**Dichloromethane Exposure Control Plan (ECP) Template**

How to Use This Template

Institutions:

* Complete these steps before distributing this template to users of DCM at your institution.
* Replace “Enter Institution Name” fields with the name of your institution.
* Replace “Enter Relevant Authority” fields with the person or entity responsible for approving this program. This will most likely be your Chemical Hygiene Officer or Chemical Hygiene Committee.
* Choose which version of the sections on Exposure Limits, Exposure Monitoring, and Regulated Areas are appropriate for your institution.
* Review the Engineering Controls section for alignment with your institution’s processes for testing, certification, and recordkeeping.
* Review the Emergency Procedures section for alignment with your institution’s procedures.
* Modify the “Institutional Responsibilities” noted in the “Compliance and Maintaining the Exposure Control Plan Template” section as appropriate for your institution.
* Delete the instructions to institutions after completing them and before distribution.

Users of Dichloromethane:

* Replace “Enter Procedure Name” fields with the procedure(s) a specific Exposure Control Plan applies to.
* Replace “Enter Location” fields with the location(s) a specific Exposure Control Plan applies to.
* Use the checkboxes to select the substitutes you have considered for DCM in your procedure(s), rationales for not switching to those, the engineering controls you use to reduce exposure to DCM, and the PPE you have selected.
* Record the conditions under which initial monitoring was performed in the Change Management section.
* Review and, as necessary, update this ECP every five years.
* Maintain records of this ECP, including documentation of your five-year review, in accordance with record retention requirements detailed in your institution’s Workplace Chemical Protection Program.

Exposure Control Plan

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# Common Language

## Roles and Responsibilities

**Environmental Health and Safety**: Responsible for writing and updating this Exposure Control Plan (ECP) template.

**PIs, Instructors, and/or Supervisors**: Responsible for completing the ECP for all activities involving dichloromethane (methylene chloride, DCM) and enforcing any ECPs applicable to their work area.

Refer to the University of Florida’sWorkplace Chemical Protection Program (WCPP) for further details on roles, responsibilities, and requirements.

## Elimination

Use of DCM is allowed under this Program as a laboratory chemical, ***add other monitored uses,*** and in waste operations to dispose of materials generated through other approved uses. These uses cannot be eliminated because of DCM’s unique chemical properties and in order to ensure results from ongoing experiments can be compared with previously-obtained experimental results. In accordance with EPA regulation, all uses not explicitly permitted under this Program shall be eliminated.

# Lab/Shop-Specific ECPs

[The template on the following two pages may be used to complete an ECP for specific uses of DCM. Each Principal Investigator (PI) and/or Supervisor is responsible for developing, reviewing, and approving ECPs for **all** procedures that use DCM in locations for which they are responsible. A single ECP document may cover more than one procedure so long as all control measures are consistent across all covered procedures.]

**Review Date: *Select Date* Approved By: *Enter name of Approver***

**This ECP covers safety practices to be followed for use of DCM as *Enter Procedure Name* in *Enter Location*. The use of DCM is subject to pre-approval by the Principal PI and/or Supervisor.  DO NOT USE DCM UNTIL YOU HAVE OBTAINED THE NECESSARY PRE-APPROVAL.**

## Substitution

The following substitutes have been considered for dichloromethane:

☐ 2-Methyltetrahydrofuran

☐ Cyclopentylmethyl ether

☐ Ethanol

☐ Ethyl acetate

☐ Isopropanol

☐ Methanol

☐ Methyl isobutyl ketone

☐ Methyl tert-butyl ether

☐ Toluene

☐ Other \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

They have been deemed inadequate for the following reason(s):

☐ Need to maintain reproducibility of established procedure

☐ Following established analytical method

☐ Undesirable cross-reactivity

☐ Poor match for polarity

☐ Poor match for density

☐ Boiling point too high

☐ Unacceptable fire hazard

☐ Unacceptable health hazard

☐ Other \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

## Engineering Controls

DCM will be used with the following engineering controls in place:

☐ Local Exhaust Ventilation (select all that apply)

☐ Fume hood

☐ Glove box

☐ Exhausted enclosure

☐ Snorkel

☐ Splash shield

☐ Other \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

If any engineering controls were selected and shall be used during DCM use, the proper installation, regular inspection, maintenance, and training on use must be documented.

☐ The lab maintains the controls and provides the following information on the installation, inspection, maintenance, and training: Enter information regarding installation, inspection, maintenance, and training

## Administrative Controls

All occupants of ***Enter Location*** shall review the WCPP and this ECP prior to entry and sign that they have received the information contained within and agree to abide by the training provided to them.

DCM is approved for use in ***Enter Location*** in \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

DCM is approved for storage in ***Enter Location*** in \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

Stop all use of DCM if any malfunction of the local exhaust ventilation device indicated above is suspected and contact EH&S.

Any PPE suspected of coming in contact with DCM must be changed immediately.

Regulated areas will be established by *each PI or Supervisor* in rare circumstances where monitoring has demonstrated that exposures to DCM are anticipated to exceed regulatory limits. These areas will be marked with signage that reads, in part:

Methylene Chloride Warning

Authorized Personnel Only

You may not enter these areas without first participating in specific training, and without supplied-air respiratory protection.

## Personal Protective Equipment (PPE)

DCM may only be handled while wearing the following PPE:

Eye Protection

☐ Safety glasses

☐ Goggles

☐ Face shield

☐ Other \_\_\_\_\_\_\_\_\_\_\_\_

Skin Protection

☐ Lab coat

☐ Apron

☐ Other \_\_\_\_\_\_\_\_\_\_\_\_

Hand Protection

☐ Nitrile gloves (Double gloved)

☐ Polyvinyl alcohol gloves

☐ LLDPE gloves

☐ Viton gloves

☐ Silvershield gloves

PIs, instructors, and Supervisors are responsible for providing PPE training in accordance with *the University of Florida’s* PPE program.

# Emergency Response

In the event that DCM is spilled outside of a containment device, it is expected that airborne concentrations will exceed regulatory limits.

Notify others in the area of the spill. Evacuate the location where the spill occurred. Call HazWaste at 352-392-8400 or 911. Report the spill to your Supervisor and to EH&S. Remain on-site (at a safe distance) to provide detailed information to first responders.

# Change Management

The PI and/or Supervisor who has approved this ECP is responsible for reviewing it annually, and for identifying any necessary updates to the exposure controls listed above. The PI and/or Supervisor is also responsible for ensuring all persons working under this ECP are properly implementing the exposure controls.

Exposure to DCM has been measured under the following conditions:

Quantity \_\_\_\_\_\_\_\_\_\_\_\_

Duration \_\_\_\_\_\_\_\_\_\_\_\_

Operating temperature \_\_\_\_\_\_\_\_\_\_\_\_

Ventilation controls \_\_\_\_\_\_\_\_\_\_\_\_

PPE \_\_\_\_\_\_\_\_\_\_\_\_

If the above quantities, experimental duration, or operating temperature are exceeded or if controls are reduced, EH&S must be notified, and will determine if additional monitoring is necessary and provide guidance on implementation of additional exposure controls.

# Compliance and Maintaining the Exposure Control Plan Template

The ECP shall be updated by the PI or Supervisor at least every 5 years. Additionally, the PI or Supervisor will follow institutional policies regarding non-compliance with this plan (e.g., via lab inspections and reporting, lab escalation policies, *etc*.). Each PI and/or Supervisor is responsible for ensuring lab personnel follow the protocols described in this plan and report any non-compliance to EH&S and conduct re-training for lab personnel.