



## Product Bulletin

Product Name	<b>BIO-SOFT<sup>®</sup> LD-190</b>
Chemical Description	Anionic/Nonionic Blend
CAS Registry No.	Triethanolamine Dodecyl Benzene Sulfonate ..... 27323-41-7 Nonylphenol Ethoxylate ..... 9016-45-9 Sodium Laureth Sulfate ..... 9004-82-4 Cocamide DEA ..... 68603-42-9
Applications	<p>BIO-SOFT LD-190 is a highly concentrated, proprietary blend of anionic and nonionic surfactants that can be used as a base for a wide range of dishwash, laundry and other household cleaning products covering the range from economy to intermediate formulations.</p> <p>Formulations based on BIO-SOFT LD-190 are mild to the hands, give long-lasting flash foam and have favorable cleaning power. BIO-SOFT LD-190 is useful in making high solids products because of its superior solubility and tolerance to electrolytes and builders.</p>
Typical Properties	Appearance..... Clear yellow liquid      Color, Gardner ..... 4 max. pH, as is..... 8.3      Flash Point, PMCC, °C(°F)..... 41 (106) Solids, % by Wt..... 91      Density, g/ml (lbs/US gal)..... 1.053 (8.77) Pour Point, °C (°F)..... -15 (5)      Viscosity, cps at 25°C..... 338 Cloud Point, °C (°F)..... 52 (126)      RVOC, U.S. EPA, % (Ethanol)..... 5 Preservative..... Not required
Biodegradability	BIO-SOFT LD-190 is biodegradable. Detailed biodegradability statements are available upon request for each of the components in the blend.
Toxicity	BIO-SOFT LD-190 has not been tested specifically; however, the toxicity of the major components is well known. They are slightly toxic (oral LD <sub>50</sub> > 500-5,000 mg/kg bw), and cause mild to moderate skin and eye irritation at less than 10% active.
Storage & Handling	<p>It is recommended that BIO-SOFT LD-190 be stored in sealed containers kept in a well ventilated, cool, dry area away from sparks, fire, and open flame. Equipment should be grounded when transferring or using material. Gloves and safety goggles should be employed when handling BIO-SOFT LD-190. Contact with the eyes and prolonged contact with the skin should be avoided.</p> <p><u>Recommended Bulk Storage:</u> Tanks made of 316 stainless steel or fiberglass with corrosion liner is recommended. Gear pumps and piping should be 316 stainless steel.</p> <p><u>Recommended Drum Storage:</u> Store in closed containers in a cool, well-ventilated area, away from fire and open flames. BIO-SOFT LD-190 is cold storage and freeze/thaw stable, returning to its original state when warmed to 60°F.</p> <p><u>Standard Packaging:</u> BIO-SOFT LD-190 is available in drums (450 lb, 204 kg) and in bulk quantities.</p>
Clearances	<p>The components in BIO-SOFT LD-190 are listed in United States (TSCA), Europe (EINECS/ELINCS /NLP/Polymer), Canada (DSL), Australia (AICS), Korea (ECL), Philippines (PICCS) and China (IECSC).</p> <p>BIO-SOFT LD-190 is available in Kosher form.</p> <p>BIO-SOFT<sup>®</sup> and STEPANATE<sup>®</sup> are registered trademarks of Stepan Company.</p>



Formulating

Some light duty liquid detergent base formulations are listed in Table 1. To make these blends, BIO-SOFT LD-190 is added to the water and STEPANATE SXS; mix slowly to avoid forming a vortex which would create foam; the pH is adjusted by adding sulfuric acid. It is not necessary to neutralize the alkalinity of BIO-SOFT LD-190 when making laundry products. Then salt and urea are added and dissolved. When the desired viscosity is obtained, dye or fragrance can then be added.

TABLE 1  
BASE FORMULATIONS AND THEIR PHYSICAL PROPERTIES

INGREDIENTS, % WT.	ECONOMY DISHWASH	INTERMEDIATE DISHWASH	ECONOMY LAUNDRY
BIO-SOFT LD-190	10.9	21.9	9.6
Sodium Chloride	2.0	--	1.9
STEPANATE SXS	--	1.5	0.9
Water	79.6	76.6	78.3
Urea	8.0	--	9.3
<b>PROPERTIES</b>			
Solids, %	20.0	20.6	20.3
Viscosity, cps	165	185	130
pH, as is	7.2	7.3	8.4

All of the above formulations are clear and remain so at temperatures as low as 5°C (41°F). If frozen, the formulation will return to a clear, homogeneous liquid after thawing.

Additional  
Safety  
Information

A Material Safety Data Sheet is available upon request.

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