

## MERCURY RELEASE EMERGENCY RESPONSE

\* Exposure to mercury vapor through inhalation can cause chronic health effects. Other health effects can be acquired through skin contact and ingestion. Double check PPE and perform controls to avoid exposure and long-term health effects.

TASK	HAZARDS	CONTROLS
<p>1. Assess the spill for volume and perimeter of contaminated area</p>	<p>Exposure to mercury liquid or vapor by contact and inhalation</p>	<p>Avoid entry into spill site until after meeting with knowledgeable site contact and planning response protocol based on assessment.</p> <p>Determine the activities at the spill site when release happened and immediately after to determine if the spilled mercury was tracked outside of spill site.</p> <p>Determine if there are substances in the vicinity of the release area that may react with mercury.</p> <p>Determine if there are other chemicals that responders can be exposed to during the cleanup.</p> <p>Determine if sharps, abrasive objects and other physical hazards are present at the release site that can damage PPE during the cleanup.</p> <p>Assess the release area ventilation to more accurately determine appropriate and adequate PPE.</p> <p>Thoroughly plan entry and control of release area during the tailgate safety meeting conducted outside the release area.</p>

	2. Monitor atmosphere and surface.	Exposure to mercury liquid by contact and mercury vapor by inhalation; tracking of spilled mercury to surfaces outside of spill area	<p>Wear appropriate PPE while monitoring and use a strong flashlight to assist in locating contaminated areas.</p> <p>Wear PPE that fits so that it does not impair vision.</p> <p>Provide enough light to the spill area to be able to see even the tiny mercury droplets. A strong flashlight angled properly is good to use.</p>
	3. Select and done the appropriate PPE.	Inadequate protection	Select the PPE based on the spill assessment in Tasks 1 and 2.
		Slipping and falling while donning PPE	<p>Suit up in an area free of obstruction, debris and other physical hazards.</p> <p>Don foot protection while seated or with a “buddy” assisting.</p>
	4. Select equipment and supplies appropriate for the cleanup and decontamination.	Exposure to mercury vapor from equipment from previous cleanup not adequately decontaminated.	Monitor exhaust of mercury vacuum before use to ensure that the equipment is clean.
		Inadequate cleanup and decontamination supplies	Ensure adequate supply of cleanup and decontamination supplies within reach near cleanup area.
5. Site cleanup and decontamination – use mercury vacuum to cleanup mercury and decontaminate area with appropriate material and supply. Use mercury hand pump for small releases.	Inhalation exposure to mercury vapor and/or mercury liquid.	<p>Monitor the vacuum exhaust or the outside of the assembled hand pump before starting the clean-up to make sure that the mercury vapor at the exhaust and the breathing zone is below 0.05 mg/m<sup>3</sup>.</p> <p>During the cleanup, periodically monitor the vacuum exhaust or around the hand pump to ensure either is free of unhealthy levels of mercury vapor (0.05 mg/m<sup>3</sup>).</p>	

		Skin contact with mercury vapor or liquid.	<p>Wear appropriate body PPE (including hand and foot protection).</p> <p>Monitor surface visually with the aid of a strong light beam from a good flashlight while approaching release area. Vacuum or pick up mercury drops with a hand pump; decontaminate nearby surfaces that do not contain mercury but register significant mercury vapor readings. Use appropriate decontaminating material such as Mercon spray or wipes. Perform final cleanup with disposable rags and /or paper towels.</p> <p>Avoid touching unprotected skin during cleanup such as face and neck.</p>
		Contact with other chemicals around the spill area.	<p>Avoid contact with open containers such as uncapped bottles, open pans or Petri dishes located in or around the cleanup area; work around these hazards carefully.</p> <p>If possible, carefully set aside any open containers in the cleanup area.</p>
		Sharp injury or PPE damage if sharps are present inside or near cleanup area.	<p>Pick up sharps with tongs, collect them in an appropriate sharps container and set the container outside the cleanup area.</p> <p>If PPE is damaged, leave cleanup area immediately to don clean and non-damaged PPE before returning to cleanup area.</p>
	6. Decontamination of spill area after collecting the released mercury liquid	Inhalation and/or contact exposure to mercury	<p>Do not remove PPE or if necessary, change your PPE outside of spill area and bag the used PPE as mercury debris.</p> <p>Search for more mercury drops and continue monitoring for mercury vapor in contaminated area and perform controls as appropriate.</p>

	Contact with a chemical(s) that is in or near the cleanup area	If the chemical(s) is released, leave the area and assess the release and plan appropriate response outside of the release area.  If chemical(s) is contained, determine and use corresponding PPE for the chemical(s). Leave the area to don upgraded PPE if necessary
7. If other spill areas and contaminated equipment are discovered, repeat Tasks 1 through 6.	As you repeat Tasks 1 through 6, identify the hazard(s) present.	Perform the corresponding controls as listed above as you go from Tasks 1 to 6.
8. Perform final cleanup; continue to monitor for mercury liquid and/or vapor.	Discovery of more mercury liquid or observance of high levels of mercury above the allowable limit.	Perform the cleanup process for the discovered mercury liquid or vapor starting with Task 5.  Continue wearing the appropriate PPE.  Continue monitoring for mercury vapor and visually checking for liquid mercury until none are found and vapor levels are below the allowable limit.  Remove PPE.
9. Transport generated waste to a secured collection site.	Inadequate controls	Perform JSA for transport of hazardous materials/wastes.
<b>Required Training:</b>	<b>Required Personal Protective Equipment (PPE)</b>	
<ol style="list-style-type: none"> <li>1. Proper use of mercury hand pump</li> <li>2. Proper use of mercury vacuum cleaner and care of filters after cleanup</li> <li>3. Familiarity with protocols in having used vacuum cleaner after cleanup</li> <li>4. Proper use of the mercury vapor monitors (Jerome and Bacharach)</li> <li>5. Avoidance of mercury exposure during cleanup</li> </ol>	<ol style="list-style-type: none"> <li>1. Eye protection – safety glasses with side shields of goggles</li> <li>2. Double nitrile gloves, outside gloves with gauntlet</li> <li>3. Protective suit impervious to mercury (for large mercury spills)</li> <li>4. Slip resistant booties that are impervious to mercury</li> <li>5. Full or half face respirator with mercury cartridges</li> </ol>	
<b>Other Information:</b> <b>Contributors:</b> <b>Created:</b> <b>JSA Library Number:</b>	Emergency Response: EH&S Specialist Ave Tolentino; EH&S Specialist Gary Bayne April 2003 EHS-ER-33	

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