Product Information Data Sheet

Issue date: **September 2015**

Product: **Polyurethane flexible foam**

Description of foam type: **High Resilient PUR foam**

Manufacturer:

Sandella
N-6230 Sykkylven, Norway, Phone:+47 702 45 100

Foam Construction AB
SE-23 351 Svedala, Sweden, Tel: + 46 404 02 065

Polyurethane foams should be considered as “Materials” or “Products”.
They are identified as industrial polymers.
Polyurethane foams are not considered to be hazardous products nor as mixtures of dangerous substances.

A. Product Identification

Product name: HR (High Resilient) PUR foam.
CMHR (Combustion Modified High Resilient). PUR-foam
Moulded Cold Cure Foam.
Viscoelastic CMHR-foam

Composition: Polyurethane polymer.

Chemical description: Poly-addition product of isocyanates, polyether/polyester polyols and water, controlled by catalysts, stabilizers and other substances, resulting in a cellular polyurethane foam.

The isocyanate and polyol are completely reacted during manufacture and foam, as supplied, contains no free isocyanate.

Appearance: Cellular flexible foam.

Regulatory Information:	No labeling is currently required for this product by existing EU Directives on Classification, Packaging and Labeling of Dangerous Substances.

B. Physical properties

Physical form/appearance:	Elastic flexible foam
Colour:	Varies according to manufacture
Specific gravity:	38-120 kg/m³
Solubility in water:	Insoluble
Odour:	None or mild odour
Flash ignition point:	Above 300°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

C. Fire Hazards identification

Auto-ignition point :	Above 350°C
Fire hazard:	The product is a combustible material and causes, when burning, intense heat and dense smoke.

Standard PUR foam meets the requirements in:

ISO 8191-1 og 2 / EN 1021-1 og 2

California Technical Bulletin 117, Section A – Part 1

California Technical Bulletin 117, Section D – Part 2

California Technical Bulletin 117 (2013)

NF P92-504 Class M4

FMVSS No. 302 / CMVSS No. 302

CMHR PUR foam meets the requirements in:

BS 5852: 1998, fire source 5.

UIC 564-2 VE Anlage 8

NF P92-504 Class M4

FMVSS No. 302 / CMVSS No. 302

CMHR PUR viscofoam meets the requirements in

BS 5852: 1998, fire source 5.

Melting point:	The product can, when heated also melt and flammable decomposition products can be generated. 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. Also corrosive gases could be generated if foam grade contains flame retardants.
Suitable fire extinguishers:	Water, CO_2, dry powder, liquid foam.
Human protection in large fires:	Fire fighters should use self-contained breathing apparatus.
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.

D. Toxicological data

Oral:	There is no evidence that PU foam is toxic orally. LD50 (oral-rats) >5000 mg/kg.
Inhalation:	Chronic inhalation of polyurethane dust particles could cause lung infection, airway obstruction and fibrosis.
Skin contact:	No adverse effects known following contact with PU foam.

Eye contact:	Dust particles can cause mechanical irritation. Rinse with water to remove dust.
Microbiological: contamination:	PU foam is sterile when manufactured.

E. <u>Protective measures in handling, storage and processing</u>

PU foam at normal temperature presents no risk to health. Special protective equipment and clothing is not necessary when handling 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, no special precautions are necessary for most 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 flocking operations or where fumes are produced in flame laminating, heat forming and hot wire cutting.
Storage:	Store away from heat sources (match, cigarette, open fire, electrical heater, …). UV rays may cause surface discoloration. This does not affect the foam qualities.
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 PUR foam. Gloves should be used when handling fresh foams.

F. Ecological information

General	Sandella PU foam is CFC free and there is not used Polybrominated Diphenyl Ether (PBDE) flame retardants in the foam. There is not used Polybrominated biphenyls (PBB) in the foam. The foam do not contain heavy metals like Cd, Cr IV, Hg and Pb.
Biodegradability:	Dependent on the type of PU foam, the product is not degradable or degrades slowly.
Additional ecological data:	In case of a fire with standard 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

Labeling:	PU foam is not classified for conveyance or supply under the Carriage of Dangerous Goods (classification, packaging and labelling) and Use of Transportable Pressure Receptacles Regulations 1996. The product is not classified as hazardous for any mode of transportation under current EU/UN regulations by applying the appropriate test method.
Measures:	No special steps need to be taken for the transportation of PU foam.

H. Disposal considerations

Production trim:	Trim polyurethane foam and off-cuts can usually be recycled by several methods if uncontaminated by extraneous matter. There is less off-cuts and waste from Moulded Cold Cure Foam production than block-foam production. A recycling option exists via rebounding if a series of

Post Consumer Waste:	technical and economical conditions are met. If recycling is not possible, scrap or post consumer PU foam waste can be disposed of at licensed landfill sites or by incineration under controlled conditions. Advice on the preferred method should be sought from the Local Waste Regulation Authority.
Legislation:	Under EU environmental Regulations and Directives, there are no special requirements for the disposal of standard foam.

I. Composition and chemical characterisation

Input for external Material Data Systems or PU foam convertors.

Flexible polyurethanes are polymers and defined in Data Systems, i.e. IMDS, as product, not as a chemical compound.

For the manufacture of PU foam, a series of raw materials are used. These include, isocyanates, polyols (major proportion), water (small proportion). These ingredients are fully reactive and chemically bonded to the PU matrix of the polymer. The isocyanates are not biologically available from cured foam.
In addition, other essential additives of different characteristics are used in small concentrations, some of which could be chemically bonded also to the matrix.

Depending on the grade, the PU foam may contain any of the following:

Aliphatic and/or cycloaliphatic amine catalysts
Flame-retardants
Silicone and/or organic surfactants
Organic and/or inorganic pigments.

No detailed breakdown of the finished foam in any of these raw materials or additives can be expressed as final percentages as most are reactive and chemically bonded to the PU foam matrix or disappear gradually during the curing phase (24h) of the manufacture.

Additives, which prohibit the rebounding, recycling route are not present.

The PU foam manufacturer should check and report individually “only” the components that are used in a formulation according to the VDA list of ‘declarable substances’ (IMDS system).

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 PU 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 foam manufacturer should be contacted.