DeTROPE SA-45

DeTROPE SA-45 is a 45% active sodium alkanoate in water. This anionic surfactant is a highly effective, multifunctional, low foam hydrotrope recommended for use in cleaners at pH above 7. It is chlorine stable and also exhibits wetting and corrosion inhibition properties.

SPECIFICATIONS

- **Appearance @ 25°C:** Clear, water white liquid
- **Color (Gardner):** 1 max.
- **% Activity:** 45.0 +/- 1.5%
- **pH (as-is):** 10.0 +/- 1.0

SOLUBILITY  DeTROPE SA-45 is soluble in water, alcohols and glycols. It is insoluble or dispersible in oils and solvents. It is also soluble in 10% sodium hydroxide, 20% potassium hydroxide, and in a variety of other electrolytes such as silicates, phosphates and carbonates.

TYPICAL PROPERTIES

- **Density @ 25°C:** ~1.05 g/ml
- **Excellent hydrotrope**
- **Chlorine stable (up to 5% active NaOCl)**
- **Excellent solubilizer for nonionics in alkaline and electrolyte systems**
- **Excellent alkali and electrolyte stability**
- **Contributes wetting properties**
- **Approved for use as inert in non-food pesticide formulations**
- **Readily Biodegradable**
- **Non-phenolic**
- **Practically non-foaming**
- **Provides corrosion inhibition on steel**

APPLICATIONS

- **Alkaline cleaners & detergents**
- **Low foam alkaline systems**
- **High pressure alkaline spray wash**
- **Chlorine based cleaners**
- **Automatic dish liquids & detergents**
- **High pressure metal cleaner**
- **Low foam spray vac detergents**
- **Low foam metal cleaners**
- **Textile mercerizing**
- **Industrial detergents**
- **Pesticide formulations**

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**Foam Height Properties of DeTROPE SA-45**

The foaming properties of DeTROPE SA-45 were determined via modified Ross-Miles, graduated cylinder shake test. The foam heights are presented in the following charts compared to sodium xylene sulfonate (SXS-40) and are reported as millimeters of foam present initially, at 30 seconds, at 60 seconds and after 2 minutes.

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Hydrotrope Cloud Point Properties of DeTROPE SA-45 (continued)

To determine hydrotroping capabilities, a series of cloud point tests were performed. The hydrotrope was solubilized in caustic or alkaline electrolyte solution to which a 9.5 mole nonyl phenol was added. Each sample was heated to the temperature at which the NPE-9.5 clouds out of solution. The higher the cloud point temperature, the more efficient the hydrotrope.

The control is 1% NPE-9.5 in each alkaline electrolyte solution without hydrotrope added. The hydrotroping capabilities of DeTROPE SA-45 at higher levels of NP-9.5 show similar trends (data available on request).

Key:

NaOH = Sodium Hydroxide
SMP = Sodium Metasilicate Pentahydrate
TKPP = Tetrapotassium Pyrophosphate
SXS-40 = Sodium Xylene Sulfonate 40% active

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**Dynamic Surface Tension of DeTROPE SA-45**

Dynamic surface tension was conducted at 1.0% and 2.0% by weight in distilled water at ambient temperature. DeTROPE SA-45 provides considerably lower surface tension as compared to SXS-40.

![Dynamic Surface Tension @ Ambient Temperature](image)

**Corrosion Inhibition Properties of DeTROPE SA-45**

Metal coupons were partially submerged in a solution containing from 0.25% - 1.0% by weight of DeTROPE SA-45 in hard water (100ppm as CaCO₃ and 71ppm as CaCl₂) and stored in sealed glass jars at room temperature. The top halves of the panels were exposed to the vapor phase.

**90 Day Results**

Steel Panels:
- Q-Panel – Type RS
- Low carbon, cold-rolled steel
- 0.063” thick, ½ hard

![Steel Panels](image)