

## BURCO® DLM-8C

Emulsifier for Preparing d-limonene/Terpene Microemulsions

### BENEFITS AND FEATURES

- Produces clear stable microemulsions
- Microemulsions remain clear on dilution
- Increases detergency for both oily and particulate soils
- Alkyl phenol ethoxylate (APE) free

### TYPICAL APPLICATIONS

Burco DLM-8C is used to prepare clear d-limonene/terpene microemulsions that can be used for a variety of cleaning and degreasing applications. Burco DLM-8C is even effective on removing silicone from glass and metal surfaces at 5 – 30 % d-Limonene levels.

### TYPICAL PROPERTIES

Appearance at 25°C	Opaque, yellow to amber liquid
pH (1% aqueous)	9.5
Specific Gravity	0.990
Ionic Nature	Mildly Cationic
Activity, %	100
Density, lbs/gallon	8.24

## TYPICAL PROPERTIES

Appearance at 25°C	Clear yellow liquid
pH (1%)	6.5
Activity, %	90
Cloud Point, °C	>100
Viscosity, cP at 25°C	100
Density, lbs/gal	8.26

## FORMULATION GUIDELINES

- Clear microemulsions of 30% d-limonene and lower can be formed using the Burco DLM-8C:d-limonene ratio shown in the table below. Other concentrations of terpenes can be successfully microemulsified. The exact emulsifier level is to be determined experimentally.

### Blending Method 1

For the quickest result, combine Burco DLM-8C and the d-limonene. With good mixing, water should be slowly added to form the microemulsions. Mix until clear

### Blending Method 2

Alternatively, 50 weight % of the water can be added at once to the Burco DLM-8C/d-limonene blend, mixed well and followed by the remaining 50% of the water. Mix until clear.

### Blending Method 3

Alternatively, the required amounts of Burco DLM-8C and d-limonene can be mixed together well and post-added to the entire water charge with good mixing. Mix until translucent. Discontinue agitation. The product will clear upon standing. Note: this method requires the longest mixing time.

## Suggested Emulsifier Requirements for Various d-limonene Concentrations

% Burco DLM-8C	% d-limonene	Burco DLM-8C to d-limonene Ratio
1.5	1	1.5 to 1
4.2	3	1.4 to 1
7	5	1.4 to 1
14	10	1.4 to 1
24	20	1.2 to 1

- To avoid gelling, 30% d-limonene microemulsions can be made by adding a small amount of ethanol to the formulation. e.g. 30% d-limonene, 36% Burco DLM-8C and 5% ethanol. The required 29% water is slowly added with good agitation.
- Similarly, a 30% d-Limonene microemulsion can be made that is easily diluted to clear, stable microemulsions of 15, 10, 5, 3 and 1% active d-limonene. The formula is 30% d-limonene, 42% Burco DLM-8C and 5% ethanol. The required 23% water is slowly added with good agitation.

## **AVAILABILITY**

Burco DLM-8C is available in 53-gallon, open-head, poly drums (430 lbs), in totes, and in bulk.

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