


ARKANSAS STATE UNIVERSITY EHS
LABORATORY CHEMICAL STANDARD OPERATING PROCEDURE

Chemical Name: Formaldehyde/Formalin/Paraformaldehyde **CAS #:** 50-00-0/30525-89-4

Hazard Classification: Health Hazard

Location Used:	Principal Investigator:
Processes for Which Chemical Is Used:	

HAZARDS AND PROTECTION

<p>Hazard Information</p> <ul style="list-style-type: none"> • Carcinogen • Reproductive and Organ Toxicity • Acute Oral, Dermal and Inhalation Toxicity • Skin Corrosive • Flammable liquid (in methanol) 	
<p>Routes of Exposure</p> <ul style="list-style-type: none"> • Ingestion • Inhalation • Eye absorption • Skin Absorption 	<p>If exposed by:</p> <ul style="list-style-type: none"> • Inhalation: Remove to fresh air. If difficulty breathing, give oxygen. Do not attempt mouth to mouth if victim inhaled formaldehyde. • Ingestion: Do not induce vomiting. • Eye or skin: Rinse affected area for 15 minutes
<p>Symptoms of Exposure</p> <ul style="list-style-type: none"> • Headache, dizziness, tiredness, nausea and vomiting, possible digestive tract perforation • Rash, itching, swelling, difficulty breathing, tingling of extremities, chest pain, muscle pain, flushing 	<p>Medical attention is required for all routes of exposure.</p>
<p>Exposure Limits</p> <p>All exposure limits are Time Weighted Averages (average exposure over an eight-hour day) unless otherwise indicated.</p>	<p>OSHA PEL: 0.75 ppm (2 ppm STEL) ACGIH TLV: 0.1 ppm (0.3 ppm STEL) NIOSH REL: 0.016 ppm (0.1 ppm ceiling, 20 ppm IDLH)</p>
<p>Engineering Controls</p> <ul style="list-style-type: none"> • Chemical Fume Hood 	<p>Never open formaldehyde, formalin or paraformaldehyde outside of a chemical fume hood.</p>

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<p>Administrative Controls</p> <ul style="list-style-type: none"> • Designated area sign • Particularly hazardous substance label 	<ul style="list-style-type: none"> • Post designated area sign before each use. • Label containers of formaldehyde, formalin and paraformaldehyde as a health hazard. • Use as small a quantity as possible.
<p>Personal Protective Equipment</p> <ul style="list-style-type: none"> • Gloves • Safety glasses or splash goggles • Lab coat 	<p>Nitrile gloves are protective against formaldehyde in aqueous solution. If formaldehyde is in methanol solution (very typical), change gloves every 15 minutes (nitrile gloves are pervious to methanol after a relatively short period of time). Change gloves immediately if a spill on gloves is observed. Wash hands after use.</p>

OTHER SAFETY INFORMATION

<p>Transportation</p>	<p>Follow guidance given in the laboratory safety manual for transport of chemicals.</p>
<p>Storage</p> <ul style="list-style-type: none"> • Can be stored with flammable materials in separate secondary containment tray. • Keep tightly sealed • Store paraformaldehyde away from water. 	<p>Incompatible materials include:</p> <p>Strong oxidizing agents, strong bases, nitriles, acids, isocyanates, acid anhydrides, metals, acid chlorides.</p>
<p>Spill/Accident Procedures</p> <p>For all spills:</p> <ul style="list-style-type: none"> • Wear two pairs of nitrile gloves • Evacuate the immediate area <p>Exposure:</p> <ul style="list-style-type: none"> • If anyone exposed requires emergency medical attention, dial 911 (or 9-911 from landline). • Follow procedures outlined in laboratory safety manual. 	<p>Small spills (less than 100 mL in a hood or 10 mL outside a fume hood): 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. If the spill is solid paraformaldehyde, soak the absorbent material with methanol (not water) and place on the spill. Wait until the solid paraformaldehyde is saturated, then scoop into a waste container. Contact EHS for collection and disposal. Clean area where paraformaldehyde had been with soap and water.</p> <p>Large spills (greater than 100 mL in a hood or 10 mL outside a fume hood): 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.</p>
<p>Waste Disposal</p>	<p>Waste formaldehyde must be collected for disposal.</p> <p>Empty bottles of formaldehyde may be rinsed and thrown in the dumpster.</p>

