



Personal Protective Equipment (PPE) for use with Glutaraldehyde Exposures

407

Special

This guidance sheet is intended to provide best practice advice. It is designed to help employers (including the self-employed and small businesses) address hazardous conditions in the workplace. The recommendations are intended to provide information for identifying hazardous substances or work activities and simple precautions for minimizing risks to workers. This guidance was developed by the National Institute for Occupational Safety and Health, Centers for Disease Control and Prevention (NIOSH/CDC) through research in various work environments and industry sectors in partnership with stakeholders representing industry, labor groups, academia, and other government agencies.*

MSDS

Obtain (material) safety data sheets (MSDSs) from your product supplier. Use the information on these sheets to identify the hazards associated with specific chemicals and to explore the possibility of using safer substitutes. If several products are equally efficacious, try to use the least hazardous product(s).

Surveillance

All workers exposed or liable to be exposed to a substance that may cause adverse health effects during "normal" use should be under suitable medical surveillance. The extent and detail of the medical surveillance should be related to the degree of risk identified during an assessment. An occupational health professional should be consulted to determine the degree of risk and level of surveillance. Medical surveillance should include the maintenance of a medical record in a suitable form for each exposed worker. This guidance sheet can be used as part of the approach to control potentially adverse health effects from inhalation of airborne contaminants.

Controls

This guidance sheet recommends the use of local ventilation along with appropriate protective equipment.

See COSHH Essential Control Guidance Sheets 400 (www.coshh-essentials.org.uk/assets/live/G400.pdf) and 402 (www.coshh-essentials.org.uk/assets/live/G402.pdf).

This guidance sheet is currently in DRAFT form awaiting review and approval. Please do not quote, cite, or distribute.

*The Dow Chemical Company, Kaiser Permanente, MediSHARE Environmental Health and Safety Services, Society of Gastroenterology Nurses and Associates (SGNA), NIOSH, and Health and Safety Executive (HSE), United Kingdom.

Glutaraldehyde Hazards

The information obtained from answering the questions on sheet S100 will help determine which parts of the body are likely to be exposed to glutaraldehyde when performing different tasks.

- Train workers on the potential health hazards from glutaraldehyde exposure to ensure understanding of the importance for proper PPE selection and use.
- Avoid breathing glutaraldehyde vapours. Vapours may cause difficulty in breathing (asthma).
- Avoid splashing solution on the skin or in the eyes. Contact with glutaraldehyde solutions can lead to skin soreness and itching, rashes, blistering (dermatitis), and damage to the eyes.
- Never enter an area where a spill has occurred without the proper personal protective equipment (PPE) and training.

Required PPE

- Wear protective gloves—single-use nitrile gloves are acceptable.
- Latex gloves are not recommended for protection against exposure to glutaraldehyde. Glutaraldehyde readily passes through latex gloves, exposing skin to the hazards.
- Wear chemical splash goggles or a full face shield when pouring glutaraldehyde or when splashes are likely to occur during its use.
- Wear a lab coat with long sleeves or chemical protective apron
- Wear protective footwear (closed toes and heels, impervious material: not cloth or leather).
- Respiratory protective equipment (RPE) may be required in case of a spill or during large pouring tasks. Seek advice from your PPE supplier or Safety Manager.

General Precautions

- Follow the instructions on product labels and/or safety data sheets. Ask your safety-clothing supplier to help you purchase the appropriate PPE.
- Make sure you know how to check that PPE fits correctly. Seek advice from your supplier or Safety Manager.
- Dispose of single-use gloves and PPE every time you take them off.
- Skin creams are important for skin protection and help in washing contamination from the skin. These are not 'barrier creams' and do not protect the skin from glutaraldehyde exposure.
- Check protective equipment for damage both before and after use.
- Clean and maintain all PPE regularly. Wash reusable protective clothing on a regular basis at work or at a specialist laundry.
- Contaminated clothing should not be taken home to be washed.

Chemical Protective Gloves

- Gloves must be sufficiently robust not to tear or split while undertaking the work activity. They should have long cuffs to protect the forearm from exposure.
- Latex, leather, cotton, or stitched working gloves are not suitable for glutaraldehyde.
- If you do need to use single-use natural rubber latex gloves, they must be 'low-protein, powder-free' gloves. Refer to latex allergy web pages at www.hse.gov.uk/latex for further explanation.
- Do not touch the outside of a used glove with an unprotected hand when putting gloves on or taking gloves off.

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Coveralls, Lab Coats, Aprons

- When pouring glutaraldehyde solutions, wear an impervious chemical protective apron to protect clothing and skin from splashes.
- Coveralls should preferentially cover the ankles, rather than being tucked into boots or shoes.
- Gloves should be worn over the sleeves to prevent seepage of glutaraldehyde solutions under clothing and into the gloves.

Protective Footwear

- Wear shoes constructed of materials impervious to glutaraldehyde to prevent penetration and protect the skin on the feet or ankles.
- Ensure protective footwear complies with the appropriate ANSI Standard.
- When there is a risk of a glutaraldehyde solution coming into contact with the lower leg, wear impervious boots or shoes and leg-coverings.

Eye and Face Protection

- When handling open containers or pouring glutaraldehyde solutions, wear a full-face shield to prevent face, neck, and eye contact with aerosol or vapor.
- Chemical splash goggles may be more practical when wearing a respirator.
- Surgical masks with eye shields do not protect the eyes from glutaraldehyde and are not a substitute for goggles or chemical faceshields.

Respiratory Protective Equipment (RPE)

- The selection and use of RPE needs careful consideration—Refer to the OSHA standard, 29 CFR 1910.134 and the NIOSH Respirator Selection Logic Document (www.cdc.gov/niosh/docs/2005-100).
- Surgical masks are not protective against glutaraldehyde vapors.

Cleaning and Housekeeping

- Keep the work area clean and well organized.
- Clean up spills promptly—practice how to do this at least twice per year (See Control Guidance Sheet 404).
- Wear appropriate PPE when cleaning up spills

Health surveillance—(See Control Guidance Sheet 402.)

Training

- Show your workers this sheet and make certain that they understand it.
- Instruct workers about the risks of using the product—see product labels or the Safety Data Sheet from your product supplier.
- Make certain everyone knows how to clean up small spills promptly and safely.

Supervision

- OSHA 29 CFR 1910.133 (OSHA PPE Standard) requires that a workplace hazard assessment be performed, including personnel exposure monitoring, and that appropriate PPE be assigned on a task-basis to protect workers from exposure to those hazards.
- Make certain that ventilation is working properly and that PPE is being used correctly.
- Ensure that the health surveillance system is being executed for those who need it.

Further information

Consult the supplier's (material) safety data sheet for further information or contact phone numbers for emergency information. Obtain additional information from the NIOSH toll-free number 1-800-CDC-INFO (1-800-232-4636) within the United States or 513-533-8328 outside the United States), or access the Web site at www.cdc.gov/niosh/cntc_nil.html.

To receive NIOSH documents or more information about occupational safety and health topics, contact NIOSH at

Telephone: 1-800-CDC-INFO (1-800-232-4636)
TTY: 1-888-232-6348 ■ E-mail: cdcinfo@cdc.gov

or visit the NIOSH Web site at
www.cdc.gov/niosh.

For a monthly update on news at NIOSH, subscribe to *NIOSH eNews* by visiting www.cdc.gov/niosh/eNews.

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Worker Checklist

- Refer to your workplace hazard assessment for required PPE for each task you perform with glutaraldehyde.
- Check that your Personal Protective Equipment (PPE) works properly every time you put it on. Check your gloves for pinholes or tears before wearing.
- If your task involves contact with glutaraldehyde solutions beyond incidental splash or drips, make sure to choose thicker, more protective gloves with long cuffs to protect the wrists and arms.
- Surgical masks are not protective against glutaraldehyde vapors. Use an appropriately designated respirator.
- Eye shields used to prevent exposure to Bloodborne Pathogens do not protect eyes from glutaraldehyde. Wear appropriate chemical goggles or faceshields.
- Always follow the standard operating procedures.
- Use, maintain, and store your PPE in accordance with instructions.
- Disposable PPE is meant to be worn only once. Dispose of the used PPE after each use.
- If you encounter any problems, tell your supervisor. Don't just carry on working.
- See glutaraldehyde Control Guidance Sheet 404 for liquid transfer when pouring or disposing of glutaraldehyde.
- Clean up spills immediately. Wear the appropriate PPE, including splash goggles, face shield and respirator for clean up. Use absorbent granules for spills and put them in a lidded waste container (See Control Guidance Sheet 404).
- Cooperate with health surveillance teams.
- Report skin soreness and itching, rashes, blistering (dermatitis), irritation to the eyes, or difficulty in breathing (asthma) immediately to your supervisor.

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