



# Flexisurf™ LDP

Sodium Lauriminodipropionate

## Overview

- 30% active Sodium Lauriminodipropionate in water
- Salt-free, multi-functional amphoteric surfactant
- Compatible with nonionic, anionic and cationic surfactants
- Provides exceptional foaming in hard or soft water
- Versatile surfactant for wetting, emulsification, solubilizing and emulsification in acid, neutral and alkaline formulations
- Efficient hydrotrope for coupling nonionic surfactants into strong electrolyte and high alkaline systems
- WERCS ID number: WPS1169714
- WERCS Validation number: 1169714
- INCI Name: Sodium Lauriminodipropionate
- CAS#14960-06-6/EINECS#239-032-7

## Applications

- Hard surface cleaners
- Concentrated Liquid, high foaming detergents (acid or alkaline)
- Personal Care formulations
- Industrial cleaners
- Inert ingredient in non-food pesticides
- Oil Field
- Electroplating

## Technical Information

Flexisurf LDP is a versatile amphoteric surfactant that contributes foaming, cleansing and solubilizing properties to formulations ranging from shampoos to oven cleaners. Effective in acidic, neutral and alkaline solutions, multi-functional LDP compatibilizes nonionic surfactants in high electrolyte formulations while contributing detergency and foam boosting, unlike simple hydrotropes.

Exceptional foaming, detergency, solubilizing and emulsification properties with compatibility in nonionic, anionic and cationic surfactant solutions suggest a wide range of applications such as in Personal Care formulations, Liquid Detergents, Household and Industrial Cleaners and in Industrial applications such as Mining, Oil Field and Electroplating.

## Formulary

Flexisurf LDP is a naturally derived product. With greater than 67% biorenewable carbon, Flexisperse LDP is an environmentally responsible ingredient for detergents and cleaners. Cost effective, LDP replaces and combines the properties of non-biorenewable olefin-based ingredients for enhanced performance.

## Typical Properties

PROPERTY	VALUE
Appearance	Clear, colorless to light yellow liquid
Odor	Mild
Ionic character	Amphoteric
Water solubility	Soluble
Active content, %	30.0±1.0
pH (10% aq.)	6 - 7
Density@25°C	1.05±0.04
Boiling Point	100°C
Flash point	Does not ignite below 100°C
Storage	Protect from freezing
Shelf life	12 months

## Packaging and Handling

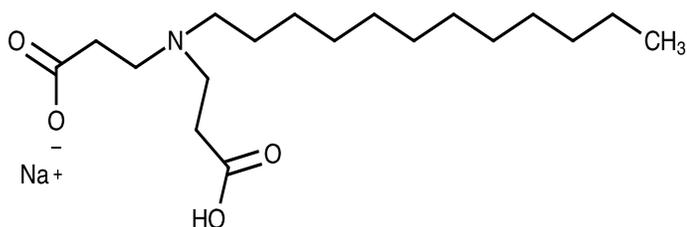
Flexisurf LDP is available in:  
275 gallon totes (Net Wt. 2250 lbs)  
55 gallon plastic drums (Net Wt. 450 lbs)  
5 gallon pails (Net Wt. 40 lbs).

Refer to the Safety Data Sheet (SDS) for information on the safe use, handling, and disposal of this product.

DOT Classification: Non-Regulated

Whether you're looking for a replacement product, or an ingredient for a specific attribute, give us a call. We can provide assistance based upon your particular formulation requirements and composition; please feel free to contact us.

*Please refer to back page for important information*



## Flexisurf LDP: Versatile solubilizing amphoteric surfactant

Amphoteric surfactants are broadly defined as heteropolar organic compounds having 2 functional (ionic) oppositely charged groups per molecule. In acid solutions, the surfactant functions as a cationic amine salt, where in alkaline solutions it functions as an anionic carboxylate salt. The cationic and anionic properties are balanced, in what's described as the isoelectric pH range, where an ion is formed that is simultaneously anionic and cationic.

The amphoteric nature of Flexisurf LDP allows its use in both anionic and cationic surfactant based products, for example anionic-based shampoos and cationic-based conditioners, and used to compatibilize mixed charge systems. The amphoteric nature and the unique specific structure of Flexisurf LDP suggests differentiating use in applications such as mining and oil field, where properties such as flotation correlate with an interaction of ionized properties of the surfactant with oppositely charged sites on the minerals partitioned through an association with the non-polar alkyl component properties.

When used as a solubilizing surfactant for use in agricultural herbicide, fungicide or insecticide formulations, Flexisperse LDP is exempt from the requirement of a tolerance when used as an inert ingredient for pre- and post-harvest uses and for application to animals at a maximum of 30% by wt. in pesticide formulations. This regulation eliminates the need to establish a maximum permissible level for residues of LDP, for example when use to solubilize glyphosate for control of morning glory and winter wheat. (Environmental Protection Agency, Office of Pesticide Programs, Environmental Protection Agency (EPA), Federal Register (2011), 76(24), 6335-6342).

**The following example formulations illustrate the flexibility of Flexisurf LDP:**

Non-Streak Glass and Surface Cleaner	
Ingredient	Wt. %
Water	to 100
Na <sub>4</sub> EDTA, 38%	0.1
Flexisurf LDP	0.4
Glycerin <sup>(1)</sup>	0.2
Monoethanolamine <sup>(2)</sup>	0.4
Ethyleneglycol monohexyl ether <sup>(3)</sup>	0.25
Isopropanol	1.5
Thetawet FS-8050 <sup>(4)</sup>	0.1
Dye/Fragrance	q.s.
Ready-to-Use Formulation notes: (1) provides slip for ease of wiping, (2) provides non-streak alkalinity for grease cutting performance, (3) moderates evaporation for streak resistance-consider hexanol or ethyleneglycol monobutyl ether as alternative, (4) for fast even wetting of surfaces.	
Grease Removing Liquid Laundry Concentrate	
Ingredient	Wt. %
Water	to 100
Sodium carbonate	1.0
Flexisurf EHS-40 <sup>(1)</sup>	8.0
Linear alcohol ethoxylate, C11, 7 ETO	10.0
Flexisurf LDP	9.0
Flexisperse 450N <sup>(2)</sup>	2.0
Tinopal CBS-X <sup>(3)</sup>	0.2
Triethanolamine/Citric acid	to pH 8-9
Ethanol	to reduce viscosity
Dye/Fragrance	q.s.
Formulation notes: (1) penetrating surfactant for grease release, (2) detergent polymer for anti-redeposition, (3) optical brightener.	

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