



Control approach 4

Automated Endoscope Reprocessor (AER)

401

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 Please do not quote, cite, or distribute.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

- Ensure that only trained workers have access to glutaraldehyde solutions. Training should include information about hazards, methods to control these hazards, and proper handling procedures
- Avoid placing the automated endoscope reprocessor (AER) in the procedure room.
- Establish a process flow. Use a physical barrier to separate storage and handling areas of clean and dirty endoscopes.
- Install an emergency kill switch at the entrance door. (See Control Guidance Sheet 406.)

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 slot ventilation near AERs and movable snorkel exhaust or fume control hoods over AERs.
- Keep a spill clean-up kit with a neutralization agent nearby. Contain spills with spill pillows, pigs, socks, or absorbent. (See Control Guidance Sheet 404.)
- Establish secondary containment around all AERs, i.e., place AER in a tray or provide spill socks around the base to contain a spill.
- Never decant disinfectant into an unlabeled container.
- Never re-use an empty disinfectant container. Dispose of it safely in the solid waste trash or return it to the supplier.
- Keep only limited amounts of disinfectant available for immediate use.
- Have hand-washing facilities readily available for decontamination after handling products, preferably near the exit.
- Establish an emergency eye washing and deluge shower station close to the AERs.
- Use sheet flooring with welded seams and 6-inch coving to contain spills.
- Do not use floor drains for water discharge. Use standpipe drains with air gaps to prevent back flow.

Procedures

- Make certain the cleaning and disinfection process flows from dirty to clean, i.e., landing area, leak test, pre-processing sink, AER washer, scope storage.
- Use a paddle-actuated switch or latch or swinging door with a view panel on the entrance door to the dirty side of the process so workers can avoid using dirty hands to open the door.



Suite of automated endoscope reprocessors

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- Always check the air extraction exhaust with flutter strips or tell tails to assure proper operation.
- Buy liquid chemicals in containers that are labeled and pour easily without dribbling or trapping liquid in the rim.
- Store containers so their labels face forward. Store heavier items on lower shelves. Store disinfectants and other eye irritants below eye level to avoid splashing in eyes.
- Store products containing chemicals securely in a cool, dry, dark place capable of containing spills. Don't store excessive quantities of cleaning and disinfectant products.
- Clean up spills immediately. Absorb liquids with the materials provided in the appropriate spill kits and keep these spill kits close to where glutaraldehyde is used or stored. Dispose in a marked secure container.
- Never mix different waste products (e.g., acid, alkali, flammable solvent, chlorinated solvents, etc). Keep products with different chemical classifications separate.
- Never enter an area where a spill has occurred without the proper personal protective equipment (PPE) and training.
- Safely dispose of all products you no longer need.

Special care

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

Cleaning and Housekeeping

- Keep the work area clean and well organized.
- Clean up spills promptly: practice this at least twice per year. (See Control Guidance Sheet 404.)
- Dispose of empty containers and wastes safely.
- Wear appropriate PPE when cleaning up spills.

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

- Make certain that ventilation is working properly and that workers use PPE 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_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 disinfection 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. (See Control Guidance Sheet 404.)
- Cooperate with health 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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