

Material Safety Data Sheet (MSDS)

Water Board (4 pages) + (2 pages)

Material Safety Data Sheet (Brief)

Trade Name: Water Board.

Chemical Formula: Not applicable.

Special Protection Information	Special Instruction
<p>Respiratory Protection: Masks when cutting or drilling boards.</p> <p>Protection of hand: Gloves</p> <p>Eye protection: Goggles/Glasses when cutting or drilling boards.</p>	<p>Handling and Storing: Keep exposure to dust as low as reasonably possible.</p> <p>Spill and Leak Procedures: If broken likely to generate dust. It should be carried out in well ventilated areas. Spray water on dust before sweep or use vacuum cleaner.</p> <p>Disposal Methods: Dispose of material as inert, non-metallic mineral in conformance with local regulations.</p>
<p>First Aids</p> <p>Skin contact: Wash with mild soap and water. Seek medical attention if irritation persists.</p> <p>Eye contact: Remove contact lens. Flush with running water for at least 15 minutes. Seek medical attention if irritation persists.</p> <p>Inhalation: Remove to fresh air. If shortness of breath, seek medical attention.</p>	<p>Extinguishing Media: This material is not combustible. Appropriate extinguishing media for surrounding fire should be used.</p>

1. Product Data	
1.1 Trade Name	Water Board
- Chemical Name	Fiber-cement, Fiber-reinforced cement
- Chemical Formula	Not applicable

2. Chemical Classification	
2.1 U.N. Number	Not applicable
2.2 Cas. Number	Not applicable
2.3 Carcinogen	Non asbestos

3. Hazardous Ingredients			
Substances	Percent (%)	Safety Standard	
		TLV	LD ₅₀
Crystalline Silica(Quartz) (CAS Number:14808-60-7)	15-50%	-	-

4. Physical and Chemical Data	
4.1 Boiling Point (°C)	Not applicable
4.2 Melting Point (°C)	Not applicable
4.3 Vapour Pressure (KPa)	Not applicable
4.4 Solubility in water	Not applicable

4.5 Specific gravity (H ₂ O=1)	Not applicable
4.6 Evaporation rate	Not applicable
4.7 Appearance color and odor	Solid board with coating color
4.8 pH-Value	Not applicable

5. Fire and Explosion Hazard Data

5.1 Flash point (°C)	Not Ignition	
5.2 Exposure Limit	LEL (%)	Not applicable
	UEL (%)	Not applicable
5.3 Auto ignition temperature (°C)	Not applicable	
5.4 Chemical Reactivity	Stable, No dangerous reaction	
5.5 Materials to avoid	Not applicable	
5.6 Decomposition temperature	Not applicable	

6. Health Hazard Data

6.1 Ways of exposure	Inhaled, Skin, Swallowed
6.2 Local Effects skin, eyes, Mucous Membrane	Irritation when cutting or drilling boards
6.3 Effects of over exposure short-term	Not applicable
6.4 Effects of over exposure long-term	Not applicable
6.5 TLV-TWA	Crystalline Silica (Quartz) < 0.025 mg/m ³ Respirable dust < 10 mg/m ³ with cyclone

7.1 Special Protection Information

7.1. Extinguishing & Explosion	Not combustible & not explosion
7.1.2 Ventilation	Not applicable
7.1.3 Respiratory Protection	Masks when cutting or drilling boards
7.1.4 Protection of hand	Gloves
7.1.5 Eye protection	Goggles/Glasses when cutting or drilling boards
7.1.6 Other protection	Not applicable

7.2 First Aids

7.2 First Aids	
7.2.1 Skin contact	Wash with mild soap and water. Seek medical attention if irritation persists.

7.2.2 Eye contact	Remove contact lens. Flush with running water for at least 15 minutes. Seek medical attention if irritation persists.
7.2.3 Inhalation	Remove to fresh air. If shortness of breath, seek medical attention.
7.2.4 Ingestion	Do not induce vomiting. Dilute by drinking large amounts of water. Seek medical attention.

8. Special Instruction	
8.1 Handling and Storing	Keep exposure to dust as low as reasonably possible.
8.2 Corrosiveness	Not applicable
8.3 Spill and Leak Procedures	If broken likely to generate dust should be carried out in well ventilated areas. Spray water on dust before sweep or use vacuum cleaner.
8.4 Disposal Methods	Dispose of material as inert, non-metallic mineral in conformance with local regulations.
8.5 Extinguishing Media	This material is not combustible. Appropriate extinguishing media for surrounding fire should be used.

EPS Technical Information

Calorific Value	40MJ / Kg
Specific Heat Capacity	1.13 kJ /kg° C

Although EPS has significant resistance to the passage of water vapour, it should not be regarded as a damp-proof membrane or vapour control layer and will not provide a barrier against damp penetration. If EPS is covered in between Water Boards, it will be protected from moisture, air and corrosion. The higher density range is particularly used in civil engineering.

TYPICAL PHYSICAL PROPERTIES

	<u>10 kg/m</u>	<u>15 kg/m³</u>	<u>20 kg/m³</u>	<u>30 kg/m³</u>	<u>40 kg/m³</u>
Compressive stress (10%) (kPa)	35	75	115	200	300
Bending strength (kPa)	100	170	240	390	560
Heat conductivity (λ_{10}) (W/mK)	0.045	0.038	0.035	0.033	0.032

Recycling

Expanded Polystyrene is suitable for recycling using modern methods of grinding, cleaning and re-granulating. In-house production waste should be kept clean to facilitate direct recycling.

Fire rating

Complies with DIN 4102 B1 (German) and EN 13501-1 class E (EU)

Applications

This EPS is suitable for light insulation board and impact sound-insulation board in accordance with DIN 4102 part 1, class B1 (test certificate Z-PA-III 2.2575)

Long term heat resistance max. temperature 85°C.

EPS can be used within the temperature range – 150 to +80° C

Biological Properties

EPS will not sustain mould growth and has no nutrient value to insects or vermin. The material is non-biodegradable and care should be taken to dispose of waste and offcuts at licensed waste site.

Thermal Properties

Thermal Movement

Coefficient of linear expansion $0.6 \times 10^{-6}/^{\circ}\text{C}$

The material is sufficiently resilient and flexible that no allowance need be made for thermal expansion in method of insulation.

Compatibility With Other Materials

EPS is soluble in aromatic halogenated solvents and ketones: it should be protected from contact with hydrocarbons and strong solvents using a suitable protection such as Water Boards which is an adequate membrane. EPS should not be permitted to come in contact with PVC sheathed electrical cable since this will lead to migration of plasticizer from the PVC resulting in embrittlement of the cable sheath. Cables should be protected by the use of a physical barrier for example by being enclosed in a conduit or by an air gap.

Health and Safety and Environment

EPS is non-toxic and biologically inert. It is not irritating to the eyes or skin and no medical treatment or action is required as a result of accidental ingestion. No Special precautions are required during handling and cutting where carried out in a well ventilated area. The volume of EPS boards is 98% air : consequently the components in a given volume are typically 15-20 kg/m³. The expanding agent, pentane is a saturated hydrocarbon and is non-toxic and constitutes no threat to the ozone layer. Smoking should be prohibited in the storage and work areas.
