

TI 15/3: Protective measures when using chemicals including lacquers, casting compounds, thinners, cleaning agents

The use of chemicals including lacquers, casting compounds, thinners and cleaning agents always requires special care. Dependent upon the properties of the used materials interactions especially with the skin may occur.

The information in this technical information sheet and the material safety data sheet as well as the country-specific regulations should serve to avoid possible health hazards.

General information

According to European and national regulations on workplace safety (Council Directive 89/391/EEC of 12 June 1989 on the introduction of measures to encourage improvements in the safety and health of workers at work; the German "Gefahrstoffverordnung") employers must issue workplace and material-specific handling instructions in accordance with the hazard assessment for the dangerous goods used in chemical practice. These instructions draw attention to the risks for humans and the environment when handling hazardous substances and define the required protective measures and behavioural regulations.

The handling instructions must be written in a comprehensible form and in the language of the employees and be hung up in the work-place. With the help of the handling instructions the employer must verbally advise employees handling hazardous substances in either a workplace- or task-specific manner prior to employment and at least once per year thereafter, and must document the briefing accordingly.

Dependent upon the properties of the used materials interactions especially with the skin may occur. So a hypersensitivity of the skin may exist or evolve during the course of time. Persons who tend towards allergic reactions should not work with products that contain materials which are classified as sensitizers. If allergic reactions occur it is important that the person concerned consults a doctor as soon as possible and performs a corresponding allergy test.

This technical information sheet is designed to serve as a guideline to make the handling of chemicals safer.

Operational protective measures

- As far as possible make use of appropriate technical equipment for the processing to avoid contact of the staff members with lacquers, casting compounds, hardeners, thinners and/or cleaning agents.
- An effective ventilation (intake and exhaust) of the work rooms must be ensured to keep the exposure of the employees as low as possible by means of air exchange. Since solvents are heavier than air they should be extracted down and away from the employee. The exhaust devices of the source exhaust should be provided at solvent source level.
- Cold and warm water washing facilities should be equipped with a mixer tap that is suitable for arm operation. For the general cleaning of hands a mild hand-washing agent in a soap dispenser should be available.
- Cover work areas and replace soiled covers daily. Paper sheets are suitable as covers.
- Use disposable tissues/towels made of cellulose for wiping off or up.
- Especially in workplaces where splashes are to be expected eye rinsing bottles with a sterile rinsing solution must be available so that splashes into the eye can be immediately rinsed.
- Personal protective equipment such as protective goggles, protective gloves, etc. must be provided by the employer (see also the item "Personal protective measures").

Personal protective measures

- Use the handling instructions and the corresponding material safety data sheets to inform yourself about the handling regulations for the lacquers, hardeners, casting compounds, thinners and cleaning agents used.

Avoid direct contact with the above mentioned products by taking the following measures:

- Wear suitable protective gloves to avoid direct skin contact with the products. When wearing rubber gloves or gloves of similar vapour-proof material over a longer period of time the skin may soften and become especially sensitive to harmful influences.
- Always wear protective goggles when handling highly-liquid products as well as solvents (cleaning agents, thinners)!
- Skin care should be effected according to a **skin protection plan**:
 - Protect stressed skin areas and hands **prior to work** and after lunch breaks with suitable skin protection preparations.
 - Use a mild hand-washing cream to cleanse skin **after work** – prior to breaks and at the end of a workday. Special hand cleansing materials should only be used in case of extremely soiled hands that remove resin and lacquer residues thoroughly but additionally stress the skin.

Do not use solvent based cleaning agents for washing hands since solvents remove the natural grease from skin, the skin becomes chapped and harmful substances may come into contact with the skin enter the bloodstream via the skin.

- Use a moisturising skin cream **after cleaning the skin** to add grease and moisturising substances to the stressed skin.
- While working with lacquers, casting compounds, hardeners, thinners and cleaning agents do not eat, drink or smoke (the latter also for reasons of fire protection); observe the corresponding instructions given by your employer.
- Keep your workplace clean and ensure good ventilation.
- Pay attention to hygiene. That does not only mean regular skin care but also the avoidance of carrying product residues to other tools and rooms.

First aid

- In case that despite protective goggles lacquer, thinner or cleaning agent gets into the eye, the eye must be immediately rinsed with lots of tap water or sterile rinsing solution from an eye rinsing bottle.
- **After initial first aid measures, consult ophthalmologist immediately!**
- Dab soiled areas of skin with a clean page-towel and wash with a mild skin cleansing agent and flush again with copious amounts of water. In case of cauterizations rinse with copious amounts of water! If irritation continues (redness, etc.) a medical examination is necessary.

Processing of lacquers

- When processing lacquers, the safety precautions of the German Accident Prevention Regulation BGR 500 "Operating work materials", section 2,29 "Processing coating materials", in particular item 3 "Operation", as well as of the German Explosion Protection Regulations (BGR 104) or of corresponding national regulations on explosion protection must be observed.
- In the German Accident Prevention Information for Safety and Health at Work, BGI 740 "Coating rooms and devices for liquid coating materials; construction equipment, protection against fire and explosion, operation" you will find additional information on a safe lacquer application and on the furnishing of the rooms.
- When processing lacquers by means of spraying it is mandatory to take protective measures to avoid formation of solvent vapour mixtures that might explode.

When **oxidative curing lacquer systems** dry, reaction heat results that may ignite filter mats in spraying cabins impregnated with lacquer and solvent residues, cleaning cloths or similar items.

- Use water-irrigated spraying cabins to avoid the risk of the filter mats self-igniting. This is also explicitly stated in the product-specific technical reports or the respective Application Information sheets made available by Lackwerke Peters GmbH + Co KG.
- Moreover, observe the operating and maintenance instructions of the spraying cabin and filter mat manufacturers.
- All filter mats and dirty cloths/cleaning rags impregnated with lacquer and solvents must be collected and stored in non-flammable containers with well-closing lid, and be removed from the work area once the work is completed (see also the item "Disposal of lacquer residues").

Handling of 2-pack products

Moreover, when handling 2-pack products the user has to consider that the components may have different risk potentials: i.e. one component may not be classified as harmful to health or the environment while the other can have hazardous properties. For the mixture the user can perform an estimation. Alternatively the protective measures relevant to the component that is classified as more hazardous can be observed, since when both components are mixed, a higher risk as for the single components cannot result.

Being polymers, the products processed according to our instructions must not be classified as hazardous substances or preparations after curing.

Disposal of lacquer residues

- When disposing of lacquer residues and waste that result during processing you, as the user, have to observe the relevant regulations of the disposal laws.

Waste from the processing of lacquers is usually hazardous waste that has to be disposed of by specialized disposal companies under the consideration of special documentation obligations.

Proposals for the proper disposal are indicated in the material safety data sheet in the form of a waste index acc. to the European waste catalogue (EWC).

The waste has the same noxious potential as the lacquers or the lacquer components themselves. Spontaneous ignition of lacquer and lacquering waste can result from violent reactions of lacquer components with each other or also with other materials.

- Observe the notes regarding stability and reactivity in the corresponding material safety data sheet.
- In case of 2-pack systems based on polyurethane resin (PUR) you must allow the product residues of the hardener component to react off to unproblematic substances prior to disposal. Appropriate advice can be taken from the corresponding material safety data sheet.

The contact with air oxygen of oxidative curing conformal/permanent coatings on large surfaces such as filter mats or cleaning rags can lead to ignition of the materials on account of the reaction heat of oxidative curing

- Therefore, always collect cleaning and filtering materials etc. impregnated with lacquer or solvent residues meant for disposal in tight, self-closing fire-resistant tins. Remove these tins from the work area after work is completed, at least once a day, and store them outdoors.

For storing used cleaning rags, suitable metal swing-lid containers, self-closing metal bins or other waste collection containers approved by the dangerous goods regulations can be used for disposal, with the latter being usually provided in different sizes by the waste management companies for the disposing of lacquer waste.



Left and middle: Two metal containers used by Lackwerke Peters for temporary storage
Right: Waste collection containers provided by Schönackers Umweltdienste, Kempen (© Schönackers)

Further literature and supply sources

We shall provide you with material safety data sheets containing safety-relevant information for ordered or sample products free of charge with your first order or sample delivery. If there are any essential changes to a material safety data sheet we will provide you with a revised edition of the material safety data sheet at no cost.

A recommendation on how to implement the data included in the material safety data sheet to dangerous goods operating instructions is included in the Technical Rule of Dangerous Materials (TRGS 555) "Operating instruction and advising of employees".

Like all professional organisations, the professional organisation of raw materials and the chemical industry (BG RCI) has issued a number of publications and media related to safety and health protection, including the professional organisation regulations (BGR), regulations (BGI) and information (BGI). All companies affiliated to BG RCI may receive many publications and media free of charge. They can be ordered from:

Jedermann-Verlag GmbH, Mittelgewannweg 15, 69123 Heidelberg, Germany

<http://www.jedermann.de> / <http://bgrci.shop.jedermann.de/shop/>

For general information on work safety and website of public access is available from

Carl-Heymanns-Verlag, Luxemburger Str. 449, 50939 Köln, Germany

www.carl-heymanns.de / www.arbeitssicherheit.de

A manufacturer of products for skin protection, skin cleansing and skin care is

Evonik Industries AG, STOKO® Professional Skin Care, Bäckerpfad 25, 47805 Krefeld, Germany

www.stoko.de.

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Any questions?

We would be pleased to offer you advice and assistance in solving your problems. Free samples and technical literature are available upon request.

Lackwerke Peters GmbH & Co. KG
Hooghe Weg 13, 47906 Kempen, Germany

Internet: www.peters.de
E-Mail: peters@peters.de

Phone +49 2152 2009-0
Fax +49 2152 2009-70

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