



Glutaraldehyde: Spill Containment and Cleanup

404

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 Please do not quote, cite, or distribute.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.

Workplace and Access

- ☑ Develop a spill containment plan that includes ready access to equipment (spill kits and personal protective equipment [PPE]) and procedures for alerting personnel with evacuation plans, if necessary.
- ☑ Avoid making contact with spilled material. Do not step in spills since glutaraldehyde may be absorbed by shoes.
- ☑ Do not attempt to contain or clean up a spill without appropriate PPE.
- ☑ Give prompt attention to drips, splashes, and spills to reduce exposure.
- ☑ Install an emergency kill switch at the entrance door. (See Control Guidance Sheet 406.)
- ☑ If a large spill occurs, close the door to the area. Notify the appropriate personnel before proceeding with the cleanup.

Design and Equipment

- ☑ Keep the area well ventilated: 12 air changes per hour with a through draft and negative pressure relative to adjacent areas. Use portable exhaust fans with appropriate filters if needed to circulate air.
- ☑ Use only spill kits that include a neutralizer, goggles, face shield, nitrile gloves, impervious gown, shoe covers, and appropriate organic cartridge respirator, if required.
- ☑ Place waste disposal containers near the exit.
- ☑ Keep a spill clean-up kit with a neutralization agent nearby. Contain spills with spill pillows, pigs, socks, and/or absorbent. Remember to store the spill kit away from likely spill areas so it may be retrieved without passing through the spill area.
- ☑ Have hand-washing facilities readily available for decontamination after handling products, preferably near the exit.
- ☑ Use sheet flooring with welded seams and 6-inch coving to contain spills.
- ☑ Minimize spills by storing containers within secondary containment.

Procedures

- ☑ Always check the air extraction exhaust with flutter strips or tell tails to assure proper operation.
- ☑ Wear the correct PPE. A self-contained breathing apparatus or a full-face air-purifying respirator with an organic cartridge may be required. (See Control Guidance Sheet 407.)
- ☑ Never allow a spill to be discharged into a natural waterway.



Typical spill kit content

DEPARTMENT OF HEALTH AND HUMAN SERVICES
Centers for Disease Control and Prevention
National Institute for Occupational Safety and Health



Small Spills

- Cover the liquid with absorbent or neutralizer material.
- Collect and seal the absorbed waste in polyethylene bags. Label and place in drums or waste containers with lids for waste characterization and proper disposal.
- Thoroughly flush the area with water to remove any remaining spilled material and to reduce odor. Direct water used for cleaning up the spill into a municipal or industrial sewer.

Large Spills

- Never enter an area where a large spill has occurred without the proper training on how to handle large spills.
- Immediately leave an area where a spill has occurred if you experience tearing of the eyes or nasal or respiratory irritation.
- Use the appropriate deactivation compound for sprinkling on the spill. Use 2–3 parts (by weight) of sodium bisulfite per part of glutaraldehyde solution. Use 1 tablespoon of powdered glycine per gallon of glutaraldehyde solution. Contact time must be for at least 5 minutes at room temperature. Commercial aldehyde neutralization products are also available. *Use a mop or other tool to thoroughly blend in the deactivation compound.*
- Dispose in a marked secure container or collect with a wet/dry vacuum. Thoroughly flush the area with water to remove any remaining spilled material and to reduce odor. Direct water used for cleaning up the spill into a municipal or industrial sewer.
- Waste disposal must be in accordance with appropriate regulations. Consult your safety manager or hazardous waste hauler.
- Never mix different waste products (e.g., acid, alkali, flammable solvent, chlorinated solvents, etc). Keep products with different chemical classifications separate.

Special care

Contact with glutaraldehyde solutions can lead to skin irritation and itching, rashes, blistering (dermatitis), damage to the eyes, and difficulty in breathing.

Personal Protective Equipment (PPE)—(See Control Guidance Sheet 407.)

- Follow the instructions on product labels or safety data sheets.
- Ask your safety-clothing supplier to help you purchase the appropriate PPE.
- You may need respiratory protective equipment (RPE) in case of a spill. Consult your safety manager or PPE supplier.
- Make sure you know how to check that PPE fits correctly. Consult your safety manager or supplier.
- Wear protective gloves: single-use nitrile gloves are acceptable. Latex gloves are not recommended for protection against exposure to glutaraldehyde.
- Dispose of single-use gloves every time you take them off.
- Use skin creams 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. After work, use creams to help replace skin oils.

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 (material) safety data sheet from your product supplier.
- Make certain everyone knows how to clean up spills promptly and safely.

Supervision

- Establish a spill containment team responsible for developing and executing procedures for spills. The team should include a safety committee representative, a physician, the unit supervisor, and other personnel as necessary.
- Check that ventilation is working properly and that workers use PPE correctly.
- Ensure that the health surveillance system is being carried out 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_ni1.html.

Worker Checklist

- Check that your personal protective equipment (PPE) works properly every time you put it on.
- Use, maintain, and store your PPE according to instructions.
- If you find any problems, tell your supervisor. Do not continue working.
- Wash your hands after each decontamination procedure and before and after eating, drinking, smoking, and using the toilet.
- Never clean your hands with concentrated cleaning products or solvents.
- Clean up spills immediately. Wear the appropriate PPE. Use absorbent granules for spills and put them in a waste container with a lid.
- Cooperate with medical surveillance teams.
- Always follow the standard operating procedures.
- Immediately report skin soreness and itching, rashes, blistering (dermatitis), irritation to the eyes, or difficulty in breathing to your supervisor.

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.

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