








CHEMICAL WASTE GUIDELINE

Formalin Solutions in Laboratories

Examples: Formaldehyde – paraformaldehyde solutions

Identification	Description	Formalin is a commonly used aqueous solution which typically contains some methanol as a stabilizer. Many laboratories at Temple University (TU) use formalin solutions and paraformaldehyde solutions as part of their research and clinical activities. Commonly used in tissue fixing and preservation, and as an organic chemical reagent. The most widely used formaldehyde-containing chemical at the University is 10% neutral buffered (NB) formalin, which contains 4% formaldehyde.
	Classification	Regulated Chemical Waste
	Potential Hazards	 <ul style="list-style-type: none"> Refer to chemical specific Safety Data Sheet (SDS) for specific hazard information.
Waste Minimization	Opportunities	<ul style="list-style-type: none"> Minimize the volume of formaldehyde/formalin waste generated by eliminating any unnecessary dilution. Do not mix with other waste streams. Substitute ethanol, or a commercial fixative like CarosafeR or FormalternateR in place of formaldehyde/formalin for storage of biological specimens.
Supplies	The following supplies are available through Environmental Health and Radiation Safety (EHRS). To order these supplies, call (215) 707-2520 or complete the online Chemical waste request form	
	Supply	Description
		<p>Temple University “Hazardous Waste Tag”</p> <p>The Temple University Hazardous Waste Tag must be affixed on all waste containers used to collect formalin waste.</p>
	<p>Spent formalin waste must be collected in a closed container. The following containers may be used:</p> <ul style="list-style-type: none"> 5-gallon white plastic carboy 4-liter white poly bottle 	

SAA Management	Accumulation Limits	A maximum of 20 gallons of formalin waste may be accumulated in a laboratory (Satellite Accumulation Area (SAA).)
	Personal Protective Equipment	 EYE PROTECTION  CHEMICAL GLOVES  LONG PANTS  CLOSED TOED SHOES ARE REQUIRED Note: Always refer to glove manufacturer for chemical specific glove type.
	Collection Procedures	<ul style="list-style-type: none"> • Select an appropriate waste collection container. • All commingling of formalin waste must be conducted in an operating chemical fume hood. • Refer to chemical labels or Safety Data Sheets (SDS) for incompatibilities • Keep container closed when not adding waste. • Do Not Overfill - Leave a 1" headspace. • Begin to complete the hazardous waste tag as soon as any material is placed in the selected container. • Waste solutions containing specimens or tissue samples must be separated before disposal. The specimens may be considered biohazardous waste.
	Storage	<ul style="list-style-type: none"> • Collection containers must be stored in designated Satellite Accumulation Areas. • Collection container must be properly segregated and stored in secondary containment. • Keep containers tightly closed in a dry, cool, and well-ventilated area. • Store the collection container so that the hazardous waste tag is clearly visible.
Disposal	Removal	<ul style="list-style-type: none"> • Complete the TU Hazardous Waste Tag. Ensure that the: <ul style="list-style-type: none"> ○ Generator information is accurate. ○ Applicable Waste Stream is checked- Formalin. ○ Applicable Hazards are identified- Corrosive & Toxic. ○ All chemical constituents and amounts (%) are included on the tag. • Make sure that the tag is affixed to the container and the container lid is closed tight. • When the container becomes ¾ full, request a waste collection from EHRS by: <ul style="list-style-type: none"> ○ Completing the online chemical waste collection request form.
	Special Collection Request	Contact EHRS to arrange for large collections of spent formalin or containers of spent formalin.
Other	Breakage/Leakage	Contain the leak and soak up with inert absorbent material. Place all spill pads, absorbent in a sealed bag and tag it as hazardous waste. Request disposal through EHRS.
	Emergencies	<p>In the event of an emergency – Call campus safety at (215) 214-1234. EHRS [(215) 707-2520] should also be notified of the incident.</p> <p>Direct contact – Flush contaminated area with copious amounts of water (eyewash or safety shower) and then seek medical attention.</p> <p>Spill – Refer to the spill management sheet for general spill cleanup. Contact EHRS for additional assistance or guidance.</p> <p>Fire – ABC dry powder fire extinguisher should be adequate.</p>
	Questions	Contact Environmental Health and Radiation Safety (EHRS) at (215) 707-2520.