



V. HEAVY METALS: Airborne Lead and Mercury Vapor

A. Airborne Lead

Indoors, the chief source is paint. Lead levels in paints for interior use have been increasingly restricted since the 1950's, and are now virtually lead free. But many older houses may still have coat after coat of leaded paint covered with peeling non-lead paint. In these circumstances, lead dust and fumes can permeate the air and affect both adults and children.

REGULATION LEVELS:

The Threshold Limit Values for Chemical Substances and Physical Agents & Biological Exposure Indices (TLVS & BEIs) indicate the allowable amount for a working day of 8 hours (Time-Weighted Average -TWA) for lead is 0.05 mg/m³.

TESTING:

When testing for lead paint, all interior rooms, the exterior sides, and the outside property around the unit should be inspected.

XRF: the recommended method for testing a unit is the high-energy K-Shell readings from a portable x-ray Fluorescence (XRF). XRF results are in units of milligrams per square centimeter. An average of three readings is recommended. Each reading should be approximately 15 seconds with a new source.

Paint sampling: Paint samples may be collected and sent to a laboratory for analysis. Paint samples should be collected from a one square inch area.

REMEDIAL ACTION:

Department of Housing & Urban Development (HUD) has developed a lead paint guidance document that details state-of-the-art protocol, from the identification and characterization of the hazard through the abatement of any hazard, clearance, and re-occupancy standards.

Response action to the findings of lead paint in a sample depends on the condition, type, and accessibility of the material. Repair, removal, or isolation of the lead paint containing material depends on the laboratory findings and evaluation of the environment it is in. Refer to Western Regional Lead Training Center handbook (see references) and other lead paint guides for typical abatement strategies including removing and sealing.

B. Mercury Vapor

A 1990 report detailed elevated levels of mercury in persons exposed to interior latex (water-based) paint containing phenylmercuric acetate (PMA). PMA was a preservative that was used to prolong the product's shelf life.

The EPA eliminated the use of mercury compounds from indoor index paints at the point of manufacture as of August 1990, with the requirement that paints containing mercury, including existing stock to be labeled for external use only. Then in September 1991 PMA was no longer allowed in exterior paint either. However, latex paint containing hazardous levels of mercury may still be on the store shelves or in homes where they were left over.

REGULATION LEVELS:

The Threshold Limit Values for Chemical Substances and Physical Agents & Biological Exposure Indices (TLVS & BEIs) indicate the allowable amount for a working day of 8 hours (Time-Weighted Average -TWA) for mercury is 0.025 mg/m³.

TESTING:

Detector Tubes: This is a relatively simple method for determining gas concentrations. They are usually calibrated in ppm for easy interpretation. There are different tubes to detect different gases, in this case it would be mercury vapor. Pumps are used for drawing air through the tube. Each tube requires a set volume of gas to be drawn through the pump in order to insure detection if present. Any change in color within the tube is a detection of mercury. The length of the color streak is an indication of concentration.

REMEDIAL ACTION:

Mercury vapor along with liquid mercury is harmful if not regulated and should be taken care of by a professional if levels are above what is recommended by environmental safety specialists.