

STEPOSOL® MET-10U

Surfactant Solution to Solvent Replacement™

STEPOSOL® MET-10U Formulation Guideline

This document provides guidelines on how to formulate household, institutional and industrial cleaners and removers with STEPOSOL MET-10U. Recommended amounts of STEPOSOL MET-10U with complementary components are provided. STEPOSOL MET-10U is stable at a pH 3 - 12 and is compatible with anionic, nonionic and cationic surfactants.

AQUEOUS FORMULATIONS

Optimal pH	Soil/Substrate Removed	Mechanism	% by weight MET-10U	Complementary Components
8.0	Grease, Food	Emulsify	0.25 - 1	Anionic surfactant, Nonionic surfactant, Builder, Hydrotrope
7.0 - 9.0	Floor (Dirt, Oil)	Emulsify	0.2 - 0.4	Nonionic surfactant, alkaline pH with Sodium Carbonate buffer
3.0 - 4.0	Daily Bathroom Cleaner (Soap Scum)	Emulsify	0.5	Nonionic surfactant, acidic pH with Citric Acid
10.0	Bathroom (Soap Scum, Body Oil)	Emulsify	1 - 2	Nonionic surfactant, alkaline pH with MEA*
11.5	Oven Soils; Baked-On/Aged Soils	Dissolves baked polymerized oils	5	BIO-SOFT® N91-6** (5% by weight) and MEA (5% by weight)
11.5	Latex Paint	Dissolves adhesive binders in latex paint	5	BIO-SOFT N91-6** (5% by weight) and MEA* (5% by weight)
11.5	Polyurethane, PVA, Acrylic Adhesive	Dissolves tackifiers used in adhesives	5	BIO-SOFT N91-6** (5% by weight) and MEA* (5% by weight)

Aqueous formulations can be thickened for cling to vertical surfaces using polymers such as high MW Hydroxyethyl Cellulose (Cellosize™ QP 100MH), or Carbopol® EZ-3, from 0.25% to 1.5%, depending on desired thickness.

NON-AQUEOUS FORMULATIONS

Optimal pH	Soil/Substrate Removed	Mechanism	% by weight MET-10U
8.0	Oil Based Paint/Primer	Dissolves soil	100%
8.0	Garage Floor Epoxy	Dissolves coating	100%
8.0	Varnish	Dissolves coating	100%

** Additional Replacements
Mid HLB (12-14) Nonionic
Surfactant, such as:
- BIO-SOFT N91-8
- BIO-SOFT EC-690

* MEA - Monoethanolamine
2-5 % by weight Sodium Metasilicate
can be used instead of MEA if desired,
but formulations must be titrated
down to a pH 11-12 prior to the
addition of STEPOSOL® MET-10U.

STEPSOL MET-10U FORMULATION GUIDELINES - BY SOIL TO BE CLEANED

SOIL	Aqueous Formulation, pH 3	Aqueous Formulation, pH 7-8	Aqueous Formulation, pH 8-10
Bath - Limescale, Soap Scum	<ol style="list-style-type: none"> 0.5% to 1.0% by weight STEPOSOL MET-10U 1% to 2% anionic, nonionic or cationic surfactant actives 1% to 6% by weight Citric / organic acid 	↓	↓
Light Kitchen Grease Countertop food soils Floor dirt and oils Wall dirt and markings	→	<ol style="list-style-type: none"> 0.25% to 1% by weight STEPOSOL MET-10U 1% anionic, nonionic, or cationic surfactant actives 0.1% to 0.5% by weight Sodium Citrate builder 	↓
Bath - Bathtub Ring	→		<ol style="list-style-type: none"> 0.5% to 1.0% by weight STEPOSOL MET-10U 1% to 2% anionic, nonionic or cationic surfactant actives 0.1% to 0.5% by weight Sodium Carbonate buffer

SOIL	Aqueous Formulation, pH 10-12	Aqueous Formulation, pH 10-12	Non-Aqueous Formulation
Baked Soils - Kitchen, Oven	<ol style="list-style-type: none"> 1.0% to 5.0% by weight STEPOSOL MET-10U 2% to 10% anionic, nonionic or cationic surfactant actives 2% to 4% by weight MEA* or Triethanolamine (TEA) 	↓	↓
Industrial Grease Adhesive Latex & Spray Paint Graffiti	→	<ol style="list-style-type: none"> 5.0% to 20.0% by weight STEPOSOL MET-10U 5% to 50% anionic, nonionic or cationic surfactant actives 2% to 5% by weight MEA* or TEA 	↓
Oil-Based Paint, Varnish, Floor Epoxy	→		100% by weight STEPOSOL MET-10U

* MEA is preferred over TEA, resulting in higher pH (11.5 vs 10)

For additional information, please contact:

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Please visit www.stepan.com/STEPSOLMET.

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Version: Feb 2015



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