




LABORATORY SAFETY GUIDELINE

Paraformaldehyde (Aldacide; polyoxymethylene; formaldehyde dry solid; polymerised formaldehyde)
[CAS No. 30525-89-4]

Paraformaldehyde is solid polymerized formaldehyde. When you dissolve paraformaldehyde into a solution you now have a formalin solution. Over time paraformaldehyde will break down into a formaldehyde solution so the lab needs to keep this in mind when determining how much to order.

HAZARDS

	Paraformaldehyde is a flammable solid.
	<ul style="list-style-type: none">•Carcinogen (IARC Group 1 – confirmed human carcinogen).•Sensitizer (skin and pulmonary).•Irritant (skin, eye, and respiratory tract).•Breathing paraformaldehyde powders will irritate the nose and throat after prolonged exposure causing a cough, shortness of breath and possible lung damage.•Reproductive toxin (as a result of the formation of formaldehyde which is a decomposition product of paraformaldehyde).•Toxic (by skin contact and inhalation).
	Eye contact can result in corneal damage or blindness.

PRECAUTIONS

Storage

- Paraformaldehyde reacts violently with strong oxidizers. It is also incompatible with inorganic acids and alkalis. Therefore it should be stored in a manner that would prevent the possible comingling with these compounds.
- Paraformaldehyde is a flammable solid so it can be stored in a flammable storage cabinet.

Before starting work:

- Review manufacture's Safety Data Sheet and additional chemical information at <http://www.ehs.harvard.edu/safety-data-sheets-sds>.
- Make sure you are familiar with general University emergency procedures in the [EHS Emergency Response Guide](#).
- Identify the location of the nearest eyewash and shower and verify that they are accessible.

During work:

- AVOID INHALATION! Perform all operations in a certified chemical fume hood, wet bench or other approved ventilated area.
- AVOID CONTACT! Wear appropriate PPE including:
 - Lab coat and closed toed shoes.
 - Safety glasses or goggles.
 - Wear appropriate chemically protective gloves such as nitrile.
- All operations involving the weighing/handling of solid paraformaldehyde powder should be done inside an enclosed balance inside a chemical fume hood.
- If weighing paraformaldehyde in an enclosed scale on an open bench is the only method available, then cleaning the bench near the enclosed scale and the inside of the scale is mandatory after each use. Dispose of

the wipes as hazardous waste in an appropriate container.

- If any paraformaldehyde solution is heated it must be done inside a chemical fume hood.
- Keep all containers tightly closed when not in use.

After completing your work:

- Dispose of paraformaldehyde waste following Harvard University Hazardous Waste Procedures.
 - Hazardous Waste Classification: Ignitable. This designation is if your waste stream is solid (e.g., a nearly empty container), wipes that are dry, etc. If your waste stream is a liquid, then it should be managed as toxic waste.
- Return stock container to storage area.
- Wash hands before leaving lab.

EMERGENCY PROCEDURES

First Aid

SKIN CONTACT

- Immediately remove all contaminated clothing, including footwear.
- Flush skin and/or hair with running water and soap if available for 15 minutes.
- Seek medical attention if exposure results in visible irritation.

EYE CONTACT

- Using eyewash flush eyes while holding eyelid open and away from exposed eye for at least 15 minutes.
- Seek medical attention without delay.
- Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.

INHALATION

- If fumes are inhaled leave the area.
- Monitor for respiratory distress. If respiratory distress is noticed call 911 for medical assistance.

INGESTION

- **Call 911 for medical assistance (provide location if calling on a mobile phone).**
- If possible induce vomiting.

Spill Response

It is critical that you are familiar with Harvard's Emergency Response Guide for Laboratories. You can review the guide by clicking on this [link](#).

OUTSIDE FUME HOOD OR VENTILATED ENCLOSURE

- Alert people in the immediate area to evacuate to a safe distance and prevent entry.
- Call 911 if there is a medical emergency.
- Attend to injured or contaminated person and remove from area, if it is safe to do so.
- If the lab feels comfortable cleaning up the spill proceed per the guide, otherwise call operations for assistance (617) 495-5560 [HMS/HSDM (617) 432-1901].

INSIDE FUME HOOD OR VENTILATED ENCLOSURE

- Put on appropriate personal protective equipment including safety glasses, chemical resistant gloves, and a long-sleeved lab coat.
- If there is broken glass comingled with the solid debris use tweezers to collect the glass.
- Collect debris in an appropriate container, tightly seal or close container, attach a Hazardous Waste Tag, and move the waste to your Satellite Accumulation Area.
- Fill out an online [waste pickup request](#) at the EHS website.