

Health and Safety Alert

Health Risks When Using Foam Sealant Products to Form Structures and Sculptures in TV and Film Sets

1. Foam Sealant

Foam sealant is a product that is primarily designed for use in the construction industry as a filler to weatherproof, or in some cases provide fire insulation in structures where there are gaps/cavities present. It is a polyurethane foam that expands as it cures and is placed in voids to provide a barrier against moisture, air flow, pests, and also smoke penetration.

Foam sealant products are increasingly being used within the media industry to form structures and sculptures, as an alternative moulding product to plaster. This is due to its superior curing time and ease of use. This means the product is being used in much greater quantities than it was originally designed for.

2. Warning

Foam sealants contain Isocyanates that can pose health problems. The way in which they are being used within the Media industry can potentially expose the user and others to hazardous levels of fumes and particulates unless properly controlled. Potential hazards include:

- Causes skin and eye irritation.
- May cause an allergic skin reaction.
- Harmful if inhaled.
- May cause allergy or asthma symptoms or breathing difficulties if inhaled.
- May cause respiratory irritation.
- Suspected of causing cancer.
- May cause occupational asthma.
- May cause damage to organs through prolonged or repeated exposure if inhaled.

3. Action on Users – Risk Assessment (e.g. Construction Managers, HoD's, Arts Dept)

Certain tasks when using Foam for forming structures and sculptures, such as spraying and the curing process can produce very high exposure to isocyanates. The following tells you how to control these risks and why.

The Control of Hazardous Substances Hazardous to Health (COSHH) Regulations say that you must protect against the risks from isocyanates and other harmful substances. This means that you must carry out a COSHH Risk Assessment. To do this you must first identify tasks where you will be using products containing isocyanates or other harmful substances. Consider:

1. **Who** – Think about your workers. Who is using products containing isocyanates or other harmful substances? Is anyone else likely to be around who might be affected by the work you are doing? This includes members of the production crew, artistes, others.
2. **What** – Which product are you using? You can find isocyanates in a number of products including polyurethane paints, coatings, **foams**, glues and flooring. Check the packaging and manufacturers Safety Data Sheet. Check also to see if there are any other substances hazardous to health in the product, such as solvents.
3. **How** – Think about how you will be doing the work. The more spray / mist / fumes / particulates that are generated the greater the risk. Spraying and curing tasks can produce very high exposure to isocyanates.
4. **Where** – The more enclosed the space, the greater the risk may be. This depends on what you are doing and how you are doing it.

Use this information to identify the level of risk. Workers are generally at lower risk of inhaling isocyanates if they are applying the products with hand tools like brushes or trowels. In contrast, spraying is a higher risk task. Seek specialist safety advice if you are unsure.

4. Control

Where the risks are judged to be low, simple and inexpensive controls will suffice. For other tasks, e.g. when spraying, using in confined spaces or used in bulk for forming structures or sculptures you will have to do more. The range of isocyanate containing products and the tasks you can use these for mean that you must decide on the specific controls you need based upon your assessment of the risks. Seek specialist help if you are unsure about this. Give priority to the greatest risks first.

- **Prevent:** Where possible think about eliminating or reducing isocyanate risks. Consider: Using alternative products, e.g. that do not contain isocyanates
- **Avoiding unnecessary spraying:** use the minimum amount of the product as possible
- **Being aware of anyone who is already sensitised to isocyanates:** Keep them away from the work
- **Control:** Even if you minimise some of the risk this way, you may still need to control isocyanate risks. Control this by using the appropriate measures below:
 - Ventilation – make sure there is enough fresh air in the work area. Use local exhaust ventilation when using the product if possible. Open doors and windows etc. The higher the risk the better the ventilation will need to be.

- Eye protection – wear eye protection (e.g. goggles or a face shield) when doing work where splashes / aerosol may get into the eyes.
- Gloves – gloves should be right for the products you are using – single use disposable gloves made of suitable materials (e.g. nitrile) are preferable. Make sure the breakthrough time and permeation rate are right for the type and length of the work. Check with the manufacturer / supplier. You may need gauntlet style gloves to prevent skin exposure.
- Overalls – disposable overalls are preferred. Launder significantly contaminated reusable overalls before wearing them again.
- Washing – good washing facilities are essential. Wash off any product on the skin as soon as possible. Do not use solvents to do this. Workers should be encouraged to wash exposed skin at breaks and after finishing work. Skin care products can also help replace the natural oils that help keep the skin's protective barrier working properly.
- Respiratory Protective Equipment (RPE) – basic face masks should always be worn. You may need more extensive RPE where ventilation does not provide enough control – particularly in enclosed spaces if you are creating an aerosol. Wearers should be fit tested where needed. It is particularly important to select the correct filter. For example, P3 particulate filters provide protection against spray mist but do not protect you from vapours. You will need the right gas / vapour filter for these. Change them at suitable intervals. Check with your supplier if you're not sure.
- First aid – give adequate and appropriate first aid treatment to anyone affected by isocyanates. You may also need to seek further medical attention.
- Inform and Train – ensure workers know the risks and how to use the controls properly. They also need to be aware of the signs and symptoms of ill-health from isocyanate exposure.

5. Responsibilities

The HoD is responsible for ensuring a suitable and sufficient COSHH risk assessment is completed. Also for ensuring that the controls such as work methods, PPE and welfare are effective and used by the workers.

If the work activity generates aerosols containing isocyanates or if there is a risk of contact dermatitis then health surveillance of the workers must be provided.

6. Recommendation

Ensure a suitable and sufficient COSHH risk assessment is undertaken, prior to use, for all foam products. Also, for all other products which may be hazardous to health.

If you need further clarification or advice please contact First Option:

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