

DeTERGE LF Series

DeTERGE LF surfactants are a series of modified carboxylates recommended for use in formulated products containing caustic and alkaline electrolytes. They are not recommended for use in acid systems, with the exception of DeTERGE LF-7315.

Each **DeTERGE LF** product has been designed for use in systems containing specific concentrations of caustic and alkaline electrolytes.

The **DeTERGE LF** series of products are low foaming and may be used as the primary surfactant where excellent wetting and detergency are required. Their exceptional stability in highly alkaline systems may eliminate the need for a hydrotrope. They are biodegradable, non-phenolic, and phosphate free.

SPECIFICATIONS	DeTERGE LF-28	DeTERGE LF-531	DeTERGE LF-7315
Appearance @ 25°C	Clear	Clear	Clear
pH, 5% in DI water	8.0 +/- 1.0	9.0 +/- 1.0	8.5 +/- 1.5
% Solids	50.0 +/- 1.5	54.0 +/- 1.5	54.0 +/- 1.5
Gardner Color	1 max.	8 max.	10 max.
Density @ 25°C	~1.06 g/ml	~1.08 g/ml	~1.10 g/ml
Type	Anionic	Anionic	Anionic

SOLUBILITY: The **DeTERGE LF** surfactants are soluble in water, alcohols and glycols. They are dispersible or insoluble in solvents and oils.

TYPICAL PROPERTIES

- Excellent caustic and alkaline electrolyte stability
- Low foam
- Excellent surface tension reduction and fast wetting properties
- Hydrotrope for nonionics in highly alkaline systems
- May eliminate the need for hydrotropes or other surfactants in alkaline systems
- Good detergency
- All are approved for use as Inerts in non-food pesticide formulations

APPLICATIONS

- Low foam caustic and/or alkaline cleaners
- Mechanical dishwashing detergents
- Metal cleaners
- Alkaline plating baths
- Laundry detergents
- Steam cleaners
- Food plant cleaners
- Hard surface cleaners
- Paints and coatings
- Acid cleaners (DeTERGE LF-7315 only)
- Textile scouring
- Oven cleaners
- CIP cleaners
- Synthetic coolants

Continued

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APPLICATION DATA - DeTERGE LF SERIES @ 25°C

Table 1 shows the stability of DeTERGE LF surfactants at 3 – 5% by weight after storage in caustic and alkaline electrolyte solutions. The data reflects the minimum number of days that the products remained clear and stable.

Table 1. Days Stable in Caustic and Electrolytes @ 25°C

% ACTIVE	DeTERGE LF-28 5% by weight	DeTERGE LF-531 5% by weight	DeTERGE LF-7315* 3% by weight
10% NaOH	90	90	90
20% NaOH	0	90	90
30% NaOH	0	0	90
30% KOH	0	0	90
30% TKPP	77	90	90
10% SMP	42	21	21
20% Soda Ash	42	90	42
10% TSP	28	90	28

*Stability data for DeTERGE LF-7315 in a variety of acids is available on request.

Table 2. Cloud Points at 1% by Weight in °C

% ACTIVE	DeTERGE LF-28	DeTERGE LF-531	DeTERGE LF-7315
10% NaOH	<25	<25	70
20% NaOH	NS	37	75
30% NaOH	NS	NS	70

Table 3. Draves Wetting @ 25°C (in seconds) at 1% by Weight

% ACTIVE	DeTERGE LF-28	DeTERGE LF-531	DeTERGE LF-7315
10% NaOH	20	15	4
20% NaOH	NS	Instant	21
30% NaOH	NS	NS	57

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APPLICATION DATA - DeTERGE LF SERIES @ 25°C (continued)

Table 4. Foam Heights* (in mls) at 1% by Weight

% ACTIVE	DeTERGE LF-28	DeTERGE LF-531	DeTERGE LF-7315
10% NaOH			
Initial	0	0	91
2 minutes	0	0	48
20% NaOH			
Initial	NS	73	90
2 minutes		2	45
30% NaOH			
Initial	NS	NS	70
2 minutes			46

* Determined via modified Ross-Miles graduated cylinder shake test.

Dynamic Surface Tension

Dynamic surface tension of the DeTERGE LF series was determined with a SensaDyne QC6000 Surface Tensiometer. The products were tested at 1% by weight in deionized water at ambient temperature.

