

WEC, NJEA, HSN Alert

Mercury Hazard to Staff and Students from Rubber-like Floors in Schools



The Problem

Floors contain mercury: Rubber-like polyurethane floors using 1,000 to 2,000 parts per million (ppm) of phenyl mercuric acetate (PMA) catalyst have been installed in school multipurpose rooms, gyms, cafeterias, auditoriums, stages, and indoor and outdoor tracks since the 1960s.

Floors emit mercury vapor at room temperature: PMA breaks down and releases odorless, colorless mercury vapor. The floors and items that have been in contact with them emit mercury vapor indefinitely. Exposures are worse if floors are damaged or deteriorated, in hot rooms with poor ventilation, no outdoor air being pulled in, or no air conditioning.

Mercury vapor inhalation and skin absorption are health hazards, especially toxic to children and fetuses: The health effects of mercury are diverse and include damage to the nervous system, lungs, and kidneys. See ATSDR *Mercury Quick Facts for School Nurses* for details. www.atsdr.cdc.gov/mercury/docs/11-229617-H-508_SchoolNurse.pdf

Recommended Actions

Identify suspect floors: Polyurethane floors are rubber-like, water-resistant and may have been tinted any color. They are usually one-piece and poured in place but sometimes pieced.

Test bulk samples of the floors: The only reliable way to determine whether a floor contains mercury is to collect several small, full-thickness bulk samples for analysis by an accredited laboratory using EPA Method 7471A.

Measure airborne mercury: If floor bulk sampling results are above 1 ppm, a representative number of full-day, breathing zone air samples should be collected in the room for analysis by an accredited laboratory using NIOSH Method 6009. To simulate a worst-case exposure scenario, windows and doors should be closed, the ventilation system turned off for 24 hours, and the room heated as hot as it may get on a hot day. This may be above 90 F.

Solutions

Prevent installation of new mercury catalyst floors: If a new rubber-like floor is being considered for installation, a written statement and chemical analysis should be obtained from the manufacturer proving that it does not contain a mercury catalyst.

Do not cover or seal floors: Attempting to encapsulate, cover or seal a mercury-containing floor may not be effective and may create more contamination and cost.

Limit mercury exposures: Measures including keeping the room cool and well ventilated may be able to limit mercury exposures. Ongoing air sampling in each season will be necessary.

Remove mercury-containing floors using precautions: If air samples are above 60 nanograms of mercury vapor per cubic meter of air (ng/m³), removal of the floors will be necessary. During removal, the floors will release substantially higher amounts of mercury, so trained contractors must use precautions to protect themselves and the school from being contaminated.

For More Information

New Jersey Work Environment Council, WEC: <https://njwec.org/2017/02/mercury/>

New Jersey Education Association, NJEA:
www.njea.org/alert-mercury-hazard-staff-students-rubber-like-floors-schools/

Healthy Schools Now Coalition, HSN:
<https://njwec.org/take-action/campaigns/healthy-schools-now/>

