



## Standard Operating Procedure (SOP)



### FORMALDEHYDE, FORMALIN AND PARAFORMALDEHYDE

Effective Date: 8/23/2013

Revised Date: 8/23/2022

#### Introduction

This SOP applies to FORMALDEHYDE, FORMALIN AND PARAFORMALDEHYDE.

FORMALDEHYDE exposure in Anatomy Lab will be monitored periodically to confirm exposure levels are below OSHA TWA and STEL. Environmental Health and Safety will perform monitoring and results will be provided to the PI.

Other laboratories on campus are required to use FORMALDEHYDE, FORMALIN AND PARAFORMALDEHYDE in fume hood.

#### Potential Hazards

Vapors/gas heavier than air. Toxic smoke/fumes in a fire. Attacks metals to liberate hydrogen. Dispose of this material and its container at hazardous or special waste collection point. In case of fire and/or explosion, DO NOT BREATHE FUMES.

#### Health Hazards

##### HEALTH HAZARD INFORMATION



Signal word: **Danger**

Hazard statement(s):

- H227 Combustible liquid.
- H290 May be corrosive to metals.
- H301 Toxic if swallowed.
- H311 Toxic in contact with skin.
- H331 Toxic if inhaled.
- H314 Causes severe skin burns and eye damage.
- H317 May cause an allergic skin reaction.
- H350 May cause cancer.
- H360 May damage fertility or the unborn child.
- H371 May cause damage to organs.
- H402 Harmful to aquatic life.

#### Personal Protective Equipment

## Standard Operating Procedure (SOP)



### FORMALDEHYDE, FORMALIN AND PARAFORMALDEHYDE

**Effective Date:** 8/23/2013

**Revised Date:** 8/23/2022

#### EYE PROTECTION

Safety glasses with side shields are appropriate for situations where there is no risk of fumes or vapors. In cases where fumes or vapors may be present, safety goggles must be worn, as these provide much better protection against these hazards.

#### HAND PROTECTION

Nitrile gloves generally provide the best overall protection for the widest range of chemicals. Charts with breakthrough times are available from each manufacturer and are usually located on their website. Neoprene gloves offer greater protection than Nitrile gloves, and should be used when working with concentrated, highly corrosive or toxic materials.

#### LAB COATS

Button lab coats, closed toed shoes, long pants and long sleeved clothing shall be worn when handling FORMALDEHYDE, FORMALIN AND PARAFORMALDEHYDE.

#### RESPIRATORY PROTECTION

Aside from the HES Anatomy lab, laboratories on campus are required to use FORMALDEHYDE, FORMALIN AND PARAFORMALDEHYDE in fume hood. This precludes the need for respiratory protection.

#### Work Practices

- All FORMALDEHYDE, FORMALIN AND PARAFORMALDEHYDE work shall be done in the laboratory fume hood or on anatomy dissection draw-down table.
- If fume hood or anatomy dissection draw-down table are not functioning, do not proceed with work. Call x4255 immediately for repair.
- If you are weighing paraformaldehyde powder and the balance cannot be located in a fume hood or BSC, tare a container then add powder in the hood and cover before returning to the balance to weigh the powder.
- Labs handling moderate to large quantities of formaldehyde-containing solutions on a regular basis should contact EHS at x3427 for assessment of exposure. Areas that handle only small (100 ml or less) pre-filled specimen containers, or that work with formaldehyde-containing solutions exclusively in a functioning chemical fume hood, would have low potential for overexposure, but should contact EHS if there are concerns.
- Once work with formalin/paraformaldehyde is complete, wipe down the area with a soap and water solution.

## Standard Operating Procedure (SOP)



### FORMALDEHYDE, FORMALIN AND PARAFORMALDEHYDE

**Effective Date:** 8/23/2013

**Revised Date:** 8/23/2022

#### Exposure Monitoring

- WFU EHS will periodically monitor faculty to determine their exposure to formaldehyde.
- EHS will periodically measure and accurately determine exposure to formaldehyde for faculty, staff, and students shown by the initial monitoring to be exposed at or above the action level, or at or above the Short Term Exposure Limit.
- If the last monitoring results reveal employee exposure at or above the action level, EHS will repeat monitoring of the faculty, staff, and/or students.
- Regulated areas where the concentration of airborne formaldehyde exceeds either the Time Weighted Average (TWA) or the Short Term Exposure Limit (STEL) will be posted at all entrances and access ways with signs bearing the following information:

**DANGER  
FORMALDEHYDE  
IRRITANT AND POTENTIAL CANCER HAZARD  
AUTHORIZED PERSONNEL ONLY**

#### Special Handling Procedures and Storage Requirements

##### PROPERTIES



Liquid. Mixes with water. Corrosive. Combustible.

##### SAFE STORAGE WITH OTHER CLASSIFIED CHEMICALS



**x** — Must not be stored together  
**0** — May be stored together with specific preventions  
**+** — May be stored together

Additional Lab Specific Special Handling/Storage Procedures

#### Waste Disposal



WAKE FOREST  
UNIVERSITY

## Standard Operating Procedure (SOP)



### FORMALDEHYDE, FORMALIN AND PARAFORMALDEHYDE

**Effective Date:** 8/23/2013

**Revised Date:** 8/23/2022

- Excess FORMALDEHYDE and all waste material containing FORMALDEHYDE must be placed in a container labeled with the following “**HAZARDOUS WASTE (FORMALDEHYDE, FORMALIN OR PARAFORMALDEHYDE)**”.
- Contact EHS at x3427 for hazardous waste removal.

#### Emergency Numbers

Fire and Medical Emergencies	x5911 (911 on cell phone)
Environmental Health and Safety	x3427
FastMed Urgent Care (employees)	(336) 714-4616
Student Health (students only)	x5218
Poison Control	800-222-1222

#### First Aid

## INGESTION

- For advice, contact a Poisons Information Center or a doctor at once.
- Urgent hospital treatment is likely to be needed.
- **If swallowed do NOT induce vomiting.**
- If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration.
- Observe the patient carefully.
- Never give liquid to a person showing signs of being sleepy or with reduced awareness; i.e. becoming unconscious.
- Give water to rinse out mouth, then provide liquid slowly and as much as casualty can comfortably drink.
- Transport to hospital or doctor without delay.

## EYE CONTACT

If this product comes in contact with the eyes:

- Immediately hold eyelids apart and flush the eye continuously with running water.
- Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.
- Continue flushing until advised to stop by the Poisons Information Center or a doctor, or for at least 15 minutes.
- Transport to hospital or doctor without delay.
- Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.

## SKIN CONTACT

If skin or hair contact occurs:

- Immediately flush body and clothes with large amounts of water, using safety shower if available.
- Quickly remove all contaminated clothing, including footwear.
- Wash skin and hair with running water. Continue flushing with water until advised to stop by the Poisons Information Center.
- Transport to hospital, or doctor.

## INHALATION

- If fumes or combustion products are inhaled remove from contaminated area.
- Lay patient down. Keep warm and rested.
- Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures.
- Apply artificial respiration if not breathing, preferably with a demand valve resuscitator, bag-valve mask device, or pocket mask as trained. Perform CPR if necessary.
- Transport to hospital, or doctor, without delay.
- Inhalation of vapors or aerosols (mists, fumes) may cause lung oedema.
- Corrosive substances may cause lung damage (e.g. lung oedema, fluid in the lungs).
- As this reaction may be delayed up to 24 hours after exposure, affected individuals need complete rest (preferably in semi-recumbent posture) and must be kept under medical observation even if no symptoms are (yet) manifested.
- Before any such manifestation, the administration of a spray containing a dexamethasone derivative or beclomethasone derivative may be considered.



FORMALDEHYDE, FORMALIN AND PARAFORMALDEHYDE

Effective Date: 8/23/2013

Revised Date: 8/23/2022

Spill and Accident Procedures

Eliminate ignition sources. Prevent from entering drains. Contain spillage by any means. Absorb with dry agent. Stop leak if safe to do so. Dispose of this material and its container at hazardous or special waste collection point. This material and its container must be disposed of in a safe way. To clean the floor and all objects contaminated by this material, use water.

