

## SAFETY INDICATIONS

1430

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Most paints contain flammable solvents and some contain materials which can harm the skin, or damage the health if swallowed or inhaled. Whilst most countries have developed regulations to control labelling, storage and use of toxic or hazardous material as yet there is no agreed international code or system.

Sigma Coatings will adopt the local requirements in any country where their products are sold, but since it is quite impossible and even confusing to apply all the marks which could be required for every country, a Sigma Coatings system has been developed which is standard for our products throughout the world. We will then add local regulation markings in addition, if required.

Two major classes of risk must be controlled and precautions defined which will reduce the risk to acceptable levels:

A) Health risks, these include: –

1. Gases or vapours. These could include solvent evaporation during the drying period, or perhaps formed during heating of the painted object.
2. Liquids in the paint. These might be solvents, or perhaps binders, which may be toxic if swallowed or inhaled as spray droplets, or dermatitic or toxic in contact with the skin.
3. Powders or dusts. These can be formed during heating painted objects (e.g. flame cutting or welding painted steel), or be present in powder formed during sanding operations, or in spray mist.

B) Fire or explosion risks, these include: –

1. Fire risk during storage or transport. Most paints other than water based products can be ignited and will support flame.
2. Explosion hazard during application. Flammable solvents in mixture with oxygen in air can explode within certain concentration limits if ignited or detonated.

The following sentences are used to define the classes of hazard and this data sheet gives details of precautions which should be taken in each case.

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<p>Relatively harmless paint</p>	<p>Normal measures which are always applicable are:</p> <ul style="list-style-type: none"> <li>– Wash hands regularly and thoroughly with warm water/soap.</li> <li>– Immediately cover any wound or cut.</li> <li>– Do not roll cigarettes, smoke, or eat with dirty hands.</li> <li>– Beware of possible dust or fumes resulting from sand papering or burning.</li> <li>– Check carefully that there is no possible fire or explosion risk.</li> <li>– Check whether extra ventilation is required.</li> </ul>
<p>Highly flammable paint. Flash point up to and including 23°C (DIN 53213).</p>	<p>Flash point of paints and solvents is stated in all our product data sheets. This is the lowest temperature at which a mixture of the material with air can ignite or explode. If the temperature of the air is near, or above, the flash point it is essential that sufficient ventilation air is provided to reduce the concentration of solvent well below the lower explosive limit (L.E.L.). Mixtures of solvent and air can only explode when the concentration lies between the lower and upper explosive limits. These limits vary from one solvent to another but the LEL is usually about 50 g per 1 m<sup>3</sup> of air. This is described in detail in sheet 1431. In brief 200 m<sup>3</sup> ventilation air is required per kilo of solvent to maintain an atmosphere below 10% of LEL. Such a mixture is safe even at temperatures above the flash point.</p>
<p>Gloves recommended</p> <p>Paint which irritates or affects skin or mucous membranes.</p>	<p>Solvents and other components in some paints can irritate the skin, and although in normal paints this may only be a minor and temporary irritation, dermatitis of sensitive skins can be caused by solvents or chemicals in some paints. These are indicated by this 'glove' sentence. Barrier creams together with gloves, goggles and possibly face masks should be used. In all cases, however, the habit of using solvents to clean the skin after painting should be discouraged. Contact of paint with the skin should be avoided by use of barrier creams and protective gloves. Any paint on the skin should be removed at once with skin cleaning liquids or jellies and then washed with water.</p>
<p>Mask recommended</p> <p>Inhalation of dust and spraymist is harmful.</p>	<p>Dust, smoke and spray mist can be filtered by face masks containing a dust filter cartridge. Cartridges are also available which absorb both dust and solvents. These are only effective whilst there is no apparent smell of solvent. The filter is exhausted when the odour of solvent can be detected and the filter should then be changed. It is most important that the correct filter for the class of work should be used. These are described by the manufacturers of the face mask and filter.</p>

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- Fresh Air Mask recommended  
Inhalation of vapour and dust is harmful.
- Toxic substances in paints usually enter the body by inhalation of gases, vapours, fumes, dusts or spray mists. An indication of the level of hazard is the Threshold Limits Value (T.L.V.), at one time called Maximum Allowable Concentration (M.A.C.). This is the concentration which can be tolerated by a healthy worker for 8 hours a day without adverse effects. The lower the figure, the more toxic the substance.
- The concentrations are given either as parts per million (ppm), i.e. cm<sup>3</sup> of vapour per m<sup>3</sup> of air, or for solid dusts as mg per m<sup>3</sup>. The minimum volume for air required to achieve this safe level of concentration will be given in our data sheets. This volume may in some cases be as much as 20 times that required to reach 10% of LEL and in some classes of work it may be impractical to supply the volume of air required to allow the required rate of usage of paint in the compartment. In such cases it is essential that operators are supplied with, and required to use, fresh air masks or respirators fed with clean air at positive pressure. It is important that the mask has a good facial fit. See also sheet 1431.
- Paint contains heavy toxic substances and is dangerous.
- Keep skin covered as far as possible, wear gloves and protect the eyes. Avoid contamination of the skin. Provide very good ventilation **and** wear fresh air mask. Change all overclothes and shoes immediately after finishing the work. Keep dirty cloths and other objects separate, destroy or clean contaminated clothes with care. Wash the hands very thoroughly. Handle empty containers with care and avoid contamination of the environment with any poisonous paint or waste.

THE SIGMA WARNING SYSTEM will show one, or a combination of more than one, of the described sentences. The safety code required in each country will be added to drums used in that country.

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