Recommended Alternatives for Methylene Chloride (DCM)

The following alternatives for DCM have been studied and proven to be effective in their respective applications. Notes on differences between the alternatives and DCM are included along with the studies that determined each solvent's efficiency.

DCM Application	Recommended Alternative	Notes	Source (DOI)
Extraction Solvent	EtOAc (top substitute for most applictations)	Different polarity to DCM Higher boiling point than DCM (77°C) Slightly higher miscibility with water than DCM Flammable (GHS Category 2)	10.1021/acs.jchemed.5c00106
	2-MeTHF	High extraction efficiency, low miscibility with water Higher boiling point than DCM (80°C) Flammable (GHS Category 2) FORMS PEROXIDES (Class B)	10.1021/acs.jchemed.5c00106
Chromatography (TLC and Column)	MeOH-CPME	Similar miscibility with water compared to DCM Flammable (GHS Category 2)	10.1039/c2gc36378j
	i-PrOH-EtOAc	Slightly higher miscibility with water than DCM Flammable (GHS Category 2)	10.1039/c2gc36378j
	MeOH-DMC	Higher miscibility with water than DCM Flammable (GHS Category 2)	10.1039/c2gc36378j
	20%/80% MeOAc/EtOAc	Blend of MeOAc and EtOAc may have closer chromatography data to DCM than the pure forms Flammable (GHS Category 2)	10.3390/separations8100172
Synthesis	EtOAc	Different polarity than DCM Higher boiling point than DCM (77°C) Flammable (GHS Category 2)	
Glassware Cleaning	Acetone	Readily dissolves organic substances Flammable (GHS Category 2)	

UNIVERSITY OF
South Carolina
Environmental Health and Safety