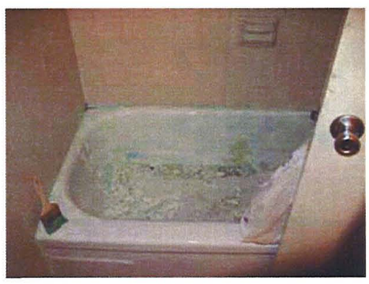
MICHIGAN

Fatality
Assessment &
Control
Evaluation

Prevention through comprehensive research and investigation

INVESTIGATION/RESEARCH **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.



Tub painted with Tal-Strip II

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 diisocyanates, 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
MIOSHA Consultation, Education and Training Division: Phone (517) 322-1809
NTP: 12th Report on Carcinogens: http://ntp.niehs.nih.gov/
OSHA Safety and Health Topics: Methylene Chloride. http://www.osha.gov/SLTC/methylenechloride/

HA #14

TO REPORT A NEW WORKPLACE FATALITY TO MIOSHA

1.800.858.0397

MICHIGAN FATALITY ASSESSMENT & CONTROL EVALUATION

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