



Glutaraldehyde

Updated: November 2018

CAS number 111-30-8

Glutaraldehyde is a transparent oily, liquid with a pungent odor.

Usage and exposure

Glutaraldehyde is a disinfectant and a medication. It is applied as a liquid.

Glutaraldehyde is used for a number of applications:

- Disinfectant for surgical instruments that cannot be heat sterilized,
- A cross-linking and tanning agent,
- A biocide in metalworking fluids and in oil and gas pipelines,
- An antimicrobial in water-treatment systems,
- A slimicide in paper manufacturing,
- A preservative in cosmetics,
- A disinfectant in animal housing,
- A tissue fixative in histology and pathology labs,
- A hardening agent in the development of X-rays,
- In embalming solutions,
- In the preparation of grafts and bioprostheses,
- As a medication it is used to treat warts on the bottom of the feet,
- In various clinical applications [CDC].

Health care workers may be exposed to glutaraldehyde:

Hospital staff who work in areas with a cold sterilizing procedure that uses glutaraldehyde (e.g., gastroenterology or cardiology departments).

Research technicians, researchers, and pharmacy personnel who either prepare the alkaline solutions or fix tissues in histology and pathology labs.

Laboratory workers who sterilize bench tops with glutaraldehyde solutions.

Workers who develop x-rays [OSHA].

Routs of exposure

Workers can be exposed to glutaraldehyde through inhalation or skin contact.

Target organs

Respiratory system, skin.

Health hazards

Acute effects

Contact with glutaraldehyde liquid and vapor can severely irritate the eyes, and at higher concentrations burns the skin. Breathing glutaraldehyde can irritate the nose, throat, and respiratory tract, causing coughing and wheezing, nausea, headaches, drowsiness, nosebleeds, and dizziness [CDC, OSHA].

Chronic effects

Glutaraldehyde is a sensitizer. Some workers may become sensitive to glutaraldehyde and have strong reactions if they are exposed to even small amounts of it. Workers may get sudden asthma attacks with difficult breathing, wheezing, coughing, and tightness in the chest. Prolonged exposure can cause a skin allergy and chronic eczema, and afterwards, exposure to small amounts produces severe itching and skin rashes. Glutaraldehyde has been implicated as a possible cause of occupational asthma [OSHA].

References

- CDC. NIOSH. Workplace Safety and Health Topics. Glutaraldehyde. <https://www.cdc.gov/niosh/topics/glutaraldehyde/default.html>
- OSHA. Hospital eTool: Healthcare Wide Hazards - Glutaraldehyde. <https://www.osha.gov/SLTC/etools/hospital/hazards/glutaraldehyde/glut.html>