

Product Bulletin

SURFONIC[®] N-95 Surfactant

GENERAL NAME Nonoxynol-9

PRODUCT DESCRIPTION

SURFONIC N-95 surfactant is the 9.5-mole ethoxylate of nonylphenol. It is a water soluble, nonionic surface-active agent which is compatible with other nonionic surfactants and with most anionic and cationic surfactants.

APPLICATIONS

- wetting agents
- penetrants
- dispersants
- detergents
- solubilizing agents
- emulsifiers

SALES SPECIFICATIONS

<u>Property</u>	<u>Specifications</u>	<u>Test Method*</u>
Appearance	Clear and substantially free of suspended matter	ST-30.1
Cloud point, °C (1% aqueous)	52 - 56	ST-9.1, 5.2.1
Color, Pt-Co	100 max.	ST-30.12
pH, 1% in 10:6 IPA:H ₂ O	6.5 - 7.5	ST-31.36,F
Water, wt%	0.2 max.	ST-31.53,5

*Methods of Test are available upon request.

ADDITIONAL INFORMATION

Chemical Properties

Molecular Weight (theoretical)	638
EO Content, wt% (theoretical)	65.5
HLB Value	13.1
Hydroxyl Number (theoretical)	88
Water Solubility	Soluble

Regulatory Information

CAS Number 127087-87-0
See SDS for all regulatory information.

Shelf Life

The product should retain its conformance to sales specifications for a period of at least two years after shipment if the product is stored at less than 100°F in its undamaged, unopened, factory packaged container.

In general, the user should determine the suitability of any chemical compound, no matter what the shelf life or length of time of storage. Each user should conduct a sufficient investigation to establish the suitability of any product for his intended use.

Typical Properties

Flash point, PMCC, °F (°C)	460 (238)
Pour point, °F (°C)	40 (4)
Density, g/ml, 25°C (77°F)	1.055
Weight, lbs/US gal, 25°C (77°F)	8.79
Viscosity, kinematic	
cSt, 25°C (77°F)	278
cSt, 37.8°C (100°F)	112
Vapor Pressure, Torr, 25°C (77°F)	<1x10 ⁻⁵
Critical Micelle Concentration, ppm, 25°C	48
Surface Tension, dynes/cm, 0.10%, 25°C	30



TOXICITY AND SAFETY

For information on the toxicity and safe handling of this product, read the Safety Data Sheet prior to use of the product.

HANDLING AND STORAGE

SURFONIC N-95 surfactant may be satisfactorily stored in carbon steel tanks using steel pipes and pumps. Caution must be exercised, however, to keep the material in the anhydrous state to prevent severe corrosion to the carbon steel tank and related equipment. A drier on the breathing nozzle is recommended to help maintain anhydrous conditions in the storage tank.

For longer term color stability, it is recommended that the product be stored under an inert atmosphere. Solid sediment may form upon standing. There should be circulation in the storage vessel to keep solids suspended.

Low pressure steam coils in storage tanks and steam tracing of transfer lines should be provided in cases where low environmental temperatures may make pumping of the product difficult.

SHIPPING DATA

Product is available in tank cars, tank trucks and drums of 470 pounds (205 kilograms) net weight.

BIODEGRADABILITY AND ENVIRONMENTAL SAFETY

SURFONIC® N-series surfactants and related products have been shown to undergo 90% to 100% loss of surface activity (primary biodegradation) under the Semi-continuous Activated Sludge Method and over 90% removal in sewage treatment plants.

Environmental concentrations of nonylphenol (NP) and ethoxylate (NPE) in a survey of rivers across the U.S. receiving treated or untreated wastewater are mostly (60-75%) below their detection limits (0.1 microgram/kg or ppb for NP, NPE₁ and NPE₂; 1.6 ppb for the aggregate of NPE₃₋₁₇). Highest levels found of NP, NPE₁ and NPE₂ were about 1 ppb, (about 15 ppb for NPE₃₋₁₇). These maximum observed levels are 1 to 2 orders of magnitude below known acute or chronic toxicity toward aquatic organisms.

We conclude from this and other published information that our SURFONIC® N-series products and other NPE are satisfactorily biodegraded when treated in conventional secondary treatment plants, and no persistence or accumulation of NPE or environmental harm due to NPE is occurring. Comparison of the toxicity threshold of the most hazardous metabolite of nonylphenol ethoxylates, nonylphenol, and its actual concentration in the environment demonstrates a sizable safety margin. Cleaning products containing NPE may be disposed of safely by flushing down the drain with water.

General References

1. Swisher, R. D., Surfactant Biodegradation, Marcel Dekker, 1987.
2. Talmage, S. S., Environmental and Human Safety of Major Surfactants: Alcohol Ethoxylates and Alkylphenol Ethoxylates, a report to the Soap and Detergent Association, Lewis Publishers, 1994.

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