Identifier	Expanded Polystyrene (EPS), Euroclass F and E.
Identified Use	Various Cordek Products (see www.cordek.com)
Supplier of Data Sheet	Cordek Limited, Spring Copse Business Park, Slinfold, West Sussex, RH13 0SZ
Emergency Telephone Number	Tel: (+44) 1403 799600 Open Monday to Thursday: 8am-5pm, Friday: 8am-4pm

SECTION 2: HAZARDS IDENTIFICATION	
Human Health Hazard	EPS is not known to lead to any skin irritations and is regarded as biologically inert. However during hot wire cutting of EPS if ventilation is not adequate the fumes generated can cause irritation to the respiratory tract and eyes. If dust is produced when processing EPS (e.g. band sawing or grinding), suitable dust prevention measures like face masks or extraction should be provided, to ensure that exposure does not exceed 10mg/m^3 8 Hours TWA (Occupational Exposure Limit for total inhalable dust).
Safety Hazards	EPS is organic and combustible, take suitable precautions: 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 Control of Substances Hazardous to Health (COSHH) Regulations 2002. EPS should be stored away from highly flammable material such as paint or petroleum products to reduce risk. Storage and working areas should be kept free from rubbish which may spread fire or ignite spontaneously. Fire extinguishers and/or hose reels should always be available at an easily recognisable fire point. If there is an outbreak of fire, the Fire Brigade should be called immediately and advised that EPS is involved. Smoking should be prohibited in the storage and installation areas and hot works should be controlled by permits and risk assessed. Expanded Polystyrene raw bead contains 5-6% pentane by weight which is off-gassed during the production process, leaving approximately 1-3% post-production. This residual pentane continues to off-gas post supply, the rate of which is variable depending on a variety of factors. Information on Pentane risks can be found on the HSE website (visit www.hse.go.uk publications and search under fire for EPS Pentane). When stored or used in enclosed spaces ensure that the area is adequately ventilated. You should also conduct a suitable risk assessment Under the Management of Health and Safety at Work Regulations 1999; and establish a Permit to Work system to prevent uncontrolled hot works being conducted close to areas like deep pits, confined spaces, unventilated areas or subterranean areas. https://www.hse.gov.uk/simple-health-safety/risk/index.htm,

Lower Explosive Limit (LEL): 1.5 %	**Upper Explosive Limit (UEL):** 7.8 %
Flash Point: Above +57 ° F a risk severe explosion hazard when exposed to ignition	**Boiling Point:** + 97°F - Above this it changes from a liquid into a gas

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Description

Expanded Polystyrene containing residual amounts of expanded agent Pentane.
Euroclass E products also contain a Polymerised Flame Retardant.

Dangerous Components/Constituents

Component Name	CAS Number	EINECS	Content	Hazard
Pentane	109-66-0	203-692-4	< 1% wt	H220
Isopentane	78-78-4	201-142-8		

SECTION 4: FIRST AID MEASURES

Inhalation	Only dust produced from machining EPS or small particles are likely to be inhaled. Clear the respiratory tract. If recovery does not occur obtain medical attention.
Skin	No specific measures
Eye	Flush EPS particles from the eye with water. If rapid recovery does not occur obtain medical attention.
Ingestion	No specific measures. If significant quantities are swallowed seek medical advice.

FIRE:

Inhalation of smoke or fumes	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.
Skin Contact	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.

SECTION 5: FIREFIGHTING MEASURES

Specific Hazards	Hazardous combustion products may include carbon monoxide and carbon dioxide.
Extinguishing Media	Foam, water spray or fog. Dry chemical powder or carbon dioxide.

SECTION 6: ACCIDENTAL RELEASE MEASURES

The product is in solid form and releases no harmful substances.

Personal Protection	No specific measures
Clean up Methods	Dispose of in accordance with section 13

SECTION 7: HANDLING AND STORAGE

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. Stack boards flat without bearers. Storage should be in a level situation at ground level. Protect from direct sunlight, if exposure is likely to exceed one week.

EPS stockpiles should be sited so that in the event of a fire, flowing or dripping molten material will not cause the spread of fire to other combustible materials or to other areas of a building, in particular staircases and corridors.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

No specific protection is required for the handling of EPS.

Occupational Exposure Standards

During raw material production the expansion agent Isopentane and or Pentane are added to the product, and during decomposition of EPS, there may be off gassing of Pentane and Styrene Monomer. The WEL limits for the expansion agent and for the hazardous decomposition products are:

Source: https://www.hse.gov.uk/pubns/books/eh40.htm

Substance	CAS Number	Workplace Exposure limit			
		Long term exposure limit (8hr TWA reference period)		Long term exposure limit (15 min TWA reference period)	
		ppm	mg.m-3	ppm	mg.m-3
Isopentane	78-78-4	600	1800	-	-
Pentane	109-66-0	600	1800		
Styrene	100-42-5	100	420	250	1080

TWA = Time Weighted Average

The Workplace Exposure Limit (WEL) for total inhalable dust is 10 mg/m^3 (milligrams per cubic meter) as a time-weighted average over an eight-hour period. This limit is defined in the Control of Substances Hazardous to Health (COSHH) regulations and exceeding it can be a breach of COSHH regulations.

Inhalable dust: refers to dust particles that are small enough to be inhaled into the nose and mouth and can be deposited in the respiratory tract. The WEL of 10 mg/m^3 is a legal limit in the UK.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Physical state	Cellular Foam	Softening Point 95-100°C
Form	Moulded shapes or sheets	Ignition temperature in air 350°C
Colour	White (Heaveguard is coloured green)	
Density	Ranges from 10kg/m^3 to 60kg/m^3	
Soluble in water	Not Soluble	
Solubility on other solvents	Soluble in aromatic, halogenated solvent and ketones	

SECTION 10: STABILITY/REACTIVITY

Stability	Stable under normal conditions. Decomposes above 200°C
Conditions to avoid	Heat flames and sparks. Strong sunlight for prolonged periods
Hazardous decomposition products	Styrene Monomer and Carbon Monoxide when burned.

SECTION 11: TOXICOLOGICAL INFORMATION

Expanded polystyrene is non toxic and is not irritating to the skin or eyes.

SECTION 12: ECOLOGICAL INFORMATION

The products are not biodegradable, non toxic but small particles may have physical effects on aquatic and terrestrial organisms.

All products have zero Ozone Depleting Potential (ODP) and virtually zero Global Warming Potential (GWP). Products may contain some residual Pentane that has a very low Global Warming Potential of <0.00044.

SECTION 13: DISPOSAL CONSIDERATIONS

Waste Disposal

Recover or recycle if possible. Scrap expanded polystyrene is not classified as “Notifiable Waste” and may be disposed of at suitable land-fill tips or by incineration under approved conditions. Advice on the preferred method should be obtained at all times.

SECTION 14: TRANSPORT INFORMATION	
UN Number	-

SECTION 15: REGULATORY INFORMATION	
EC Label name	Expanded Polystyrene
EUH018	In use, may form flammable/explosive vapour-air mixture
P210	Keep away from heat/sparks/open flames/hot surfaces. No Smoking

SECTION 16: OTHER INFORMATION

Uses and Restriction

A wide range of unique products that deliver innovative solutions for the construction industry along with the marine, leisure, display, and film industries (see www.cordek.com).

This document contains important information to ensure 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.

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