

**UNIVERSITY OF ROCHESTER  
ENVIRONMENTAL HEALTH & SAFETY**

<b>Policy No.: LS011</b>	<b>Approved by: Carolyn Place, CIH, CSP</b>
<b>Title: Methylene Chloride Exposure Compliance</b>	<b>Date: February 27, 2025</b>
<b>Revision No.: New</b>	<b>Page 1 of 6</b>
<b>Prepared by: Katherine Root, CIH, CSP</b>	

**I. PURPOSE**

This procedure establishes how the University of Rochester (UR) complies with the requirements of the Environmental Protection Agency (EPA) Methylene Chloride Regulation under section 6(a) of the Toxic Substances Control Act (TSCA), as well as the Occupational Safety and Health Administration (OSHA) Methylene Chloride Standard (29CFR 1910.1052).

On May 8, 2024, the EPA published the Methylene Chloride (MC) standard under TSCA. While many of the compliance requirements of the EPA and OSHA regulations are similar, the EPA occupational exposure limits have regulatory authority and will be complied with for all UR operations. This procedure will outline UR compliance with the **EPA Workplace Chemical Protection Plan (WCPP)**. Initial exposure assessment must be completed by May 5, 2025.

**II. PERSONNEL AFFECTED**

All employees, students, and visitors (visiting scientists, consultants, contractors, etc.) that work with or have the potential for exposure to methylene chloride (CAS: 75-09-2) as part of their work duties. This includes mixtures containing  $\geq 0.1$  percentage methylene chloride by weight.

**III. DEFINITIONS**

**EPA Action Level** - An airborne concentration of 1.0 parts per million (ppm) MC calculated as an 8-hour (hr) Time-Weighted Average (TWA). Exposure above the Action Level triggers additional compliance requirements.

**Existing Chemical Exposure Limit (ECEL)** - An airborne concentration of 2.0 ppm MC calculated as an 8-hr TWA. No employee shall be exposed to MC exceeding this level.

**EPA Short Term Exposure Limit (STEL)** - An airborne concentration of 16.0 ppm MC calculated as a 15 minute TWA. No employee shall be exposed to MC exceeding the STEL.

**Exposure Control Plan (ECP)** - A documented plan required by the EPA which outlines specific steps to comply with the WCPP.

**Methylene Chloride (MC)** - Chemical Abstracts Service (CAS) registry number: 75-09-2. Synonyms: Dichloromethane, DCM,  $\text{MeCl}_2$ .

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**Workplace Chemical Protection Program (WCPP)** - The EPA program to protect persons potentially exposed to methylene chloride in the workplace.

**Regulated Area** - An area where airborne concentrations of MC exceed, or there is a reasonable possibility they may exceed, the EPA occupational exposure limits. This area requires physical demarcation, restricted access and additional exposure controls as documented in the ECP.

#### **IV. RESPONSIBILITIES**

**Supervisor or Principal Investigator (PI):**

- Identify those employees who handle MC as part of their work duties.
- Assign required compliance training in MyPath
- Ensure that employees are made aware of the hazards associated with MC prior to beginning work. This includes a review of specific MC handling tasks, appropriate safe work practices and procedures, required personal protective equipment and / or additional exposure controls.
- Ensure that a Safety Data Sheet (SDS) is available for MC, including products, solutions, or mixtures  $\geq 0.1\%$  MC by weight.
- Ensure that MC handling tasks under their jurisdiction have been assessed by Environmental Health & Safety for potential exposure.
- Ensure adherence to the requirements of the UR Methylene Chloride ECP.
- Inform EH&S **prior to any changes** in processes, equipment, volumes or frequency of MC use in order to assess the anticipated change for compliance with the WCPP.

**Employees:**

- Complete specific Methylene Chloride training in MyPath
- Comply with the established safe work practices and procedures as documented in the ECP.

**Environmental Health & Safety (EH&S):**

- Maintain and administer this program.
- Perform initial exposure monitoring for MC to ensure that the ECEL and EPA STEL are not exceeded.
- Based on the initial exposure assessment, recommend exposure controls based on the Hierarchy of Controls, including:

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- Elimination / Substitution of MC with less hazardous substances.
- Engineering Controls, such as laboratory fume hoods, local exhaust ventilation, and process enclosures.
- Work Practice Controls, including utilizing and storing the minimal amount needed to complete the task.
- Personal Protective Equipment and / or Respiratory Protection,  
*NOTE: If respiratory protection is needed, a supplied-air respirator with full-face piece must be used with MC.*
- Document exposure controls in Exposure Control Plans. (Appendices to this policy).
- Review the UR chemical inventory system (Chematix / CampusOptics) quarterly to identify any new uses of MC.

**V. PROCEDURES**

**A. Health Effects:**

Overexposure to MC inhibits oxygen transport in the blood leading to less oxygen getting to critical areas of the body. Short-term acute effects include central nervous system (CNS) symptoms such as light-headedness, mental confusion, headache and unconsciousness. Lack of oxygen also puts stress on the heart. Cardiac effects may be increased in individuals who smoke. Additional symptoms may include nausea and tingling or numbness in the arms or legs. Death can occur at very high levels of MC exposure, such as, concentrations found with use in a confined space or spill situation. Exposure to airborne MC may cause irritation of the eyes and respiratory system. Skin and eye exposure to MC may cause irritation or damage.

Effects of long-term chronic exposure to MC may include CNS damage, as well as liver damage. MC is considered a probable human carcinogen based on animal data.

***MC has poor warning properties as the level at which MC odor can be detected in air is significantly higher than the EPA exposure limits.***

**B. Training:**

Training is required for all employees, students, and visitors assigned to workplaces where there is potential exposure to MC. For UR employees who work in laboratory settings specific MC training is required to be completed annually in MyPath.

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**C. Exposure Monitoring:**

An initial exposure assessment is required by the EPA WCPP for each operation where there is potential exposure to MC. For MC handling tasks that are similar, for instance, those carried out in chemistry labs, tasks and workers may be grouped into Similar Exposure Groups (SEGs). EH&S will conduct exposure monitoring that is representative of all employees performing similar tasks within that exposure group to ensure that exposure remains below the occupational exposure limits. If initial monitoring determines potential exposure above the exposure limits then actions required to mitigate those exposures will be documented in the ECP. Exposure controls may include engineering controls such as local exhaust ventilation, process enclosures or use of a chemical lab hood. Any area where airborne concentrations of MC exceed the occupational exposure limit requires the establishment of a "Regulated Area", associated hazard signage, restricted access, respiratory protection, and the implementation of feasible engineering and work practice exposure controls.

Periodic exposure monitoring will be conducted at a minimum every 5 years, but could be required as frequently as every 3 months depending upon the initial monitoring results. Additional monitoring may be conducted as needed after any change that may introduce additional sources of MC exposure or result in a change in exposure levels.

**D. Labels:**

All containers of MC, including solution  $\geq 0.1\%$  by wt., must be labeled with hazard warning information. Labels must comply with the Globally Harmonized System of Chemical Classification and Labeling (GHS).

**E. Medical Surveillance:**

If Exposure monitoring indicates exposure exceeding the OSHA Action Level (12.5 ppm as an 8-hr TWA) for more than 30 days per year, or exceeding the Permissible Exposure Limit (20 ppm, 8-hr TWA) or STEL (125 ppm as a 15-min TWA) for more than 10 days per year then UR will make medical surveillance available to affected employees.

The EPA WCPP does not include medical surveillance.

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**F. Safe Work Practices and Exposure Controls are outlined in the Exposure Control plan(s), Appendices to this policy.**

**G. Spills:**

Spills of MC  $\leq 10$  mL that occur **within a laboratory fume hood** can be classified as minor. It is not anticipated that minor spill cleanup will expose laboratory / clinical employees to significant additional exposure. Minor spills should be cleaned up immediately by staff wearing the appropriate personal protective equipment.

**ANY MC spill which occurs outside of a fume hood, or  $>10$  mL within a fume hood, shall be considered a Major Spill.** Major spill cleanup shall not be attempted by laboratory / clinical personnel. Contact Public Safety, 585-275-3333 or extension 13) to arrange for the University's Spill Response Team.

**VI. REFERENCES**

- *EPA Chemical Risk Evaluations Under TSCA*  
<https://www.epa.gov/assessing-and-managing-chemicals-under-tsca/ongoing-and-completed-chemical-risk-evaluations-under>
- EPA Fact Sheet: 2024 Final Risk Management Rule for Methylene Chloride Under TSCA  
[https://www.epa.gov/system/files/documents/2024-07/mecl-fact-sheet\\_0.pdf](https://www.epa.gov/system/files/documents/2024-07/mecl-fact-sheet_0.pdf)
- A Guide to Complying With The 2024 Methylene Chloride Regulation Under The Toxic Substances Control Act  
<https://www.epa.gov/system/files/documents/2024-07/mecl-compliance-guide.pdf>
- *OSHA Methylene Chloride Standard, 29CFR 1919.1052*  
<https://www.osha.gov/laws-regs/regulations/standardnumber/1910/1910.1052>
- *UR Employee Incident Reporting System*  
<http://www.safety.rochester.edu/SMH115.html>
- *UR Respiratory Protection Program*  
<https://www.safety.rochester.edu/ih/respiratoryprotection/respprogram.html>

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**VII. APPENDICES – To be added as exposure assessments are completed**

**VIII. REVISION HISTORY**

Date	Revision No.	Description
2/27/2025		New