

# MERCURY THERMOMETER REDUCTION

Version: January 2020

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Research Safety

Office of Research

UNIVERSITY OF GEORGIA

## I. Purpose & Scope

Beginning in February 2018, the University of Georgia launched a campus initiative to phase out the use of elemental mercury thermometers. Due to the element's toxicity and costly remediation, efforts are being made to replace these thermometers with an environmentally friendly equivalent. Though there are many other types of mercury containing equipment: barometers, manometers, sphygmomanometers, float valves, electrical switches, light bulbs, etc., most of these guidelines will only regulate thermometers. The intent is to provide recommendations on safe alternatives, proper disposal of mercury thermometers through UGA's Universal Waste Program, or guidelines on the appropriate spill kit the lab must maintain if mercury containing equipment remain necessary for research. Appendix I of this SOP also includes a quick reference guide for cleaning up small mercury spills.

## II. Mercury Initiative Details

- A. All laboratory spaces will voluntarily dispose of intact elemental mercury thermometers through the UGA Universal Waste Program or by contacting the Office of Research Safety (ORS) and requesting a pick-up.
  - i. To dispose of a thermometer through Universal Waste, secure the thermometer to prevent breakage and request a Universal Waste pick up.
  - ii. To dispose of a thermometer through ORS, secure the thermometer to prevent breakage, then call the main office at 706-542-5288 to request a pick up. Please include the building where you are located and the room where the thermometers can be found.
  - iii. PLEASE NOTE: All broken mercury thermometers must be properly remediated, bagged, and all mercury contaminated materials must be disposed of through the UGA Hazardous Waste Program. **The Office of Research Safety should be contacted if a mercury thermometer has broken in laboratory equipment or if the spill is more than a few drops.**
- B. Any laboratory in the process of closing will not be permitted to transfer mercury containing equipment to another lab without the permission of ORS. The accepting lab must have the appropriate spill kit in place before transfer can be approved.

- C. Any laboratory that requires mercury thermometers must purchase a mercury spill kit and post detailed instructions on how to safely clean spilled mercury. After the spill is contained, ORS should be notified to verify the absence of mercury vapors. For continued use of mercury thermometers, the PI must sign an agreement declaring that they assume remediation responsibilities of any broken thermometer, while being stored or used (see Appendix II). The PI and Lab Manager are also responsible for training all staff on how to safely remediate small mercury spills. Move the affected person to an area with fresh air. If symptoms persist, get medical attention.
- D. Any laboratory that continues to use mercury containing equipment (barometers, manometers, sphygmomanometers, float valves, etc.) must sign an agreement declaring that they will contact ORS should one of these instruments break and a mercury spill occur. These items contain more than a trace amount of mercury and lab staff should not attempt to remediate on their own.

### III. Mercury Alternative and Spill Kit

Item	Brand	Vendor	Estimated Price	Catalog #	Details
Non-Mercury Thermometer	Fisher	Central Research Stores	~\$5.50	CRS Cat # 951825	Total Immersion, Range: -20/110C
Adc Mercury Spill Kit	Cen-Med	UGAmart	\$18.00	980SK	Adequate for small mercury spills

*Please note: These prices and product numbers are subject to change.*

### IV. Contacts

Environmental Safety Division: 706-542-5801  
Office of Research Safety: 706-542-5288

## APPENDIX I: CLEANING UP MINOR MERCURY SPILLS

### Elemental Mercury Spills



Elemental mercury is a shiny liquid that is often found in thermometers, switches, and pressure gauges. Exposure to liquid mercury and its vapor is toxic. Spills of greater than a few drops must be reported to Research Safety at (706) 542-5288.

**Laboratory personnel should be able to clean up small spills of mercury (a few drops or less) with the appropriate supplies.**

#### When a Spill Occurs

- Isolate the area and keep lab personnel away. Remember mercury beads tend to scatter
- Inform others in lab of the spill
- For spills of a few drops or less, use a mercury spill kit
- For larger spills or if lab personnel are unable to perform a cleanup, call 911 and request assistance

#### Spill Control Supplies

Use either a mercury spill kit or make one using the following;

- Nitrile gloves
- Zinc flakes
- Eye dropper
- Plastic bags
- Index Cards
- Flashlight



#### Spill Cleanup Procedure

- Wear gloves
- Turn off lights and shine flashlight along the spill surface to locate mercury beads
- Use index cards to push beads together and an eyedropper or pipette to pick them up
- Place mercury into a plastic bag
- Sprinkle zinc flakes on the spill area and moisten with water
- Use index cards etc. to clean up the mercury zinc mixture
- Place the mercury zinc mixture, gloves, broken thermometer etc. into bag(s) and zip shut
- Place bag(s) into a secondary container and seal shut
- Label the container as "Hazardous Waste, Toxic, Mercury Spill Materials"

- ❖ Never touch mercury
- ❖ Never use a household vacuum to clean up spills
- ❖ Never use a broom

For mercury spills in sinks, carpet, or equipment, call the UGA Office of Research Safety at (706) 542-5288 for assistance

## APPENDIX II: MERCURY THERMOMETER/EQUIPMENT INITIATIVE OPT-OUT FORM

This lab requests to use elemental mercury containing thermometers and/or equipment for the purpose of research. Though the University of Georgia has made efforts to phase out elemental mercury, the research conducted in this lab space requires its use. This lab assumes all responsibility for safely remediating all broken elemental mercury thermometers. An Emergency Mercury Spill Kit will be purchased by this lab in case of accidental release of mercury from a broken thermometer. Guidelines on proper disposal and usage of the Emergency Mercury Spill Kit must be posted in a prominent place within the lab.

If the spill is a result from a larger piece of equipment breaking or small releases into other types of equipment (incubators/refrigerators), immediately contact Research Safety for an emergency spill clean-up response.

Principal Investigator: \_\_\_\_\_

Department: \_\_\_\_\_

Building / Room: \_\_\_\_\_

PI Signature: \_\_\_\_\_

Date: \_\_\_\_\_