Suggested Action Levels for Indoor Mercury Vapor in Michigan

The Michigan Department of Community Health (MDCH) has been asked to provide guidance regarding the acceptable concentrations of elemental mercury vapor in indoor air in various settings subsequent to remediation work. Large mercury spills, those that equal or exceed one pound, are reportable to regulatory agencies. However, MDCH believes that even small spills, like from a fever thermometer, can be a hazard to human health depending upon the sensitivity of the individuals exposed, the length of exposure, the room size, temperature, and frequency of air changes and other variables. The following is generic guidance that is intended to be an instrument for use during a cleanup and for clearance levels afterwards. The clearance concentration numbers may be adjusted higher or lower depending upon the specific situation that is encountered. Users of this guidance are welcome to call the MDCH Toxics and Health Hotline (1-800-MI-TOXIC, or 1-800-648-6942) to consult with staff regarding particular situations. For example the clearance or pre-occupancy level for a classroom, after all source mercury has been removed and the premises ventilated, would be different for an adult education class versus a day care class.

In 2000, the Agency for Toxic Substances and Disease Registry (ATSDR) provided the MDCH with guidance to use in a utility investigation involving mercury-bearing pressure regulator spills in residences and other structures. MDCH has reviewed the best available and most current scientific data and information and continues to concur with this ATSDR guidance. The concentration values offered in this document are not regulatory requirements but rather health-based recommendations meant to prevent hazards to health following a mercury spill. They do not address nor supersede regulated occupational situations.

Please contact MDCH staff with any questions or concerns regarding this guidance via the Toxics and Health Hotline (1-800-648-6942).

The following table is consistent with the health-based recommendations provided to MDCH by ATSDR in their 2000 guidance:

Indoor Air Concentration (µg/m3)	Application of Recommended Level	Discussion	Test Method
≤ 1.0	This is the acceptable level for re-occupancy of a residential structure ***after all source mercury has been cleaned up*** following a spill.	An indoor level less than 1 µg/m3, as measured by high quality data ***after a thorough cleanup of all source mercury*** and adequate post-cleanup ventilation is considered safe and acceptable by MDCH. It is based on the assumption the occupants may be pregnant women and or children under the age of 6 years (those most sensitive to the effects of mercury) and are exposed via inhalation of vapor.	NIOSH 6009, or equivalent
≥ 10	This is the action level for making the decision whether a resident may stay in the home during the spill remediation.	This concentration approaches levels at which exposed individuals may experience subtle health effects. Although disruptive and stressful, relocation is recommended if air concentrations equal or exceed this value. Values greater than 1 but less than 10 µg/m3 may require a site-specific plan to minimize exposure to concentrations greater than 1 µg/m3 during spill remediation.	Real-time air monitoring instrument
≥ 10	This is the action level for determining whether contaminated household items such as clothing, books, furniture should be appropriately disposed of, or can possibly be safely retained.	The item(s) should be encapsulated in an air tight enclosure such as a plastic bag or sheet plastic taped shut and warmed to room temperature or higher for at least 2 hours. The vapors are captured in the headspace should be measured through a small opening in the enclosure. It is recommended that items contaminated above this level be considered for proper disposal.	Real-time air monitoring instrument
≤ 3.0	This is the action level for making the decision for re-occupancy of a non-residential setting where mercury is not usually handled.	Those persons found in non-residential (such as school children and staff, church attendees, shoppers in stores, clinic patients, etc.) are not expected to occupy the setting for a great length of time. The recommended level assumes a thorough cleanup of all source mercury and adequate post cleanup ventilation.	NIOSH 6009, or equivalent