



## *The Art of easy Sculpting*

Description: Polyurethane hard foam or polyisocyanurate hard foam  
*referred to as: polyurethane (PU)*

Chemical family: Urethane polymer

Material used for: modelling and filling

### Application of REACH

REACH applies to the manufacture, the marketing or the use of substances as such or in preparations or articles, as well as the marketing of preparations (Article 1.2). The regulations subsequently provide for a number of exceptions, either from REACH as a whole or of certain elements of the regulations.

### **Outside the scope of recording and assessment (Article 2.9):**

- Polymers

*This material is manufactured as an "article" and is therefore exempted from the Standard relating to the communication of hazards. Since this material is chemically inert and there is no exposure to a hazardous chemical substance during normal conditions of use, no Material Safety Data Sheet (MSDS) is required. An MSDS would in fact suggest that we were dealing here with chemical preparations. An MSDS is used to catalogue information about chemicals, chemical components and mixtures thereof.*

*The product is stable and not soluble in water. Hazardous products of decomposition are not likely during normal industrial use. In normal industrial use it is improbable that the product will form a significant source of environmental contamination. The processing of waste materials must be in conformity with local, provincial and national legislation. Hazardous waste: n/a. Minor chemical waste: n/a*  
*Not classified as hazardous according to the EC Directive on Hazardous Substances or the EC Directive on Hazardous Preparations. The product is not classified as hazardous under the transport legislation.*

*This form is provided as a convenience to our customers. The material does not contain any other hazardous ingredients mentioned in EU Directive 1999/45/EC, and according to Directive 67/548/EC does not present a hazard to health or the environment.*

### **Processing**

Polyurethane foam (PU) can be processed with production equipment such as: a knife, saw, milling machine or abrasives. Processing with a heated wire is strongly advised against. Processing with production equipment giving rise to high temperatures must be avoided. Fire may arise as a consequence of overheating of polyurethane foam, depending on the foam classification.

Polyurethane foam can be glued easily with other materials.

The product core may dissolve if it comes into contact with a solvent, in particular solvents containing methyl, ethyl and acetone.

### **Consequences of excessive exposure**

No consequences are anticipated in normal use.

Cutting and similar finishing work may generate polyurethane dust.

Extraction and PPE are required when working with nuisance dusts. Ventilation must be provided when the material is heated in order to prevent exposure to hazardous vapours.

Wear suitable protective clothing. Avoid eating and drinking during the processing of polyurethane.

Inhalation: The dust may cause irritation to the respiratory tract. Take the affected person to a source of fresh air and if necessary obtain medical assistance.

Contact with

the eyes: Dust may cause irritation. Flush the eyes with water and if necessary obtain medical assistance.

Skin contact: Dust may cause mechanical irritation. Wash thoroughly with soap and water.

## Personal protection

### Respiratory protection



Released polyurethane dust is classified as a nuisance dust with an MAC value of 10 mg/m<sup>3</sup>.

Polyurethane has polymers as a basic constituent.

These are long chains of smaller units called monomers. It is the polymers that give the material its characteristic properties. Additives are often combined with polymers to give the material further specific characteristics. Fire retardants, silicone oils, catalysts, blowing media, stabilisers etc., identified as a mixture; Polyol. Polyurethane - (PUR) polyisocyanurate foam (PIR) is formed through a reaction between 2 components (Polyol and polymeric isocyanate).

*Notes The finished product contains no free isocyanates.*

It can therefore be stated that PUR is a polymer.

**Polymer dust is** classified as nuisance dust.

*A nuisance dust is a dust with no specific consequences for health. However the dust may irritate the eyes, skin or airways. It must also be removed from the airways. The body's cleaning mechanisms may be overloaded, so that the airways become congested with mucous and dust, with respiratory problems as a consequence. Polymer dust may also cause other health problems due to released monomers and additives. Lung disease (fibrosis), pulmonary oedema, asthma or bronchitis may even be caused or exacerbated by nuisance dust (following years of exposure).*

*Nuisance dust is therefore a misleading term!*

*Insoluble dusts such as asbestos and quartz dust must be removed by the immune system, which may take years. Damage to the lungs from such dust will therefore continue, even if no more dust is inhaled.*

*PUR/PIR is insoluble (PUR/PIR = a thermosetting plastic)*

*The longer or more frequent the exposure to dust, the more will be breathed in and the longer it will be before the dust is removed again.*

Provide adequate ventilation and respiratory protection, as a minimum a dust mask with protection factor FFP1.

The air in the workplace may also be contaminated due to the presence of dust particles. Preventative measures should be taken first. The following should be considered:

- prevent the release of dust
- arrange for the extraction of the dust.

If this is impossible however, then there is no alternative to the use of respiratory protective equipment.

The degree of protection offered by a dust filter depends on its type:

Filter type	Protection factor
FFP1	4
FFP2	10
FFP3	30

*The nominal protection factor (NPF) indicates the relationship between the concentration outside the mask and the concentration inside the mask. A high NPF indicates a high level of protection. In order to determine the degree of protection offered by respiratory protective equipment it is necessary to know the NPF of the respiratory protective equipment and the concentration of hazardous dusts in the environment.*

*NPF = concentration in the workplace divided by the MAC value.*

### **Eye protection**



Dust is released during the processing of PU foam. The quantity is dependent on the processing method. Safety eyewear with side protection is recommended.

N.B. a minute, invisible particle or droplet of a chemical substance can cause painful and sometimes irreversible damage to the eye. The risks of radiation such as ultraviolet or infrared radiation should also not be underestimated.

*It must be established in the first instance whether measures are available which would make the wearing of safety eyewear unnecessary. If this is not possible the exposure time must be shortened. In other cases the employer must provide safety eyewear. There is a choice of different types and models. Good safety eyewear carries a CE mark and instructions describing the purpose and the level of protection. The wearing of safety eyewear can be promoted by involving the employees in the drafting of the risk assessment.*

### **Hand protection**



If desired, wear gloves to prevent mechanical irritation from the dust.

### **FIREFIGHTING MEASURES**

Precautionary measures must be taken against the initiation and spread of fire and against the hazards of smoke development. Be aware of the problem of poor visibility in fire and prevent the inhalation of smoke. The product will generate considerable heat in the event of fire.

**Fire extinguishers:** All available equipment is permitted.

**The following may be generated in the event of fire:** carbon monoxide, hydrogen cyanide HCN and possibly other toxic gases. *Notes.: Since HCN is flammable it is often destroyed immediately on release.*

**Special protective measures:** Firefighters must use self-contained compressed air breathing apparatus and emergency equipment.

**Special characteristics:** Polyurethane foam can cause thick smoke in case of fire.

### **USE AND STORAGE**

**Use:** no special requirements during normal industrial use. Use tools when lifting or moving large quantities, in order to prevent physical injury.

**Storage:** Store the product away from any sources of ignition, such as: open flame, burning gear, welding equipment and other forms of direct radiant heat. Store the product in protected and dry conditions, prevent exposure to sun, wind and rain.

Ensure that the product is stacked stably and with good access between stacks. Do not stack the product too high.

### **Further information**

This information sheet has been drawn up with care. However we can accept no liability for damage of whatever nature caused by the use of this information or the relevant product.

The information in this information sheet is provided with the best intentions and is based on our current state of knowledge; we therefore reserve the right to update and amend this document whenever necessary.

The information is intended to describe the product from the point of view of the user's safety. The information must not be interpreted as a guarantee.

The user must carry out his own risk assessment covering all applicable uses by his employees.

All chemical products may have effects on allergic or sensitive persons. Such persons should consult a doctor before using the product. The wearing of the appropriate safety equipment is strongly recommended as a precaution for sensitive people. The product must only be used for its intended purpose.