STEPOSOL® MET-10U

HOUSEHOLD CLEANING

Surfactant Solution to Solvent Replacement™. Replace Dibasic Ester, D-Limonene, and Glycol Ethers. Wipe away stuck on grease!

STEPOSOL® MET-10 utilizes the cleaning properties of a surfactant to outperform many common solvents in household cleaning. It fulfills the role of both a low HLB surfactant and a powerful solvent, which allows it to be highly effective against a broad range of soils. STEPOSOL® MET-10U can be used in formulations ranging from pH 3–12 while achieving viscosities from water-thin to gel. This metathesis-derived, nonionic surfactant is an unsaturated, short chain amide resulting from Stepan’s collaboration with Elevance Renewable Sciences and furthers Stepan’s effort to deliver renewable, naturally-derived products to the market.

With a Kauri-Butanol value greater than 1000, STEPOSOL® MET-10U provides superior cleaning performance while also being environmentally friendly due to a low vapor pressure, high boiling point, and Biorenewable Carbon Index (BCI) of 75%.

**PROPERTIES**
- MILD, LOW ODOR
- COLOR GARDNER: 1 MAX.
- SOLUBILIZES MANY SOILS
- LARGE HANSEN SOLUBILITY RADIUS
- FAST KINETICS FOR CLEANING
- ENHANCED SOIL REMOVAL AT NEUTRAL pH
- STABLE OVER WIDE pH RANGE (pH3-12)
- KAURI-BUTANOL VALUE: >1000
- pH, (5% in 1:1 IPA/H2O): 8.0
- VAPOR PRESSURE, 20 °C: 0.0025 mmHg
- BOILING POINT: 297 °C (566 °F)

**ADVANTAGES**
- BIORENEWABLE CARBON INDEX (BCI)= 75*
- LOW VAPOR PRESSURE-VOC (LVP-VOC)*
- NON-FIAMMABLE

**APPLICATIONS**
- ALL-PURPOSE CLEANER (APC)
- KITCHEN/EXHAUST HOOD DEGREASER
- DRIVEWAY/CONCRETE CLEANER
- OVEN CLEANER
- CAR WASH
- ENGINE DEGREASER

**PERFORMANCE IN AN ALL-PURPOSE CLEANER**
Gardner Straight Line Washability (ASTM D4488-95 A5)

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>% by Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deionized Water</td>
<td>97.90, 98.15</td>
</tr>
<tr>
<td>BIO-SOFT® N91-6 (Alcohol Ethoxylate, 6 moles EO)</td>
<td>0.40</td>
</tr>
<tr>
<td>BIO-SOFT® D-40 (Sodium Dodecylbenzene Sulfonate, 38% active)</td>
<td>1.00</td>
</tr>
<tr>
<td>STEPOSOL® MET-10U or Solvent</td>
<td>0.50, 0.25</td>
</tr>
<tr>
<td>Sodium Citrate</td>
<td>0.20</td>
</tr>
</tbody>
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*For additional information, please contact Stepan U.S. Technical Service at techserv@stepan.com or (800) 745-7837 and visit www.stepan.com/STEPOSOLMET.

Half the weight of STEPOSOL® MET-10U provides improved or comparable cleaning performance to the solvents noted.
**Oven Cleaning**

**Before**
- Commercial Oven Cleaner
  - (MEA, Potassium Carbonate, DB)
  - pH 12.5

**After Scrub**
- Commercial Oven Cleaner
  - (MEA, Potassium Carbonate, DB)
  - pH 12.5

**STEPOSOL® MET-10U Chassis**
- pH 11.5

**Chassis**
- Oven Soil: Whole milk (50%), flour (12.5%), lard (12.5%), whole egg powder (7.5%), Crisco® soy oil (7.5%), tomato soup (5%), and sugar (5%).
- Applied 10.5 grams of oven soil to cover dish, baked at 200 °C for 1 hour, recoated and repeated baking, cool. Sprayed 10 grams of cleaning product, soaked at room temperature for 2 hours, scrubbed 25 times with a damp sponge while using hard pressure.

**The STEPOSOL® MET-10U chassis outperforms the commercial oven cleaner after 2 hours contact time.**

**Spray Test Product Comparison**

**Before**
- 0.5% PnB, 0.2%
- MEA, pH 10
- 0.5% STEPOSOL® MET-10U, 0.2%
- Sodium Citrate, pH 7

**After**
- 0.50% D-Limonene, pH 7.5
- 0.25% STEPOSOL® MET-10U, pH 7.5
- 2.0% DB, 4.0% EB
- pH 13.5
- 3.0% STEPOSOL® MET-10U, pH 8.5

**STEPOSOL® MET-10U outperforms the commercial alkaline APC at a neutral pH, shows comparable performance to d-limonene at half the weight in a neutral APC, and outperforms the high solvent degreaser with half the weight.**

**Heavy-Duty Aqueous Degreaser**

**No. 1204**

**Ingredients**
- Deionized Water: 81.0%
- BIO-TERGE® PAS-8S: 10.0%
- BIO-SOFT® N1-7: 5.0%
- STEPOSOL® MET-10U: 4.0%

**Functionality**
- Diluent
- Hydrotrope
- Emulsifier
- Surfactant/Solvent

**Appearance at 25 °C**
- pH, as is: Clear liquid
- Viscosity at 25°C, cps: 5.0
- VOC (calculated), %: 0.4

**Household All-Purpose Cleaner**

**No. 1199**

**Ingredients**
- Deionized Water: 98.1%
- BIO-SOFT® N91-6: 0.4%
- BIO-SOFT® D-40: 1.0%
- Sodium Citrate: 0.2%
- STEPOSOL® MET-10U: 0.3%
- Preservative & Dye: q.s.

**Functionality**
- Diluent
- Emulsifier
- Anionic Agent
- Builder
- Surfactant/Solvent
- Additives

**Appearance at 25 °C**
- pH, as is: Clear liquid
- Viscosity at 25°C, cps: 7.5
- VOC (calculated), %: 0.0

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