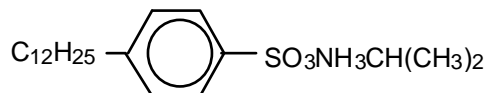


Product Bulletin

Product Name

NINATE[®] 411

Chemical Structure



Chemical Description

Isopropyl amine salt of branched alkylbenzene sulfonic acid

CAS Registry No.

68649-00-3

INCI Name

Isopropylamine Dodecylbenzene Sulfonate

Applications

NINATE 411 is used in detergent and industrial applications. It is both oil soluble and water dispersible. NINATE 411 is used as a surfactant for emulsion degreasers, laundry prespotters, dry cleaning products, paint strippers, waterless hand cleaners and other hard surface cleaners. NINATE 411 is an effective emulsifier for petroleum based aliphatic, aromatic and chlorinated solvents, pine oil, terpene hydrocarbons such as d-limonene and its isomers such as orange oil. Dilutable microemulsion concentrates can be easily formulated using NINATE 411.

Typical Properties

Appearance at 25°C.....	Viscous yellow liquid
pH, 20% in 1:1 IPA:H ₂ O.....	3.5
Actives, % (EW 385).....	88 min.
Pour Point, °C (°F).....	-1 (30)
Freeze Point, °C (°F).....	-4 (25)
Viscosity, cps at 25°C.....	4500
Viscosity, cps at 60°C.....	600
Flash Point (PMCC), °C (°F).....	>94 (>201)
Density, g/ml (lbs/U.S. gal).....	1.02 (8.5)
RVOC, U.S. EPA, %.....	0

Biodegradability

Product is biodegradable. A detailed biodegradability statement is available upon request.

Storage & Handling

As with most surfactants, it is recommended that normal safety precautions (i.e. gloves and safety glasses) be followed when handling NINATE 411.

It is recommended that NINATE 411 be stored in sealed containers and kept in a cool, dry place. If material is frozen it should be heated gently and stirred to ensure it is homogeneous before use.

Bulk Storage Recommendations: NINATE 411 should be stored in 316 stainless steel or fiberglass with a corrosion liner. Mild agitation is recommended while storing to maintain homogeneity. Material should be stored between 85 - 105°F. Use mild heat if needed avoiding the use of steam since it may impact product integrity. Recirculated warm water is recommended. Pumps, pipes and transfer lines should be 316 stainless steel.

Standard Packaging: NINATE 411 is available in drums (450 lb/204 kg) and in bulk quantities.

BIO-TERGE[®], MAKON[®], NINATE[®] and NINOL[®] are registered trademarks of Stepan Company.



Clearances

All components of NINATE 411 are listed in the following countries; the registration numbers for the active ingredients are included in parentheses: United States (TSCA 68649-00-3, 90218-35-2), Europe (EINECS 272-018-9), Canada (DSL 68649-00-3, 90218-35-2), and New Zealand (NZIoC 90218-35-2).

NINATE 411 is USDA authorized and is available in Kosher grade.

NINATE 411 is also approved for use under FDA 21CFR 175.105, 176.210.

Formulations

GENERAL PURPOSE CLEANER-CLEAR GEL

<u>Ingredients</u>	<u>Wt. % (as is)</u>
1. d-Limonene	41.0
2. NINATE 411	8.0
3. NINOL [®] 11-CM	8.0
4. BIO-TERGE [®] PAS-8S	3.0
5. Water	<u>40.0</u>
	100.0%

Mixing Procedure:

Add NINATE 411 and NINOL 11-CM to d-Limonene and mix until clear. Add water slowly while mixing. Add BIO-TERGE PAS-8S last while agitating and mix until clear.

Additional Safety Information

A Material Safety Data Sheet is available upon request.

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