

1,4-Dioxane

Chemical Name: CAS #:

Hazard Classification:

Location Used: Principal Investigator:

Processes for Which Chemical Is Used:

HAZARDS AND PROTECTION

Hazard Information

- Highly flammable
- Causes serious eye irritation
- May cause respiratory irritation
- Suspected of causing cancer
- Peroxide-forming solvent

Routes of Exposure

- Ingestion ● Skin Absorption
- Inhalation
- Eye absorption

If exposed by:

- Inhalation: Remove to fresh air
- Ingestion: Do not induce vomiting, rinse mouth with water
- Eye or skin: Rinse affected area for 15 minutes

If exposed by any route, seek medical attention.

Exposure Limits

All exposure limits are Time Weighted Averages (average exposure over an eight-hour day).

OSHA PEL: 25 ppm (90 mg/m³)

ACGIH TLV: 20 ppm (72 mg/m³)

Engineering Controls

- Chemical Fume Hood Never open 1,4-dioxane outside of a chemical fume hood.

Administrative Controls

- Designated area sign
- Particularly hazardous substance label
- Post designated area sign before each use.
- Label containers of 1,4-dioxane as a health and physical hazard.
- Use as small a quantity as possible.

1,4-Dioxane 123-91-1

Health and Physical Hazard

ARKANSAS STATE UNIVERSITY EHS
LABORATORY CHEMICAL STANDARD OPERATING PROCEDURE
CS-015 Last Reviewed December 16, 2019

Personal Protective Equipment

- Gloves
- Safety glasses or splash goggles
- Lab coat

Two pairs of nitrile gloves for short-term use. If longer term use, butyl rubber gloves are required. Change gloves immediately if a spill on gloves is observed.

Wash hands after use.

OTHER SAFETY INFORMATION

Transportation Follow guidance given in the laboratory safety manual for transport of chemicals.

Storage

- Store in a flammables materials storage cabinet.
- Keep away from heat or sources of ignition
- Keep tightly sealed
- Monitor for formation of explosive peroxides

Incompatible materials include:

Oxygen, oxidizing agents, halogens, reducing agents, perchlorates, trimethylaluminum

Spill/Accident Procedures

For all spills:

- Wear two pairs of nitrile gloves
- Turn off sources of ignition (if safe)
- Evacuate the immediate area

Exposure:

- If anyone exposed requires emergency medical attention, dial 911 (or 9-911 from landline).
- Follow procedures outlined in laboratory safety manual.

Small spills (less than 500 mL): Cover the spill with absorbent materials. Place absorbent materials in bag or bucket for collection by EHS. Clean area with soap and water once spill is removed.

Large spills (greater than 500 mL): If the spill is in a chemical fume hood, contact the EHS director (864-710-2933). If he cannot be reached (does not answer phone, do not leave voicemail), then call 911, pull the fire alarm and exit the building. If the spill is outside of a hood, then call 911, pull the fire alarm and exit the building.

Waste Disposal Waste 1,4-dioxane must be collected for disposal. Empty bottles of 1,4-dioxane may be rinsed and

thrown in the dumpster.

By signing below, you indicate that you have reviewed this SOP and understand the contents thereof

Revision #1

Created 2025-11-11 19:44:00 UTC by Christopher Crawford

Updated 2025-11-11 19:44:59 UTC by Christopher Crawford