

1. Product and Company Identification

1.1. Product Identification

Product name	Polystyrene board
Product material	Closed-cell, extruded polystyrene
Product type	

RAVATHERM™ XPS 300 WB
RAVATHERM XPS 300 STG
RAVATHERM XPS 300 SL
RAVATHERM XPS 500 SL
RAVATHERM XPS 700 SL

1.2. Material/Product Application Insulation Material

1.3. Manufacturer and Supplier Identification

Name	RAVATHERM Hungary Kft.
Address	4. Almádi Street, Balatonfűzfő 8184
Telephone	+ 36 88 59 69 79
Fax	+ 36 88 45 01 25
E-mail	info@ravatherm.com

2. Hazards Identification

2.1. Hazards of product

This product is as defined by REACH regulation not a hazardous chemical

Safety advice Warning materials H and EUH phrases
H242 Heating may cause a fire.

Precautionary P phrases

P201 Do not handle until all safety precautions have been read and understood
P261 Avoid breathing dust/fume/gas/mist/vapours/spray

2.2. Labelling **Based on 1272/2008/EC of the European Parliament and of the Council, the product contains no hazardous ingredients.**

2.3. Other hazards **The product has no other known health or environmental effects.**

3. Composition Information

Component		CAS number	conc., %	Molecular formula
Polystyrene	Poly-(1-phenylethylene)	9003-53-6	>96,5	(C ₈ H ₈) _x
PolyFR	Benzene, ethenyl-, polymer with 1,3-butadiene, brominated	1195978-93-8	0,5<x<2,0	(C ₈ H ₉) _x (C ₄ H ₆ Br ₂) _y (C ₄ H ₆ Br ₂) _z (C ₈ H ₉) _x
Dikumyl	2,3-Dimethyl-2,3-diphenylbutane	1889-67-4	0,1<x<0,35	C ₁₈ H ₂₂

Flame components	reterdant	PolyFR	Benzene, ethenyl-, polymer with 1,3-butadiene, brominated
		Dikumyl	2,3-Dimethyl-2,3-diphenylbutane

The product is made of styrene with colouring and flame retardant material and propellant using extrusion. Flame retardant material is

The elemental composition of the productelem

Element	Chemical symbol	Weight ratio, w/w%
Carbon	C	>90,0
Hydrogen	H	>7,4
Bromine	Br	0,3<x<1,3

The product does not contain other elements.

4. First-aid measures

The product is packaged in boards. Mechanical cutting can cause formation of dusts.

4.1. First-aid

Skin contact	Does not irritate skin, small parts can be removed from skin easily. Does not require special treatment.
Eye contact	Small part of the product or dust from the product as mechanical contamination can irritate eyes. It can be removed by flushing eyes thoroughly with water for 1-2 minutes. Remove contact lenses after the initial 1-2 minutes and continue flushing for several additional minutes. If effects occur, consult an oculist.
Ingestion	No significant health hazards identified. Does not require special treatment.
Inhalation	Move person from the location of the accident. Flush the person's mouth and throat and clean the person's nose from dust.

5. Fire Fighting Measures

Classification of Fire Protection	„E”	Not flammable
Classification of Fire Hazard		Flammable (solid combustible material)

Building material property testing is done, there is no declared performance.

The product decomposes when exposed to heat. The decomposition temperature 250°C. Decomposition of combustible components react chemically with oxygen in the environment. Response to external and the thermal decomposition products from combustion of 500°C the product begins to burn.

The initial temperature of decomposition	250°C
The initial temperature of combustion	500°C

Flame retardant in the product

Brominated polymeric flame retardant in the product for a long time prevent the products of combustion and the fire from spreading.

The product is flame retardant components due to the presence of an ignition source after a delayed burn, fire burns itself does not effect the termination of further self-extinguishing. Smoke varies depending on the oxygen with reality and the ambient temperature.

5.1. Extinguishing Media

Dry chemical fire extinguisher. Carbon dioxide fire extinguisher. Foam. Water spray. Water fog.
The used extinguishing media cannot contaminate the sewage system and surface water flows.

5.2. Special hazard from product/material

Hazardous combustion products: hydrocarbons, lower molecular acids (e.g. acetic acid) in traces hydrogen bromide (irritant), carbon monoxide, carbon dioxide (drug), carbon black.

In case of fire, inhalation of combustion products must be avoided.

5.3. Recommendation for firefighters

While extinguishing the most important is to remove the source of ignition, to reduce the temperature. The combustion products occurs only at high temperatures, so full protective clothing (full firefighting clothing) and external breathing apparatus with independent air supply is required.

6. Accidental Release Measures

6.1. Personal precautions There are no special required instructions.

6.2. Environmental precautions There are no special required instructions.

6.3. Containment and decontamination methods and materials

Special provisions, delimitation are not required, parts in the environment need to be collected, contaminated, no more usable parts need to be collected and stored as non-hazardous waste, possibly utilized as material. Non-contaminated and decontaminated products can be used.

7. Handling and Storage

The product contains flame retardant additive, which prevents accidental ignition by small ignition sources.

7.1. Precautions for safe handling

No special treatment is needed in case of professional usage.
Mechanical cutting, grinding or sawing can cause formation of dusts.

Chafing, electrostatic fill needs to be avoided because of sparks.

Product is dissolved in organic solvents, therefore glues used need to be organic solvent.

Keep away from open flames and heat.

7.2. Conditions for safe storage, including any incompatibilities

Professional transportation, storage and use of the product does not require special treatment.

When storing direct contact with organic solvents, acids need to be avoided, must not be exposed to flame or other heat source.

8. Exposure Controls / Personal Protection

8.1. Exposure Limits

Exposure Limits	Not established in Europe
Exposure Restriction	No special treatment

8.2. Exposure Control

Personal protection against dust.

Inhalation, respiratory protection With appropriate respiratory protective equipment dust inhalation needs to be avoided.

Skin protection No special protection needed.

Hand protection Use gloves to protect from mechanical injury.

Eye protection No special protection needed, in case of dust formation safety glasses need to be used.

Ingestion No special protection needed.

9. Physical and Chemical Properties

9.1. Information for basic physical and chemical properties

Physical State	solid
Colour	blue
Odor	odorless
Softening temperature	85 °C
Melting-point	240°C
Flaming temperature	345-360°C
Auto-ignition temperature	491 °C
Density	20-70 kg/m ³
Relative density (H ₂ O = 1)	1,04-1,13
Moisture absorption	0,2-1,0 m/m%

10. Stability and Reactivity

10.1. Reactivity	Resistant to acid, alkali. Solvent in most of organic solvents.
10.2. Chemical stability	Product is stable, does not decompose.
10.3. Possible hazardous reactions	Product used as insulation material no hazardous reaction occurs.
10.4. Situations to avoid	Direct exposure to sunlight should be avoided.
10.5. Incompatible Materials	Organic solvents, aldehydes, amines, esters.
10.6. Hazardous Decomposition	Normally product does not decompose. Product exposed to burning fire effects forms polymer chain fragments, aromatic compounds, small molecular weight hydrocarbons, carbon monoxide, carbon dioxide, carbon (soot) traces of hydrogen-bromide.

11. Toxicological Information

11.1. Information about toxicological effects

Skin contact	Does not irritate skin, small mechanical chafing can occur.
Eye contact	In form of dust it can irritate the eye, small amount of smoke generated via thermal cutting can cause irritation.
Inhalation	In form of dust it can irritate the upper respiratory, small amount of smoke generated via thermal cutting can cause irritation.
Ingestion	Accidental ingestion has no harmful effect on health.

12. Ecological Information

12.1. Toxicity	The product is biologically not accumulative. The product does not contain hazardous substances to the environment. The flame retardants remain in the product, do not change under normal circumstances, they are not released into the environment.
12.2. Persistence and Degradability	No appreciable biodegradation does not occur.
12.3. Bioaccumulation Capacity	The product is not bio-accumulate.
12.4. Mobility in soil	The product is solid, inert material, no mobility with moisture.
12.5. Results of PBT and vPvB assessment	The product contains no PBT and vPvB.

13. Disposal Considerations

Waste treatment methods

Recyclable on material Selectively: XPS containing flame retardant

Energy recovery Only limited incineration plant with flue gas cleaning equipment.

Separate collection

- Wastes from shaping and surface treatment of metals and plastics

EWC	Type os waste
12 01 03	Non-ferrous metal filings and turnings
12 01 04	Other non-ferrous metal particles
12 01 05	Plastics particles
- Construction and demolition wastes (including road construction)

EWC	Type os waste
17 02 03	Plastic
- Municipal wastes and similar commercial, industrial and institutional wastes including separately collected fractions

EWC	Type os waste
20 01 39	Plastics

14. Transport Information

14.1. UN-number	no
14.2. Labelling according to UN	no
14.3. Classification of dangerous transportation	no
14.4. Packaging class	no
14.5. Danger to the environment	no
14.6. Special precaution for users	no
14.7. Bulk transportation according to MARPOL 73/78 II. Appendix and IBC code	no

15. Regulatory Information

15.1. Safety, health and environmental regulations / legislation

EU directives and labelling classification not hazardous product

REACH regulation

Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC

CLP regulation

Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006

15.2. Chemical safety assessment (CSA)

Hazard assessment not hazardous product

16. Other information

Information on this safety data sheet concerns to the transported product. It is the buyer's/user's duty to determine the conditions necessary for the safe use of this product.