Material Information Data Sheet

Polyurethane – Flotation Foam

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Material:	Flotation Foam
Description of polymer type:	Low density rigid polyurethane foam
Manufacturer:	Ascorium GmbH
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Flotation foam is not considered to be a hazardous product nor as mixtures of dangerous substances. It is identified as industrial polymers
According to EU Regulation 1907/2006EC (REACH) Polyurethane elastomers are defined as “articles”.

A. Material Identification

Material name:	Low density rigid PUR
Trade names:	Flotation Foam
Composition:	Polyurethane
Chemical description:	Poly-addition product of isocyanates and polyetherpolyol, controlled by catalysts, stabilizers and other substances, resulting in a ultra-light PUR material.

Ascorium Flotation Foam is designed to assure flotation, insulation, and soundproof of a boat. This 2-component, quick cure polyurethane system is formulated to fill a cavity with good reactivity and curing profile. The Flotation Foam has low water absorption, good bonding to various substrates and contains no-ozone depleting chemicals or HFCs.

Regulatory Information :

No labeling is currently required for this product by existing EU Regulation on Classification, Packaging and Labeling of Dangerous substances and mixtures (1272/2008/EC) identical with the requirements of the Globally Harmonised System of Classification and Labeling of Chemicals.

B. Physical properties

Physical form/appearance : Closed cell low density rigid PUR

Flash ignition temperature : Between 315°C to 370°C

Decomposition temperature : Above 180°C

Thermal energy : 28 000 KJ/kg

Stability and reactivity : The product is stable at temperatures between - 40°C and +120°C

Property	Method	Unit	Value
Density	ASTM D1622	kg/m^3 lb/ft^3	27.5 – 28.9 1,72 – 1.80
Compressive strength	ASTM D 1621	MPa (max stress at 10 % strain) psi	0.137 – 0.193 20 - 28
Water absorption	ASTM D 2842	Lb/ft^2 %	0.042 – 0.056 2.4 – 3.0
Tensile strength/elongation	ASTM D 1623 Type B	N/mm^2 psi %	0.2 – 0.25 29 - 36 49 – 66

Dimensional stability after humid ageing (38 °C/97 % RH)	ASTM D 2126	Change in density (%) Change in volume (%)	-1.15 +/- 0.39 1.20 +/- 0.25
Closed cell Percentage	ASTM D 6226	%	> 95
Buoyancy (for 570 cm^3) at 22,3 °C	UL 1191	N (in fresh water)	4.95 – 5.59
		N (in sea water)	5.10 – 5.86

C. Fire Hazards

Auto-ignition point : (ASTM D 1929) — Between 370°C to 427°C

Fire hazard: The product is a combustible material and causes, when burning, intense heat and dense smoke. In a fire, decomposition products such as carbon black, carbon monoxide, carbon dioxide, gaseous hydrocarbons and nitrogen containing products can be generated in various concentrations depending on the combustion conditions.

Melting point: Not applicable

Suitable fire extinguishers: Water, CO_2, dry powder, liquid foam.

Human protection in large fires: Fire fighters should use self-contained breathing apparatus. Should the burning elastomer come in contact with skin , cool the burned area with water without removing the elastomer. For serious burns call immediately a doctor.

In the event of persons inhaling combustion gases, they must be removed from the area and given swift medical attention.

Further fire information: Terms like “is flame retarded” or “contains flame retardants” are sometimes used to describe improved ignition resistance in small-scale tests and do not reflect hazards in large scale fire conditions.

Storage & Processing: In processing Flotation Foam all prescriptions, directives and technical rules for the lay-out of workstations, machinery safety and workplace human protection should be observed.

No special requirements for storage.

D. Toxicological data

Oral:	There is no evidence that Flotation Foam is toxic in case of ingestion. LD50 (oral-rats) >5000 mg/kg.
Inhalation:	Animal studies indicate that chronic overexposure to polyurethane dust particles could cause lung infection, airway obstruction and fibrosis.
Skin contact:	No adverse effects known following contact with Flotation Foam.
Eye contact:	Dust particles can cause mechanical irritation. Rinse with water to remove dust.
Microbiological contamination :	PU elastomer is sterile when manufactured.

E. Protective measures in handling, storage and processing

Special protective equipment and clothing is not necessary when handling Flotation Foam, since it does not irritate the skin, eyes or respiratory system except in those processes where dust is produced.

Ventilation:	Provided there is adequate general ventilation during processing, no special precautions are necessary for most post handling and cutting operations.
Ventilation during some operations:	Local exhaust ventilation is necessary for some operations i.e. where dust is produced from buffing and crumbing operations or where fumes are produced (e.g. by exposure to heat).
Storage:	Store away from heat sources (match, cigarette, open fire, electrical heater, …). Store in compliance with safety standards established by local authorities and by specific requirements of the insurance companies.

Eye protection:	Protective goggles should be worn for processes, which generate dust.
Protective clothing:	Not required.
Other measures:	No specific measures are needed at all for fully cured Flotation Foam. Gloves should be used when handling fresh polymers.

F. Ecological information

Biodegradability:	Flotation Foam is not degradable or degrades very slowly.
Additional ecological data:	In case of a fire with Flotation Foam, the particles that fall in the water are harmless. They are sieved out of the water and/or disintegrated in the water treatment plant. Living organisms in the water are not endangered.

G. Transport information

Labelling:	Flotation Foam is not classified for conveyance or supply under the International Agreements on Carriage of Dangerous Goods. The product is not classified as hazardous for any mode of transportation under current EU/UN regulations.
Measures:	No special steps need to be taken for the transportation of Flotation Foam.

H. Disposal considerations

Production trim:	Flotation Foam trim and off-cuts can usually be recycled by several methods if uncontaminated by extraneous matter.
Post Consumer Waste:	A recycling option exists via pyrolysis if a series of technical and economical conditions are met. If recycling is not possible, scrap or post consumer PU

	elastomer waste can be disposed of at licensed landfill sites or by incineration under controlled conditions in agreement with EU and National regulatory provisions and following advice from the Local Waste Regulation Authority.
Legislation:	Under EU environmental Regulations and Directives, there are no special requirements for the disposal of conventional PU elastomer.

I. Composition and chemical characterisation

In terms of REACH, Flotation Foam is defined as article.

For the manufacture of Flotation Foam, a series of raw materials are used. These include isocyanates and polyols (major proportion). These ingredients are fully reacted during manufacture and chemically converted into the PU polymer matrix.

In addition, other essential additives of different characteristics are used in small(er) concentrations, some of which could be chemically bonded also to the matrix. No detailed breakdown of the finished PUR in any of these raw materials or additives can be expressed as final percentages as most are reactive and chemically bonded to the PU elastomer matrix or disappear gradually during the curing phase (24h) of the manufacture.

Substances like Hg, Cd, Pb and Cr (VI) are not intentionally added to the formulation.

J. Disclaimer of liability

The local legislation is to be followed.
This information is furnished without warranty, expressed or implied, except that it is accurate according to the best available knowledge of the Flotation Foam manufacturer.
The data on this sheet relate only to the specific material designated herein. The manufacturer assumes no legal responsibility for use of, or reliance upon these data. For information regarding specific applications of the product, the manufacturer should be contacted.