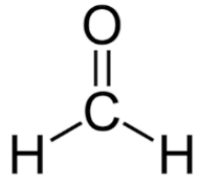
DEPARTMENT OF
ENVIRONMENTAL HEALTH AND SAFETY

EHS Fact Sheet
Formaldehyde

Formaldehyde is a colorless, pungent-smelling gas that is commonly purchased and used as in aqueous solutions known as formalin. Often, methanol is added to the aqueous solution. Paraformaldehyde is the polymer (solid form) of formaldehyde, and, when heated, depolymerizes back to formaldehyde.



Hazards and Toxicity

- Formaldehyde is known to be a human carcinogen (NTP, OSHA).
- The permissible exposure limit (PEL) for formaldehyde is 0.75 parts per million (PPM) measured as an 8-hr time-weighted average.
- The short-term exposure limit (STEL) is 2 ppm, which is the maximum exposure allowed during a 15-minute period.
- Exposure to >25 ppm can cause a pulmonary edema, which could lead to death.
- Exposure to >100 ppm is immediately dangerous to life and health (IDLH).
- Concentration of >0.1 ppm can irritate the mouth, nose and/or throat.
- The odor threshold or the level in which a normal person can smell the chemical is about 0.5-1.0 ppm.
- Concentrations of 3-5 ppm formaldehyde may severely irritate the eyes.
- Direct contact with eyes and skin may cause severe burns, blurry vision, loss of vision, or dermatitis. It is also a sensitizer.
- It is combustible with an approximate flash point of 64 °C (147 ° F) for about a 37% solution.
- It is corrosive. A solution of formaldehyde can have a pH range of 2.8-4.0.
- Consult the safety data sheet for additional information.

Usage

- Before working with formaldehyde, workers must receive specific, documented training for formaldehyde use and receive annual training thereafter.
- Before working with formaldehyde, prepare a written plan for the laboratory space.
- Wear appropriate personal protective equipment (PPE) such as chemical safety goggles, gloves and a lab coat. A respirator may be needed; please contact EHS for more information regarding the Respiratory Protection Program.
- Use engineering controls such as fume hoods.
- Do not use hypochlorites (such as bleach) or hydrochloric acid with formaldehyde, as it can form the potent carcinogen bis-chloromethyl ether.
- Store away from strong oxidizers.
- Label all containers if the concentration is >0.1%.

Spills

- Eliminate ignition sources.
- Clean up small spills using absorbent material.
- Wear appropriate PPE and have adequate ventilation.
- Collect clean up material for waste disposal.
- For large spills, evacuate the area and contact EHS.

Disposal

- Waste formaldehyde, formalin and paraformaldehyde needs to be disposed of by EHS Environmental Compliance.
- Tissue fixed with formaldehyde needs to be disposed of as bio-waste.
- Please contact EHS for more information.

OSHA Formaldehyde Fact Sheet

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