

JOB SAFETY ANALYSIS

Safety Information for the University of California, Berkeley

ENVIRONMENT, HEALTH & SAFETY – EMERGENCY RESPONSE RESPONDING TO RELEASE OF FLAMMABLE MATERIAL

TASK	HAZARDS	CONTROLS
<p>1. Determining the identity of the material, concentration, amount released, and the area of contamination. Determine if there are sources of ignition or energy, other chemicals and physical hazards at or near the release area.</p>	<p>Ignition of material which can cause injury, distress and/or damage of property.</p>	<p>De-energize equipment, tool or sources of ignition or energy that are present nearby.</p> <p>If possible and if material is not water reactive, spray a mist of water from a distance to lessen danger from flammability.</p>
	<p>Exposure to the material and other hazardous materials nearby.</p>	<p>Unless imperative, assess at a safe location close to the contaminated area. If area is an enclosed room, make sure of the proximity of exit route in case material ignites or flares up during assessment.</p> <p>If imperative to approach the contaminated area, go to Task 2 before proceeding.</p> <p>Avoid contact with material and other chemicals that may be present nearby.</p>

		Injury from physical hazards present in the assessment area.	Avoid contact with physical hazards that are near assessment point. Free assessment location of physical hazards that are in the way. If possible select an assessment location that is free of hazards.
	2. Select and don the appropriate PPE.	Inadequate protection of selected PPE.	Determine appropriate PPE through thorough discussion with knowledgeable persons. Double-check adequacy of PPE selected with a known expert.
		Selection of a defective PPE (with tears, unsealed seams, holes, etc.)	Before donning, make sure the PPE selected is free from defects. Discard defective PPE and select one free from defects and in right size to avoid tearing and ripping.
		Injury when donning due to loss of balance, slipping or falling.	Don PPE at a comfortable position; sit if possible. Obtain assistance from a buddy if sitting is not possible when donning; stay away from physical hazards to prevent injury and damage to PPE.
	3. Monitor atmosphere based on Task 1 monitoring for flammability or combustibility first, before any other determination.	Exposure to the material released and other chemicals that may be in the vicinity of release.	Wear PPE with adequate protection and free from defects.
		Physical injury due to hazards present at the monitoring area.	If possible, remove physical hazards from monitoring area. Perform monitoring while staying clear of physical hazards present; work around the hazards present.

	<p>4. Determine the extent of the contamination; look for all contaminated areas and surfaces including equipment and furniture nearby.</p>	<p>Exposure to the material released and other chemicals that may be in the vicinity of release.</p>	<p>Wear PPE with adequate protection and free from defects.</p> <p>PPE should not impair vision and should be comfortable enough so as not to restrain movement or damage PPE when searching for contaminated areas and surfaces.</p> <p>Release or contaminated area should be provided with enough lighting to enable responders to find even small quantities and spots of contamination.</p>
	<p>5. Neutralize released material and/or absorb it. Apply vapor barrier if material is flammable.</p>	<p>Exposure to material released and other chemicals that may be present nearby.</p>	<p>Wear appropriate and undamaged PPE.</p> <p>Even if donned with PPE, avoid contact with any chemical present. Start applying neutralizer or absorbent from the edge of the perimeter of contaminated area.</p> <p>When starting this task, work on a small area first to confirm that neutralizer or absorbent chosen has the correct efficacy, particularly if working with an unknown that is suspected to be flammable or combustible.</p> <p>Ensure that sufficient supply of response material and supplies are within reach of responders.</p> <p>While working in the contaminated area, avoid touching exposed skin, such as your neck, scalp, etc.</p> <p>Avoid contact with open containers, such as pans or Petri dishes, while working in the area of contamination.</p>

		<p>Injury due to physical hazards present, lose of balance, tripping, slipping or ignition of material if flammable.</p>	<p>If possible, work around the physical hazards present or remove physical hazards from contaminated area. If necessary, decontaminate these hazards first before removing them from the area.</p> <p>If not possible to remove them, work carefully around physical hazards, equipment and furniture present in the area of contamination.</p> <p>When taking hazards off the contaminated area, follow proper lifting and moving of heavy things; avoid twisting when carrying a heavy load.</p> <p>Remove sources of energy and ignition present before working at the area of contamination.</p> <p>If sharps are present, use tongs to pick them up and put these in appropriate sharps containers.</p> <p>Work with a buddy so one can watch out for the other's safety and ensure safe work practice during response.</p>
	<p>6. Search for more contaminated areas and repeat process until all contaminated areas and surfaces are found. Repeat Task 5.</p>	<p>Refer to Hazards 5a and 5b.</p>	<p>Perform Controls 5a-1 to 5a-6 and 5b-1 to 5b-6.</p>
	<p>7. Perform final cleanup covering all areas and surfaces of contamination discovered , neutralized and absorbed.</p>	<p>Refer to Hazards 5a and 5b.</p>	<p>Perform Controls 5a-1 to 5a-6 and 5b-1 to 5b-6.</p>
	<p>8. Package generated waste (used neutralizer, absorbents, towels, rags, etc) and label the waste containers appropriately.</p>	<p>Exposure to the material released and other chemicals that may be in the vicinity of release.</p>	<p>Wear appropriate and undamaged PPE.</p> <p>While working in the contaminated area, avoid touching exposed skin, such as your neck, scalp, etc.</p>

<p>Other Information: JSA for transportation of hazardous waste, JSA for heavy lifting Contributors: Environment, Health & Safety Created: June 2005 JSA Library Number: EHS-ER-05</p> <p>For more information about this JSA, contact the <i>Office of Environment, Health and Safety</i> at UC Berkeley, 317 University Hall #1150, Berkeley, CA 94720-1150 (510) 642-3073 • http://www.ehs.berkeley.edu</p>		Injury due to physical hazards present, lose of balance, tripping, slipping.	<p>If possible, work around the physical hazards present or remove physical hazards from contaminated area. If necessary, decontaminate these hazards first before removing them from the area.</p> <p>If not possible to remove them, work carefully around physical hazards, equipment and furniture present in the area of contamination.</p> <p>Work with a buddy so one can watch out for the other's safety and ensure safe work practice.</p> <p>If sharps were picked, label sharps container and handle properly.</p>
	9. Transport waste packages to a secure area such as the HMF.	Hazards attendant to transportation of packages that may be bulky and/or heavy.	Follow the JSA for transportation of hazardous waste.
	<p>Required Training:</p> <ol style="list-style-type: none"> 1. Training 1. Proper use of SCBA, if necessary. 2. Training 2. Proper use of respirator. 3. Training 3. Proper handling of bulky and/or heavy loads. 	<p>Required Personal Protective Equipment (PPE):</p> <ol style="list-style-type: none"> 1. Full or half face respirator. 2. SCBA as the optimum protection. 3. Closed-toed shoes; use those with steel toes if contaminated area dictates. 4. Chemically-resistant body cover with appropriate gauntlet gloves. 	