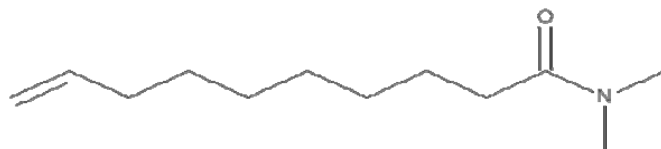


Product Name

### STEPOSOL<sup>®</sup> MET-10U

*Surfactant Solution to Solvent Replacement<sup>™</sup>*

Chemical Structure



Chemical Description

N,N-dimethyl 9-decenamide

CAS Registry No.

1356964-77-6

Features

STEPOSOL MET-10U is a unique unsaturated di-substituted amide derived from renewable sourcing from a biobased feedstock manufactured using Nobel Prize-winning metathesis technology. Among other properties, STEPOSOL MET-10U exhibits rapid, soil-penetrating kinetics, excellent solvency, heat and hydrolytic stability, and a low VOC content.

Applications

STEPOSOL MET-10U is effective in cleaning and removing soils in a variety of formulations.

Example applications include:

- All-Purpose Cleaner
- Oven Cleaner
- Metal Cleaner
- Graffiti Remover
- Heavy Duty Degreaser
- Grill Cleaner
- Paper Chemicals
- Permanent Ink Remover
- Adhesive Remover
- Rig Wash
- Coating Remover
- Paint Stripper

Typical Properties

Appearance at 25°C.....	Clear liquid
Molecular Weight (g/mol) .....	197
Amide, %.....	>97
Moisture, %.....	<0.5
Viscosity at 25°C, cps .....	4
pH, 5% in 1:1 IPA/H <sub>2</sub> O.....	8.0
Density at 25°C, g/ml (lbs/U.S. gal) .....	0.892 (7.4)
Color, Gardner .....	1 max
Color, APHA.....	20
Cloud Point, °C (°F) .....	-13 (8.6)
Pour Point, °C (°F) .....	-14.0 (6.8)
Freeze Point, °C (°F).....	-16.0 (3.2)
Melting Point, °C (°F) .....	-9.5 (12.5)
Boiling Point, °C (°F).....	297 (566)
Flash Point, PMCC °C (°F) .....	134 (273)
Autoignition Temperature, °C (°F).....	240 (464)
Vapor Pressure at 20°C, mm Hg.....	0.0025
Relative Evaporation Rate (ASTM 3539; Butyl Acetate = 1) .....	<0.01
Dielectric Constant at 25°C .....	16.09
Refractive Index at 20°C .....	1.46
Surface Tension (as is), dynes/cm.....	31.5
Critical Micelle Concentration, % .....	0.05
Draves Wetting Time, 0.1% in DI Water, seconds .....	4
Kauri-Butanol Value .....	>1000
RVOC, U.S. EPA, % .....	0

STEPOSOL<sup>®</sup> is a registered trademark of Stepan Company.

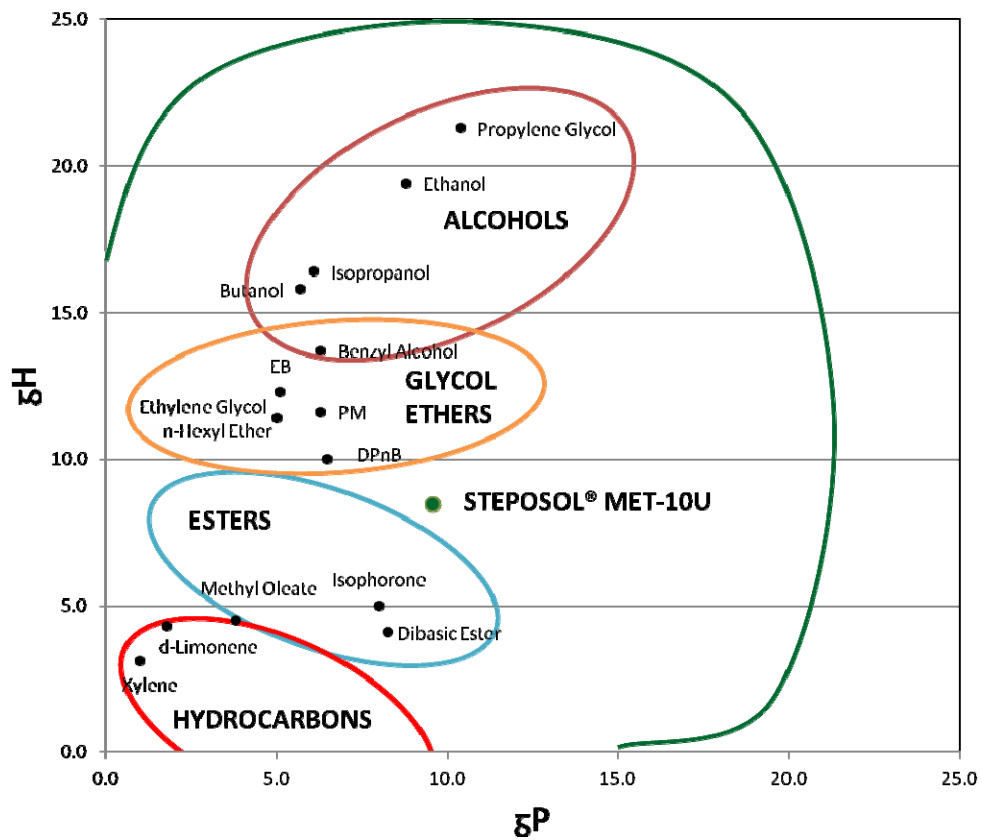


Typical Properties

Solubility	
STEPOSOL MET-10U in Water (25°C,% wt)	0.2
Water in STEPOSOL MET-10U (25°C,% wt)	19
Methanol	Soluble
Kerosene	Soluble
Xylene	Soluble
Hansen Solubility Parameters	D: 16.58, P: 9.58, H: 8.45

The Hansen solubility parameters are a key characteristic of solvency power used to predict if one material will dissolve another one to form a solution. As shown in the graph below, STEPOSOL MET-10U has a large Hansen space, overlapping the four solvent groups. This means that STEPOSOL MET-10U will dissolve a wide range of soils.

### Hansen Solubility Solvents Map



## Product Bulletin

Other data	DOT Classification ..... Non-regulated
Environmental Effects	This product is readily biodegradable.
Health Effects	STEPOSOL MET-10U was found to be slightly toxic orally (LD <sub>50</sub> = 550 mg/kg). Undiluted product may cause severe eye and skin irritation.
Storage & Handling	<p><u>Bulk Storage Information:</u> 316 and 304 stainless steel tanks are recommended. Temperatures up to 54°C (130°F) can be maintained for long periods of time without degradation of the product.</p> <p>Normal safety precautions (i.e. gloves and safety goggles) should be employed when handling STEPOSOL MET-10U. Contact with eyes and prolonged contact with skin should be avoided. Wash thoroughly after handling material. Consult the MSDS for additional information on properties and handling.</p> <p><u>Standard Packaging:</u> Available in drums (390 lb, 177 kg) or bulk.</p>
Clearances	<p>All components of STEPOSOL MET-10U are listed in the following countries; the registration number for the active ingredient is included in parentheses: United States (1356964-77-6). It is the responsibility of the end user to review the chemical control regulations for each country.</p> <p>Per the California Air Resources Board's (CARB) Consumer Product Rule, OTC Model Rule and Federal VOC Standards, STEPOSOL MET-10U is exempt from VOC limit requirements because it is a LVP-VOC (low vapor pressure VOC). All regulations define an LVP-VOC as a compound or mixture which meets one of the following criteria: 1) The compound has a vapor pressure of less than 0.1 mm Hg at 20°C; 2) the compound has more than 12 carbon atoms, or a mixture comprised solely of compounds with more than 12 carbon atoms, and the vapor pressure is unknown or 3) the compound has a boiling point greater than 216°C.</p>
Additional Safety Information	<p>A Material Safety Data Sheet is available upon request.</p> <p>Nothing contained herein grants or extends a license, express or implied, in connection with patents, issued or pending, of the manufacturer or others. The information contained herein is based on the manufacturer's own study and the works of others. The manufacturer makes no warranties, expressed or implied, as to the accuracy, completeness, or adequacy of the information contained herein. The manufacturer shall not be liable (regardless of fault) to the vendee's employees, or anyone for any direct, special or consequential damages arising out of or in connection with the accuracy, completeness, adequacy or furnishing of such information.</p>



**Corporate Headquarters**  
**Northfield, Illinois 60093, U.S.A.**  
**847-446-7500 847-501-2100 fax**  
**Website: [www.stepan.com](http://www.stepan.com)**

For Technical Service Call: Northfield, IL USA 800-745-7837  
Longford Mills, Canada 705-326-7329 • Mexico City, Mexico +52-555-533-1697  
Voreppe, France +33-476-505-100 • Bogota, Colombia +57-1-6362808  
Stalybridge, United Kingdom +44-141-338-9083  
Manila, Philippines +632-891-1708

