Methylene Chloride Causes Death of Three MI Bathtub Refinishers

Since 2006, three bathtub refinishers have died in Michigan and since 2000 at least 13 refinishers have died nationwide due to overexposure to methylene chloride-based strippers. In Michigan, two refinishers were using Tal-Strip II Aircraft Coating Remover and one refinisher was using Klean-Strip Premium Stripper. Tal-Strip II contains 60%-100% methylene chloride (MC), and Klean-Strip contains 80%-90% MC. None of the Michigan refinishers used appropriate respirators, eye or hand protection or local exhaust ventilation. The two refinishers using Tal-Strip II painted the tub and the refinisher using Klean-Strip sprayed the tub. All refinishers were found dead in the bathroom, leaning over the tub. The bathroom doors were closed.

IN ORDER TO PREVENT SIMILAR INCIDENTS IN THE FUTURE

Do not use MC-based strippers. Use alternative stripping methods, such as sanding or substitute non-MC-based strippers (e.g. www.removepaints.com/OxyStrip_paintstripper.aspx www.ecoprocote.com/www.m-tc.com/index.cfm). Non-MC-based strippers have hazards. Read and follow MSDSs.

Typical bathtub refinishing work practices using a MC-based stripper will result in MC airborne levels that greatly exceed the allowable OSHA/MIOSHA methylene chloride air levels. If you are inspected, you will be cited for violation of the standard.

If using a MC-based stripper, at a minimum you must do the following to protect yourself from being overcome by the vapors - these actions may not be enough to protect you from MC’s long-term health effects:

- Establish fresh makeup air and local exhaust ventilation. Fresh air: Place a fan in a window or doorway. Local Exhaust: Attach ductwork to another fan. Place the ductwork in the tub. Place fan end at window or door to exhaust MC vapors to the outside of building. Ceiling fans alone are insufficient.
- Wear a tight-fitting pressure-demand full-face air supplied respirator when applying and removing the MC-based stripper. Dust masks and cartridge respirators DO NOT protect you.
- Leave the room after MC stripper application. Keep fresh air and local exhaust fans running and windows and doors open.
- Use butyl rubber or polyvinyl alcohol (PVA) gloves. Latex or nitrile gloves DO NOT protect you.
- Implement safe work practices such as: add a tool handle extender to minimize leaning into the tub.

DID YOU KNOW?

- MC is considered a cancer-causing chemical.
- An 8-hour permissible exposure to MC is 25 ppm. For 15 minutes, permissible exposure is 125 ppm. You are likely exposed to levels in the thousands!
- MC is heavier than air. When not exhausted, vapors will be highest in the tub area but also throughout the bathroom, potentially reaching deadly levels.
- MC can be absorbed through your skin.
- You are overexposed to MC before you can smell it.
- In addition to a direct toxic effect, MC is changed in your body to carbon monoxide which can kill you.
- You may be exposed to other harmful substances needing control, including disiocyanates, epoxy components, organic solvents, and acids. Control ignition sources if using flammable solvents.
- You must comply with all OSHA/MIOSHA standards for MC. Hazard Communication, Respiratory Protection and Personal Protective Equipment.

MSU Occupational and Environmental Medicine: www.oem.msu.edu/
MIOSHA Standards: www.michigan.gov/mioshastandards
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