

# Stepan's Naturally-Derived\* Amine Oxides

Stepan's naturally-derived\* amine oxides are made from biorenewable feedstock and are suited for use primarily in Household, Institutional and Industrial applications, but may also be used in Personal Care applications. AMMONYX® LO Special is the latest naturally-derived surfactant offering from Stepan.

## Typical Properties



Trade Name	<u>AMMONYX® CDO Special</u>	<u>AMMONYX® LMDO</u>	<u>AMMONYX® LO Special</u>
Chemical Name	Cocamidopropyl amine oxide	Lauryl/myristyl amidopropyl amine oxide	Lauramine oxide
CAS#	68155-09-9	61792-31-2, 67806-10-4	1643-20-5
Appearance at 25°C	Clear liquid	Clear liquid	Clear liquid
pH	7.5 (as is)	8.0 (10% aqueous)	7.5 (10% aqueous)
Amine oxide, %	33%	33%	30%
Free amine, %	0.5%	0.4%	0.5%
Free peroxide, %	0.18%	0.14%	0.14%
Viscosity at 25°C	45 cps	45 cps	77 cps
BCI <sup>a</sup> , %	72	72	86

## Formulating Tips

<u>Product Attribute</u>	<u>CDO Special</u>	<u>LMDO</u>	<u>LO Special</u>
Stable in Hydrogen peroxide	✓	✓	✓✓
Stable in Hypochlorite bleach			✓✓
Superior Grease Cutter	Good	Good	Best
Lime Soap Dispersant (neutral to alkaline pH)	Good	Good	Best
Higher Salt Tolerance	✓	✓✓	
Meets DfE screen on <a href="http://www.cleangredients.org">www.cleangredients.org</a>		✓✓	

\*Naturally-derived – Stepan defines naturally-derived as made from biorenewable feedstock (derived from plant, animal or marine sources).

<sup>a</sup>Biorenewable Carbon Index - The number of biorenewable carbons (plant, animal or marine based) divided by the number of total carbons (natural and petroleum-based) in the idealized molecule x 100.

# Formulations

## Formulation #1115: Tub & Tile Cleaner

Total BCI<sup>b</sup>: 86

<u>Ingredients</u>	<u>Surfactant BCI</u>	<u>Wt%</u>	<u>Functionality</u>
Deionized water	-	91.0	Carrier
Citric acid	-	4.0	Builder
AMMONYX® LO Special	86	5.0	Degreaser, Foaming/ Cleaning Agent
Preservative, dye, fragrance	-	q.s.	Additives
<b>TOTAL</b>		<b>100.0</b>	

### Typical Properties

Appearance at 25°C:	Clear liquid
pH, as is:	2.7
Viscosity at 25°C, cps:	Water thin



## Formulation #1116: Bathroom Cleaner with Bleach

Total BCI<sup>b</sup>: 86

<u>Ingredients</u>	<u>Surfactant BCI</u>	<u>Wt%</u>	<u>Functionality</u>
Deionized water	-	79.5	Carrier
Sodium hydroxide, 50%	-	1.0	Alkalinity
Sodium metasilicate • 5H <sub>2</sub> O	-	0.5	Builder
AMMONYX® LO Special	86	5.0	Degreaser, Foaming/ Cleansing Agent
Sodium hypochlorite, 15%	-	14.0	Bleach
Preservative	-	q.s.	Additive
<b>TOTAL</b>		<b>100.0</b>	

### Typical Properties

Appearance at 25°C:	Clear liquid
pH, as is:	12.8
Viscosity at 25°C:	Water thin

## Formulation #1118: Premium High-BCI Hand/Dishwash Liquid

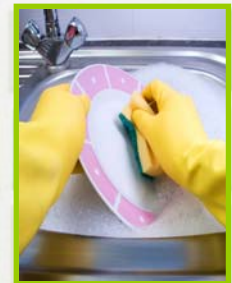
Total BCI<sup>b</sup>: 96

<u>Ingredients</u>	<u>Surfactant BCI</u>	<u>Wt%</u>	<u>Functionality</u>
Deionized water	-	10.61	Carrier
STEPANOL® WA-EXTRA K	100	55.17	Primary Surfactant
ALPHA-STEP® PC-48	94	21.05	Surfactant
AMMONYX® LO Special	86	13.11	Foam Stabilizer/Degreaser
Sodium Chloride	-	q.s.	Viscosity adjusters
Citric acid or Sodium hydroxide	-	q.s.	pH adjusters
Kathon CG (Rohm and Haas)	-	0.05	Preservative
Dye, fragrance	-	q.s.	Additives
<b>TOTAL</b>		<b>100.00</b>	

### Typical Properties

Appearance at 25°C:	Clear liquid
pH, as is:	8.0
Viscosity at 25°C, cps:	1,600-2,000

<sup>b</sup> Total BCI was calculated using only the Stepan surfactants in these formulations.



For a complete listing of Stepan products, visit us at [www.stepan.com](http://www.stepan.com).

To request a sample, literature or more information, contact, Stepan Technical Services Department at 1-800-745-7837 (STEP) or [techserv@stepan.com](mailto:techserv@stepan.com).

Nothing contained herein, grants or extends a license, expressed or implied, in connection with patents, issued or pending, of the manufacturer or others. The information contained herein is based on the manufacturer's own study and the works of others. The manufacturer makes no warranties, expresses or implied, as to the accuracy, completeness or adequacy of the information contained herein. The manufacturer shall not be held liable (regardless of fault) to the vendor's employees, or anyone for any direct, special or consequential damages arising out of connection with the accuracy, completeness, adequacy or furnishing of such information.

ALPHA-STEP®, AMMONYX®, STEPANOL® are registered trademarks of Stepan Company.