Section 1: Identification of the Substance(s)

Polyether, Polyester, Combustion Modified, Melamine Free, Antistatic, Packaging, Conventional and CMHR Reconstituted Foams, Cold Cure and Moulded Foam.

Section 2: Composition/ Information on Ingredients

Chemical characterisation Expanded Polyurethane Polymer CAS No: N/A

Flexible polyurethane foams are produced by the reaction between a high molecular weight polyol and toluene di-isocyanate (TDI) and/or diphenyl methane di-isocyanate (MDI) in the presence of catalysts, surfactants and blowing agents, resulting in a flexible cellular product having a predominantly open celled structure. Pigments are used to colour the foam.
The final product as supplied, will not contain any residual isocyanate or blowing agent, but may contain traces of catalyst and surfactants.

Some grades of foam contain an additive to assist in resistance to ignition - a flame retardant. Combustion Modified High Resilient (CMHR) foams and Combustion Modified Ether foams contain both melamine and an additive. Block and moulded foams contain both expandable graphite and an additive. These are of low toxicity and will be present in the supplied foam.
Flexible polyurethane foam is supplied in block form, sheets, cut parts, moulded and hand built cushion units.

Section 3: Hazards Identification

Polyurethane foam is used as a cushioning material in the furniture, automotive and aircraft industries, textile and clothing, packaging and acoustic and thermal insulation. In these uses polyurethane foam will not present a health hazard. However, other uses for which the foam has not been recommended, i.e. use at very high temperatures, and may produce risks that have not been anticipated.

Users of polyurethane foam are requested to ensure that the type and grade of foam is entirely suitable for their own purposes. We can provide technical assistance if required. Please note that under the Furniture and Furnishings (Fire) (Safety) (Amendment) Regulations, only CMHR, KCME, and cold cure moulded foams are allowed for use in furniture supplied within the UK. If flexible polyurethane foam is to be used in public places, it is recommended that advice be obtained from the Local Authority and Fire Service as to the necessary standards required.
The basic polyurethane polymer is considered to be of low toxicity and should present no hazard from skin contact or by ingestion.

Some grades of foam contain additives for better fire performance. These will be present in the foam in small amounts, are of low order of toxicity, and present in such amounts that would not be expected to present a hazard by skin contact or ingestion.

CMHR and KCME foams contain melamine, other grades contain expandable graphite. These 1/4 16/08/2011 additives are encapsulated within the foam structure, but can be released as a fine dust during crumbing or buffing. This dust can enter into the body by inhalation and ingestion and may cause irritation to the eyes and respiratory tract (nuisance dust- Occupational Exposure Limit: - 10mg/cu. metre, 8 hr. time weighted average). Expandable graphite has a low oral toxicity, and melamine a very low oral toxicity.

Foam dust, produced by buffing, crumbing etc. will present a nuisance and could cause irritation to the nose and throat if present in high concentrations in the air.

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Section 4: First Aid Measures

Skin contact: If persistent irritation by dust occurs, refer to physician. Treat symptomatically.

Ingestion: Refer to physician. Product is not considered toxic.

Eye contact (dust or solid): Irrigate eye for at least 15 minutes.

Inhalation (dust): Remove to fresh air. Refer to physician if breathing is difficult.

Section 5: Fire Fighting Measures

Extinguishing media: Water (preferred), CO2, Foam, Dry Powder.

Extinguishing media to avoid: None.

Protective equipment: Self-contained breathing apparatus.

Unusual fire hazards: Burning foam can generate toxic fumes.

Section 6: Accidental Release Measures

No special measures are required, but for disposal measures, see Section 13.

Section 7: Handling and Storage

Polyurethane foams should be treated as high fire hazard materials for the purposes of risk assessment and control. Storage areas for flexible polyurethane foam should be segregated from work and process areas by partitions of not less than 30 minutes fire resisting construction or 60 minutes if stored in the same building as domestic or other occupied premises. Users of foam in quantity should ensure that they comply with local regulations regarding storage and use.

Guidance is given by the Health and Safety Executive in their Guidance Note HS(G)92, “Safe use and storage of cellular plastics” (available from HMSO Books). Store indoors between 0°C and 40°C. Exposure to strong light and/or trace amounts of NO~ (from gas/oil combustion or vehicle/fork truck exhausts) has been known to initiate and/or accelerate yellowing and therefore should be avoided.

Section 8: Exposure Controls/Personal Protection

Some persons may experience skin irritation, due to the abrasive effect of the solid particle content of foams containing either melamine or expandable graphite. If this does occur, suitable gloves should be worn. Conventional and standard high resilient foams should not present this same hazard. Equipment such as band-knives, slitters, etc. should have sharp, smooth edged blades for cutting foam. Saw-tooth type blades will produce dust. Buffing, crumbing or cutting with saw-tooth blades will produce foam dust, which if allowed to accumulate, will produce a fire/explosion hazard. A high standard of housekeeping is required to remove dust deposits regularly. Local exhaust ventilation may be necessary to remove the dust formed at source. Dust collectors used must be fitted with explosion relief panels. Foam dust, at high concentrations in the atmosphere, will cause a nuisance and discomfort to the nose and throat, so atmospheric levels should be kept to a minimum. Melamine or graphite dust will also be released when CMHR foams, KCME foam grades are buffed or crumbed and this can also cause irritation to nose and throat at high concentrations. Local exhaust ventilation may be necessary for control.

Hot wire cutting should be avoided. This will release toxic fumes containing isocyanates into the atmosphere. Flame lamination processes, for bonding foam to fabrics, produces combustion products from the foam as it passes over the burner. These fumes contain isocyanates and emissions from these processes must be controlled by an efficient extraction system.
Section 9: Physical and Chemical Properties

Form: Cellular solid.

Colour: May be any colour.

Odour: Amine-like when new, fading to none a few days after manufacture.

Density (water=1): 0.15 to 0.080.

Solubility in water: Greater than 200°C.

Section 10: Stability and Reactivity

Thermal decomposition will occur by exposure to heat sources, open flames and high temperatures (>180°C). Ignition temperature is around 400°C. The product is stable at temperatures between ~400°C & +800°C. Keep away from naked sources of ignition. Hazardous decomposition products are mainly CO2, CO, and NOR, but sufficient other substances (including isocyanates and HCN) render the gaseous decomposition products toxic by inhalation. Hazardous reactions do not occur at ambient temperatures when used as directed.

Section 11: Toxicological Information

LD50 oral, rat >5g/kg.

Effect on eyes: Mechanical irritation only.

Effect on skin: None in normal individuals.

Section 12: Ecological Information

In the aquatic environment, flexible polyurethane foam will present few problems due to its insolubility. In the soil environment, natural bacteria and fungi will aid biodegradation. Chlorofluorocarbons and other auxiliary blowing agents regulated by the Montreal Protocol and its subsequent amendments are not used in the manufacture of some polyurethane foam.

Section 13: Disposal Considerations

Scrap polyurethane foam and off cuts can usually be recycled, if uncontaminated by extraneous matter. If recycling is not possible, scrap 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 or an equivalent body if outside the UK.

Section 14: Transport Information

The product is not classified as hazardous for any mode of transportation under current UK/EU/UN regulations.

Section 15: Regulatory Information

No labelling is currently required for this material by the Classification, Packaging and Labelling of Dangerous Substances Regulations and corresponding EC/EU/UN directives.

Section 16: Other Information

This Data Sheet conforms to EC Directive 91/155/EEC.

All recommendations and information contained on this data sheet are, to the best of our knowledge, correct. Product specifications are intended as guidelines. Since conditions of service are beyond our control, users must satisfy themselves that products are suitable for the intended use. No guarantee or warranty is given or implied in respect of information or recommendations, or that any use of products will not infringe rights belonging to other parties. We reserve the right to change product design and properties without notification.

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