

Product Bulletin

Product Name

BIO-SOFT® N1 SERIES

Chemical Structure

CH₃(CH₂)_n-O(CH₂CH₂O)_yH n = 10
 y = average moles of ethoxylation

CAS Registry No.

34398-01-1

Chemical Description

Alcohol ethoxylates based on a synthetic C11 alcohol base

Applications

The BIO-SOFT N1 series is a line of high active nonionic surfactants. The BIO-SOFT N1 series products are stable in both aqueous acidic and alkaline solutions, allowing for application in a wide range of products. The alcohol ethoxylates containing between one and five moles of ethoxylation are primarily useful in oil-based systems.

Functional Properties

Emulsification	Effective on greasy soils
Moderate foam production	Solubilizer
Detergent	Can be used in conjunction with anionic, amphoteric and cationic surfactants
Excellent wetting agents	

End Product Uses

Laundry products	Hand dishwashing detergents
Textiles	Pesticides
Hard surface cleaners	I&I cleaners
Paints	

Typical Properties

	BIO-SOFT N1-3	BIO-SOFT N1-5
Appearance at 25°C.....	Clear to slightly hazy liquid	Clear to slightly hazy liquid
Average No. Moles EO	3	5
HLB	8.7	11.2
pH, 1% aqueous	6.8	6.8
Density, g/ml (lbs/U.S. gal).....	0.930 (7.75)	0.970 (8.08)
Actives, %	99.5 min.	99.5 min.
Color, APHA.....	30 max.	50 max.
Pour Point, °C (°F)	-7 (20)	6 (43)
Viscosity at 38°C (100°F), cps	11	19
Cloud Point (1% aqueous), °C (°F)	N/A	18 (64)
Flash Point, PMCC, °C (°F)	>94 (>201)	>94 (>201)
RVOC, U.S. EPA, %	0	0
Preservative	Not required	Not required
	BIO-SOFT N1-7	BIO-SOFT N1-9
Appearance at 25°C.....	Clear to slightly hazy liquid	Hazy liquid to white paste
Average No. Moles EO	7	9
HLB	12.9	13.9
pH, 1% aqueous	6.8	6.8
Density, g/ml (lbs/U.S. gal).....	0.970 (8.80)	0.950 (7.90)
Actives, %	99.5 min.	99.5 min.
Color, APHA.....	50 max	50 max.
Pour Point, °C (°F)	13 (55)	18 (64)
Viscosity at 38°C (100°F), cps	23	31
Cloud Point (1% aqueous), °C (°F)	58 (136)	74 (165)
Flash Point, PMCC, °C (°F)	>94 (>201)	>94 (>201)
RVOC, U.S. EPA, %	0	0
Preservative	Not required	Not required



Environmental Effects

The BIO-SOFT N1 Series products are readily biodegradable. A detailed biodegradability statement is available upon request.

Health Effects

The BIO-SOFT N1 Series products are slightly toxic orally ($LD_{50} \geq 2700\text{mg/kg}$). Undiluted the BIO-SOFT N1 Series products are severe skin and eye irritants while a 1% dilution generally causes slight to mild skin irritation. A detailed mammalian toxicity statement is available upon request.

Storage & Handling

Normal safety precautions (i.e., gloves, safety goggles) should be employed when handling BIO-SOFT N1 Series products. Avoid contact with eyes, nose or prolonged skin contact. Wash exposed areas thoroughly after handling material.

Standard Packaging: The BIO-SOFT N1 Series products are available in 55-gallon drums and in bulk quantities.

While diluting the BIO-SOFT N1 Series products, as with all alcohol ethoxylates, they are prone to gelling. If the product is diluted into water, heating may be required to minimize or eliminate gel formation.

It is recommended that the BIO-SOFT N1 Series products be stored in sealed containers and kept in a cool, dry place. If the products are frozen, they should be heated gently and stirred to ensure they are homogeneous before use.

Workplace Exposure

Occupational exposure can occur primarily through skin contact or via inhalation of vapors and mists. Engineering controls, personal protective equipment, and other workplace safety practices should be used to control these exposures. See SDS for more information.

Clearances

The international inventories (country clearances) of BIO-SOFT N1 series can be found in Section 15 of the Safety Data Sheet (SDS). It is the responsibility of the formulator to review the chemical control regulations for each country where the end product is intended to be sold or used. If you have any further questions regarding inventories, please contact North America Technical Service at techserv@stepan.com.

The BIO-SOFT N1 Series is available as Kosher Certified.

The BIO-SOFT N1 Series is approved for use under EPA 40CFR 180.910 and 180.930.

BIO-SOFT N1-5, BIO-SOFT N1-7 and BIO-SOFT N1-9 meet the U.S. EPA Safe Choice Program's surfactant screen and are listed on www.cleangredients.org (an on-line database for green formulators). For further information, visit www.cleangredients.org. Additional Stepan ingredient listing can be found at www.stepan.com.

Product Stewardship

This product bulletin has been written in accordance with ACC's Product Stewardship guidelines.

Additional Safety Information

A Safety Data Sheet is available upon request.



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