

Alternative Solvents to Methylene Chloride

A table of suggested chemical alternatives for methylene chloride CAS # 75-09-2 (dichloromethane, DCM) has been created using previous literature for “alternative options to chlorinated solvents” in applications ranging from research to commercial use. This is meant to be a starting point for those who are looking to explore what options may be available to them as the University looks to incorporate the EPA’s new Methylene Chloride Rule. This document is intended for informational purposes only and is not a substitute for professional advice. Users should not rely solely on the information in this document and should consult with appropriate professionals for advice tailored to their specific circumstances. Before selecting an alternative solvent please consult with the manufacturers of the chemical and equipment it will be used with to ensure proper selection among other resources.

Application	Suggested Alternatives	Reference(s)
<u>Laboratory/Research</u>		
Chromatography	Mixed with Heptanes <ul style="list-style-type: none">• 3:1 EtOAc:EtOH*• EtOAc• Isopropanol Mixed with MTBE <ul style="list-style-type: none">• 3:1 EtOAc:EtOH*• MeOH	Convenient Guide to Help Select Replacement Solvents for DCM
Extractions, Purifications, and other chemical transformations	<ul style="list-style-type: none">• Dimethyl carbonate• EtOAc• MTBE• 2-MeTHF• Toluene	Chlorinated Solvents: Their Advantages, Disadvantages, and Alternatives Green Chemistry Tools to Influence Medicinal and Research Chemistry Greener Solvent Alternatives Evaluation of Alternative Solvents in Amide Coupling Reactions
<u>Commercial/Consumer Use</u>		
Paint Stripping Products	Suggested Active Ingredients <ul style="list-style-type: none">• Methyl acetate• dimethyl sulfoxide• thiophene	Effective Alternatives to DCM for Paint Stripping
Cleaning Applications (i.e. degreasing)	<ul style="list-style-type: none">• Aqueous cleaning solutions• modified alcohols	Safer Alternatives for Solvent Degreasing Alternatives to Halogenated Solvents

*3:1 EtOAc:EtOH is commercially available for purchase

The above chart is not exhaustive. Listed are further publications that can be referenced for additional alternatives to methylene chloride use in a variety of applications:

1. [Efforts to Replace Methylene Chloride in Pharmaceutical Process Chemistry](#)
2. [Green Chemistry Chemical Replacement Cross Reference Guide](#)