



Safety Data Sheet

DOW CHEMICAL COMPANY LIMITED
Safety Data Sheet according to Reg. (EC) N. 453/2010

Product Name: STYROFOAM™ LB H-XP Extruded Polystyrene Foam

Revision Date: 24.04.2015

Print Date: 11 Jun 2015

DOW CHEMICAL COMPANY LIMITED encourages and expects you to read and understand the entire (M)SDS, as there is important information throughout the document. We expect you to follow the precautions identified in this document unless your use conditions would necessitate other appropriate methods or actions.

Section 1. Identification of the substance/preparation and of the company/undertaking

1.1 Product identifiers

Product Name

STYROFOAM™ LB H-XP Extruded Polystyrene Foam

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

Identified uses

Thermal insulation.

1.3 Details of the supplier of the safety data sheet

COMPANY IDENTIFICATION

DOW CHEMICAL COMPANY LIMITED
DIAMOND HOUSE, LOTUS PARK,
KINGSBURY CRESCENT,
STAINES
England
TW18 3AG
UNITED KINGDOM

Customer Information Number:

+44 (0) 203 139 4000

SDSQuestion@dow.com

1.4 EMERGENCY TELEPHONE NUMBER

24-Hour Emergency Contact:

0031 115 694 982

Local Emergency Contact:

00 31 115 69 4982

Section 2. Hazards Identification

2.1 Classification of the substance or mixture

Classification according to EU Directives 67/548/EEC or 1999/45/EC

This product is not classified as dangerous according to EC criteria.

2.2 Label elements

Labelling according to EC Directives

This product is not classified as dangerous according to EC criteria.

2.3 Other Hazards

No information available.

Section 3. Composition/information on ingredients

3.2 Mixture

This product is a mixture.

CAS-No. / EC-No. / REACH No. Index	Amount	Component	Classification: REGULATION (EC) No 1272/2008
CAS-No. 811-97-2 EC-No. 212-377-0	— < 5.0 %	1,1,1,2-Tetrafluoroethane #	Not classified
CAS-No. 64-17-5 EC-No. 200-578-6 Index 603-002-00-5	— < 3.0 %	Ethanol; ethyl alcohol	Flam. Liq., 2, H225 Eye cor/irr, 2, H319

CAS-No. / EC-No. / Index	Amount	Component	Classification: 67/548/EEC
CAS-No. 811-97-2 EC-No. 212-377-0	< 5.0 %	1,1,1,2-Tetrafluoroethane#	Not classified.
CAS-No. 64-17-5 EC-No. 200-578-6 Index 603-002-00-5	< 3.0 %	Ethanol; ethyl alcohol	F: R11; Xi: R36

Substance(s) with an Occupational Exposure Limit.

For the full text of the H-Statements mentioned in this Section, see Section 16.

See Section 16 for full text of R-phrases.

Extruded polystyrene foam

Section 4. First-aid measures

4.1 Description of first aid measures

General advice: If potential for exposure exists refer to Section 8 for specific personal protective equipment.

Inhalation: Move person to fresh air; if effects occur, consult a physician.

Skin Contact: Seek first aid or medical attention as needed.

Eye Contact: Flush eyes thoroughly with water for several minutes. Remove contact lenses after the initial 1-2 minutes and continue flushing for several additional minutes. If effects occur, consult a physician, preferably an ophthalmologist.

Ingestion: No emergency medical treatment necessary.

4.2 Most important symptoms and effects, both acute and delayed

Aside from the information found under Description of first aid measures (above) and Indication of immediate medical attention and special treatment needed (below), any additional important symptoms and effects are described in Section 11: Toxicology Information.

4.3 Indication of immediate medical attention and special treatment needed

No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

Section 5. Fire Fighting Measures

5.1 Extinguishing Media

Water fog or fine spray. Dry chemical fire extinguishers. Carbon dioxide fire extinguishers. Foam.

5.2 Special hazards arising from the substance or mixture

Hazardous Combustion Products: During a fire, smoke may contain the original material in addition to combustion products of varying composition which may be toxic and/or irritating. In smoldering or flaming conditions, carbon monoxide, carbon dioxide and carbon are generated. Combustion products may include and are not limited to: Hydrogen fluoride. Based on combustion toxicity testing, the effects of combustion from this foam are not more acutely toxic than the effects of combustion from common building materials such as wood.

Unusual Fire and Explosion Hazards: Container may vent and/or rupture due to fire. When product is stored in closed containers, a flammable atmosphere can develop. Mechanical cutting, grinding or sawing can cause formation of dusts. To reduce the potential for dust explosion, do not permit dust to accumulate. Dense smoke is produced when product burns.

5.3 Advice for firefighters

Fire Fighting Procedures: Keep people away. Isolate fire and deny unnecessary entry. Soak thoroughly with water to cool and prevent re-ignition. If material is molten, do not apply direct water stream. Use fine water spray or foam. Cool surroundings with water to localize fire zone.

Special Protective Equipment for Firefighters: Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, trousers, boots, and gloves). If protective equipment is not available or not used, fight fire from a protected location or safe distance.

Section 6. Accidental Release Measures

6.1 Personal precautions, protective equipment and emergency procedures: There are no special required instructions.

6.2 Environmental precautions: There are no special required instructions.

6.3 Methods and materials for containment and cleaning up: Recover spilled material if possible. See Section 13, Disposal Considerations, for additional information.

Section 7. Handling and Storage

7.1 Precautions for safe handling **Handling**

General Handling: Fabrication methods which involve cutting into this product may release the blowing agent(s) remaining in the cells. Provide adequate ventilation to assure localized concentrations in release areas are maintained below the lower flammable limit. Mechanical cutting, grinding or sawing can cause formation of dusts. To reduce the potential for dust explosion, do not permit dust to accumulate. This product is combustible and may constitute a fire hazard if improperly used or installed. When installed, this product should be adequately protected as directed by national building regulations or instructions in the specific application brochure.

7.2 Conditions for safe storage, including any incompatibilities

Storage

During shipment, storage, installation and use, this material should not be exposed to flame or other ignition sources. In order to prevent buildup of combustible vapors, do not store large quantities of this product in unventilated spaces. Transport bulk shipments of this product in ventilated vehicles. Gas fired recirculating air furnaces or heaters, gas heaters, etc., drawing air from areas where there may be a presence of the blowing agents emitted from this foam during storage or fabrication, can be subject to rust and corrosion problems as a result of thermal decomposition of the blowing agents to hydrogen fluoride.

7.3 Specific end uses

See the technical data sheet on this product for further information.

Section 8. Exposure Controls / Personal Protection

8.1 Control parameters

Exposure Limits

Component	List	Type	Value
1,1,1,2-Tetrafluoroethane	AIHA WEEL	TWA	4,240 mg/m ³ 1,000 ppm
	UK WEL	TWA	4,240 mg/m ³ 1,000 ppm
Ethanol; ethyl alcohol	Ireland OELV	TWA	1,900 mg/m ³ 1,000 ppm
	UK WEL	TWA	1,920 mg/m ³ 1,000 ppm
	ACGIH	STEL	1,000 ppm

Concentrations of the blowing agents anticipated incidental to proper handling are expected to be well below those which cause acute inhalation effects and below exposure guidelines.

8.2 Exposure controls

Personal Protection

Eye/Face Protection: Eye protection should not be necessary. For fabrication operations safety glasses (with side shields) are recommended. Safety glasses (with side shields) should be consistent with EN 166 or equivalent. If there is a potential for exposure to particles which could cause eye discomfort, wear chemical goggles. Chemical goggles should be consistent with EN 166 or equivalent.

Skin Protection: No precautions other than clean body-covering clothing should be needed.

Hand protection: Use gloves to protect from mechanical injury. Selection of gloves will depend on the task.

Respiratory Protection: Respiratory protection should be worn when there is a potential to exceed the exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, wear respiratory protection when adverse effects, such as respiratory irritation or discomfort have been experienced, or where indicated by your risk assessment process. In dusty or misty atmospheres, use an approved particulate respirator. When respiratory protection is required for certain operations, including but not limited to saw, router or hot-wire cutting, use an approved air-purifying respirator. Use the following CE approved air-purifying respirator: Organic vapor cartridge with a particulate pre-filter, type AP2.

Ingestion: No precautions necessary due to the physical properties of the material.

Engineering Controls

Ventilation: Use local exhaust ventilation, or other engineering controls to maintain airborne levels below exposure limit requirements or guidelines. If there are no applicable exposure limit

requirements or guidelines, general ventilation should be sufficient for most operations. Local exhaust ventilation may be necessary for some operations.

Section 9. Physical and Chemical Properties

9.1 Information on basic physical and chemical properties

Appearance

Physical State	Foam
Color	Blue
Odor	Odorless
Odor Threshold	Odorless
pH	Not applicable
Melting Point	> 75 °C <i>Literature</i>
Freezing Point	Not applicable
Boiling Point (760 mmHg)	Not applicable.
Flash Point - Closed Cup	346 °C <i>Literature</i>
Evaporation Rate (Butyl Acetate = 1)	Not applicable
Flammability (solid, gas)	No
Flammable Limits In Air	Lower: 3.5 %(V) <i>Literature</i> Ethanol. Upper: Not applicable
Vapor Pressure	Not applicable
Vapor Density (air = 1)	Not applicable
Specific Gravity (H ₂ O = 1)	Not applicable
Solubility in water (by weight)	not soluble
Partition coefficient, n-octanol/water (log Pow)	No data available for this product.
Autoignition Temperature	491 °C <i>Literature</i>
Decomposition Temperature	430 - 600 °C <i>Literature</i>
Kinematic Viscosity	Not applicable
Explosive properties	No
Oxidizing properties	No

9.2 Other information

Solid Density	20 - 70 kg/m ³ <i>Literature</i>
Molecular Weight	Not applicable

Section 10. Stability and Reactivity

10.1 Reactivity

No dangerous reaction known under conditions of normal use.

10.2 Chemical stability

Thermally stable at typical use temperatures.

10.3 Possibility of hazardous reactions

Polymerization will not occur.

10.4 Conditions to Avoid: Avoid temperatures above 300°C (572°F) Exposure to elevated temperatures can cause product to decompose. Avoid direct sunlight.

10.5 Incompatible Materials: Avoid contact with oxidizing materials. Avoid contact with: Aldehydes. Amines. Esters. Liquid fuels. Organic solvents.

10.6 Hazardous decomposition products

Does not normally decompose. Decomposition products depend upon temperature, air supply and the presence of other materials. Decomposition products can include and are not limited to: Aromatic

compounds. Aldehydes. Hydrogen halides. Polymer fragments. Under high heat, non-flaming conditions, small amounts of aromatic hydrocarbons such as styrene and ethylbenzene are generated.

Section 11. Toxicological Information

11.1 Information on toxicological effects

Acute Toxicity

Ingestion

Swallowing is unlikely because of the physical state. Very low toxicity if swallowed. Harmful effects not anticipated from swallowing small amounts.

As product: Single dose oral LD50 has not been determined.

Aspiration hazard

Based on physical properties, not likely to be an aspiration hazard.

Dermal

Skin absorption is unlikely due to physical properties.

As product: The dermal LD50 has not been determined.

Inhalation

Dust may cause irritation to upper respiratory tract (nose and throat). Fumes/vapors released during thermal operations such as hot wire cutting may cause respiratory irritation. Based on the available data, narcotic effects were not observed.

As product: The LC50 has not been determined.

Eye damage/eye irritation

Solid or dust may cause irritation due to mechanical action. Fumes/vapor released during thermal operations such as hot-wire cutting may cause eye irritation.

Skin corrosion/irritation

Essentially nonirritating to skin. Mechanical injury only.

Sensitization

Skin

No relevant data found.

Respiratory

No relevant data found.

Repeated Dose Toxicity

Based on available data, repeated exposures are not anticipated to cause significant adverse effects.

Chronic Toxicity and Carcinogenicity

No relevant data found.

Developmental Toxicity

No relevant data found.

Reproductive Toxicity

No relevant data found.

Genetic Toxicology

No relevant data found.

Component Toxicology - Ethanol

Skin Absorption	LD50, rabbit > 4,000 mg/kg
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Component Toxicology - 1,1,1,2-Tetrafluoroethane

Inhalation	LC50, 4 h, rat > 500,000 ppm
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Component Toxicology - Ethanol

Inhalation	LC50, 4 h, Vapor, rat 124.7 mg/l
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Component Toxicology - Ethanol

Ingestion	LD50, rat > 7,000 mg/kg
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Section 12. Ecological Information

12.1 Toxicity

Not expected to be acutely toxic to aquatic organisms.

12.2 Persistence and Degradability

Surface photodegradation is expected with exposure to sunlight. No appreciable biodegradation is expected.

12.3 Bioaccumulative potential

Bioaccumulation: No bioconcentration is expected because of the relatively high molecular weight (MW greater than 1000).

12.4 Mobility in soil

Mobility in soil: In the terrestrial environment, material is expected to remain in the soil.

12.5 Results of PBT and vPvB assessment

This mixture has not been assessed for persistence, bioaccumulation and toxicity (PBT).

12.6 Other adverse effects

Product contains no ozone-depleting components.

Section 13. Disposal Considerations

13.1 Waste treatment methods

All efforts to recycle material should be made. This material may be disposed of preferably by incineration under approved conditions or, in some countries, in approved landfills. Customers are advised to check their local legislation governing the disposal of waste materials. If incinerated, it is recommended that the flue gases be treated by a scrubber before exhausting to the atmosphere.

Section 14. Transport Information

ADR/RID

14.1 UN number

Not applicable

14.2 UN proper shipping name

Proper Shipping Name: NOT REGULATED

14.3 Transport hazard class(es)

Not applicable

14.4 Packing Group

Not applicable

14.5 Environmental hazards

Not considered environmentally hazardous based on available data

14.6 Special precautions for user

Special Provisions: no data available

Hazard identification No: no data available

ADNR / ADN

14.1 UN number

Not applicable

14.2 UN proper shipping name

Proper Shipping Name: NOT REGULATED

14.3 Transport hazard class(es)

Not applicable

14.4 Packing Group

Not applicable

14.5 Environmental hazards

Not considered environmentally hazardous based on available data

14.6 Special precautions for user

no data available

IMDG

14.1 UN number

Not applicable

14.2 UN proper shipping name

Proper Shipping Name: NOT REGULATED

14.3 Transport hazard class(es)

Not applicable

14.4 Packing Group

Not applicable

14.5 Environmental hazards

Not considered environmentally hazardous based on available data

14.6 Special precautions for user

EMS Number: Not applicable

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

ICAO/IATA

14.1 UN number

Not applicable

14.2 UN proper shipping name

Proper Shipping Name: NOT REGULATED

14.3 Transport hazard class(es)

Not applicable

14.4 Packing Group

Not applicable

14.5 Environmental hazards

Not considered environmentally hazardous based on available data

14.6 Special precautions for user

no data available

Section 15. Regulatory Information

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

European Inventory of Existing Commercial Chemical Substances (EINECS)

The components of this product are on the EINECS inventory or are exempt from inventory requirements.

15.2 Chemical Safety Assessment

Not applicable.

Section 16. Other Information

Hazard statement in the composition section

H225 Highly flammable liquid and vapour.
H319 Causes serious eye irritation.

Risk-phrases in the Composition section

R11 Highly flammable.
R36 Irritating to eyes.

Revision

Identification Number: 1073196 / A279 / Issue Date 24.04.2015 / Version: 1.0

Most recent revision(s) are noted by the bold, double bars in left-hand margin throughout this document.

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