

## Product Bulletin

### BIO-SOFT® N91 SERIES

Product Name  
Chemical Structure  
CAS Registry No.  
Chemical Description  
Applications

$\text{CH}_3(\text{CH}_2)_n\text{-O}(\text{CH}_2\text{CH}_2\text{O})_y$        $n = 8-10$   
 $y =$  average moles of ethoxylation

68439-46-3

Alcohol ethoxylates based on a C9-11 synthetic alcohol

The BIO-SOFT N91 series is a line of high active nonionic surfactants. The BIO-SOFT N91 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

- Detergent
- Excellent wetting agents
- Moderate foam production
- Compatible with a number of solvents
- Emulsification
- Solubilizer
- Can be used in conjunction with anionic, amphoteric and cationic surfactants

#### End Product Uses

- Laundry products
- All-purpose cleaners
- I&I cleaners
- Paints
- Hard surface cleaners
- Pesticides
- Textiles
- HI&I machine based low foam cleaning (BIO-SOFT N91-2.5 only)

Typical Properties

	<u>BIO-SOFT N91-2.5</u>	<u>BIO-SOFT N91-6</u>	<u>BIO-SOFT N91-8</u>
Appearance at 25 °C.....	Clear to slightly hazy liquid	Clear to slightly hazy liquid	Clear to slightly hazy liquid
Average No. Moles EO.....	2.5	6.0-6.5	8.3
HLB.....	8.5	12.4	13.9
pH, 1% aqueous.....	6.7	6.0	6.0
Density, g/ml (lbs/U.S. gal).....	0.925 (7.71)	0.990 (8.25)	1.008 (8.40)
Actives, % .....	99.5 min.	99.5 min.	99.5 min.
Color, APHA.....	50 max.	50 max.	50 max.
Pour Point, °C (°F) .....	-13(9)	6 (43)	15 (59)
Viscosity at 38 °C (100 °F), cps.....	13	22	29
Cloud Point, 1% aqueous, °C (°F).....	N/A	47-58 (116-136)	78-85 (172-185)
Flash Point, PMCC, °C (°F).....	>94 (>201)	>94 (>201)	>94 (>201)
RVOC, U.S. EPA, %.....	0	0	0
Preservative .....	Not required	Not required	Not required

Environmental Effects

The BIO-SOFT N91 series products are readily biodegradable. A detailed biodegradability statement is available upon request.

Health Effects

The BIO-SOFT N91 series products are slightly toxic orally ( $\text{LD}_{50} \geq 2700\text{mg/kg}$ ). Undiluted the BIO-SOFT N91 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 N91 series products. Avoid contact with eyes, nose or prolonged skin contact. Wash exposed areas thoroughly after handling material.

While diluting the BIO-SOFT N91 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 N91 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.

**Standard Packaging:** The BIO-SOFT N91 Series products are available in drum and in bulk quantities.

## Clearances

The international inventories (country clearances) of BIO-SOFT N91 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 N91 Series is available as Kosher Certified.

BIO-SOFT N91-6 and BIO-SOFT N91-8 meet the U.S. EPA Safe Choice Program's surfactant screen and are listed on [www.cleangredients.org](http://www.cleangredients.org) (an on-line database for green formulators). For further information, visit [www.cleangredients.org](http://www.cleangredients.org). Additional Stepan ingredient listing can be found at [www.stepan.com](http://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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