

Standard Operating Procedures for Toluene

#1 Process (if applicable)	Toluene is used as a solvent for histological procedures Dehydration and clearing of fixed tissues for embedding in paraffin, epoxy resin, or preparation for scanning electron microscopy. Clearing mounted sections prior to coverslipping. <i>(Note: All use of benzene compounds is strictly regulated by occupational health regulation WAC 296-849.)</i>
#2 Chemicals and Hazards	Toluene is a highly flammable liquid, with vapors being able to travel long distances to an ignition point. <ul style="list-style-type: none"> • Toluene is harmful if inhaled, affecting both the nervous system and the kidneys. • Toluene is primarily an irritant if exposure occurs, with little evidence of effects due to long term, low level exposures. • The OSHA Permissible Exposure Limit for Benzene is <u>200 ppm over an 8 hour day.</u> For more information, refer to <i>Prudent Practices in the Laboratory</i> (National Academies Press) http://www.nap.edu/read/4911/chapter/14#404
#3 Personal Protective Equipment (PPE)	Splash goggles, nitrile gloves, and full-length lab coats are recommended when handling Toluene. Respiratory protection is generally not practical in most situations, with reliance on engineering controls most acceptable.
#4 Environmental/Ventilation Controls	Benzene-containing solutions should be dispensed and used only in a properly operating fume hood. Syringe purging should also be done in the fume hood.
#5 Special Handling Procedures & Storage Requirements	Mixing and dispensing done in an operating fume hood with all sources of ignition turned off (hot plates, burners, etc.). Benzene stored in metal safety cans or glass bottles (1 liter maximum) as much as possible. Transported in spill-proof carriers. Benzene is stored in a flammable cabinet, separate from acids, bases, and oxidizers. The flammable cabinet is located _____.
#6 Spill and Accident Procedures	Try to stop the spill if it is on-going. Remove all sources of ignition from the spill area. If splash on skin occurs, wash immediately with soap and water and remove any contaminated apparel while washing. Call 911 in the event of a spill beyond lab staff capabilities. Use absorbent pads or vermiculite to clean up small fume hood spills or to dike larger spills. Absorbent pads are stored in <u>CD186A and CD186D</u> . If a spill of more than ___ ml of benzene occurs outside the fume hood, vacate the room, close the door and call 911. If the quantity of benzene is in solution and does not easily evaporate, a spill cleanup by a contractor could be obtained by calling EH&S at 206-543-0467. Otherwise, the benzene could be allowed to evaporate. After clean-up or evaporation, room air must be monitored by EH&S prior to re-occupancy.
#7 Waste Disposal	For spills: place used absorbent in metal can with leak-proof lid. Over-pack with additional absorbent. Seal can. For all waste, label with Hazardous Waste Label, accumulate according to requirements, and send in Chemical Collection Request or Routine Pickup request, both available on the EH&S website .
#8 Special Precautions for Animal Use (if applicable)	
<input type="checkbox"/> YES: Blocks #9 to #11 are Mandatory	

Particularly hazardous substance involved?	_ NO:	Blocks #9 to #11 are Optional.
#9 Approval Required	Users must receive specific physical and health hazard information and safe laboratory work practices training from their supervisor. Representative breathing zone air sampling shall be taken to ensure that exposures do not exceed regulated levels. (Contact EH&S for additional information.)	
#10 Decontamination	Immediately wash with soap and water.	
#11 Designated Area	Use in fume hood or coverslipping area as much as possible. Store in flammable cabinet beneath fume hood in CD 186A, or in CD 186F.	
Name:		Title:
Signature:		Date: