

## Product Bulletin

Product Name	<b>MAKON® NF-12</b>																																
Chemical Description	C10-12 Alcohol Alkoxyate																																
CAS Registry No.	68154-97-2																																
Applications	MAKON NF-12 is a biodegradable, nonionic surfactant that exhibits low foaming properties and excellent wetting action. MAKON NF-12 may be formulated into highly alkaline built liquid systems with the aid of a hydrotrope such as STEPANATE® SXS or BIO-TERGE® PAS-8S (or BIO-TERGE PAS 7S). Solutions of MAKON NF-12 resist foam development even under extreme or prolonged agitation; they are completely non-foaming above 25 °C. MAKON NF-12 can be used in a variety of applications including mechanical dishwashing, rinse aids, metal cleaning, spray washing, general purpose cleaning, emulsion polymerization, textile wetting and scouring, oil field additives, agricultural adjuvant and non-foaming emulsions.																																
Typical Properties	<table border="0"> <tr> <td>Appearance at 25 °C .....</td> <td>Pale, straw colored liquid</td> </tr> <tr> <td>pH, 10% 50:50 IPA/water .....</td> <td>6.0</td> </tr> <tr> <td>Actives, % .....</td> <td>100</td> </tr> <tr> <td>Color, Gardner .....</td> <td>2 max.</td> </tr> <tr> <td>Pour Point, °C (°F) .....</td> <td>-10 (14)</td> </tr> <tr> <td>Freeze Point, °C (°F) .....</td> <td>-12 (10)</td> </tr> <tr> <td>Cloud Point, 1% in water, °C (°F) .....</td> <td>15 (59)</td> </tr> <tr> <td>Viscosity at 25 °C, cps .....</td> <td>230</td> </tr> <tr> <td>Viscosity at 60 °C, cps .....</td> <td>45</td> </tr> <tr> <td>Flash Point, PMCC, °C (°F) .....</td> <td>&gt;94 (&gt;201)</td> </tr> <tr> <td>Density, g/ml (lbs/U.S. gal) .....</td> <td>1.00 (8.34)</td> </tr> <tr> <td>HLB .....</td> <td>6</td> </tr> <tr> <td>RVOC, U.S. EPA, % .....</td> <td>0</td> </tr> <tr> <td>Preservative .....</td> <td>Not required</td> </tr> <tr> <td>Foam Height, Ross-Miles, cm, initial .....</td> <td>0.4</td> </tr> <tr> <td>Foam Height, Ross-Miles, cm, 5 min. ....</td> <td>0.2</td> </tr> </table>	Appearance at 25 °C .....	Pale, straw colored liquid	pH, 10% 50:50 IPA/water .....	6.0	Actives, % .....	100	Color, Gardner .....	2 max.	Pour Point, °C (°F) .....	-10 (14)	Freeze Point, °C (°F) .....	-12 (10)	Cloud Point, 1% in water, °C (°F) .....	15 (59)	Viscosity at 25 °C, cps .....	230	Viscosity at 60 °C, cps .....	45	Flash Point, PMCC, °C (°F) .....	>94 (>201)	Density, g/ml (lbs/U.S. gal) .....	1.00 (8.34)	HLB .....	6	RVOC, U.S. EPA, % .....	0	Preservative .....	Not required	Foam Height, Ross-Miles, cm, initial .....	0.4	Foam Height, Ross-Miles, cm, 5 min. ....	0.2
Appearance at 25 °C .....	Pale, straw colored liquid																																
pH, 10% 50:50 IPA/water .....	6.0																																
Actives, % .....	100																																
Color, Gardner .....	2 max.																																
Pour Point, °C (°F) .....	-10 (14)																																
Freeze Point, °C (°F) .....	-12 (10)																																
Cloud Point, 1% in water, °C (°F) .....	15 (59)																																
Viscosity at 25 °C, cps .....	230																																
Viscosity at 60 °C, cps .....	45																																
Flash Point, PMCC, °C (°F) .....	>94 (>201)																																
Density, g/ml (lbs/U.S. gal) .....	1.00 (8.34)																																
HLB .....	6																																
RVOC, U.S. EPA, % .....	0																																
Preservative .....	Not required																																
Foam Height, Ross-Miles, cm, initial .....	0.4																																
Foam Height, Ross-Miles, cm, 5 min. ....	0.2																																
Environmental Effects	MAKON NF-12 is biodegradable. A detailed biodegradability statement is available upon request.																																
Health Effects	MAKON NF-12 is slightly toxic orally (Oral LD <sub>50</sub> =1.8 g/kg).																																
Storage & Handling	<p>Normal safety precautions (i.e., gloves and safety goggles) should be employed when handling MAKON NF-12. Contact with the eyes and prolonged contact with the skin should be avoided. Wash thoroughly after handling material.</p> <p>It is recommended that MAKON NF-12 be stored in sealed containers and kept in a cool, dry place.</p> <p><u>Bulk Storage Information:</u> MAKON NF-12 can be stored in vessels of 316 stainless steel, but carbon steel is adequate. Material should be stored between 80-110 °F (27-43 °C). An internal hairpin coil of stainless/ carbon steel with low pressure steam (under 50 psig) should be used if heating is required. Mild agitation is required if the tank is heated. Material is heat sensitive and agitation prevents localized</p>																																



heating. Heating may not be required for inside storage if the tank is turned over frequently. Stainless steel 316 is preferred for pumps, pipes and transfer lines; however, carbon steel is adequate.

Standard Packaging: MAKON NF-12 is available in drums and in bulk quantities.

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 practices should be used to control these exposures.

Clearances

The international inventories (country clearances) of MAKON NF-12 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](mailto:techserv@stepan.com).

MAKON NF-12 is available as Kosher certified.

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.



The information contained herein is based on the manufacturer's own study and the works of others and is subject to change without prior notice. The information is not intended to be all-inclusive, including as to the manner and conditions of use, handling, storage or disposal or other factors that may involve additional legal, environmental, safety or performance considerations. Nothing contained herein grants or extends a license, express or implied, in connection with any patents issued or pending of the manufacturer or others, or shall be construed as a recommendation to infringe any patents or to violate any applicable laws. STEPAN COMPANY MAKES NO WARRANTY OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR USE, AND NO WARRANTY OR GUARANTY OF ANY OTHER KIND, EXPRESS OR IMPLIED, IS MADE, INCLUDING REGARDING PERFORMANCE, SAFETY, SUITABILITY, STABILITY, ACCURACY, COMPLETENESS, ADEQUACY OR OTHERWISE. Stepan Company (and its employees, subsidiaries and affiliates) shall not be liable (regardless of fault) to the vendee, its employees, or any other party in respect of this information, including in respect of its accuracy, completeness, adequacy, furnishing, use, or reliance upon, and the vendee assumes and releases Stepan Company (and its employees, subsidiaries and affiliates) from all liability, whether in tort, contract or otherwise to the fullest extent possible under the relevant law.

**Stepan**   
**Corporate Headquarters**  
**Northfield, Illinois 60093, U.S.A.**  
**Phone: 847-446-7500**  
**Fax: 874-501-2100**  
**Website: [www.stepan.com](http://www.stepan.com)**

For Technical Service Call:  
Stepan North America **+1-800-745-7837**  
Stepan Mexico **+55-11-5089-2208**  
Stepan Quimica **+55-11-5089-2200**  
Stepan Colombia **+571-636-2808**  
Stepan Europe **+33-476-505-160**  
Stepan Asia **+656-879-9855**  
Stepan Philippines **+656-879-9855**

For Customer Service Call:  
Stepan North America **+1-800-457-7673**  
Stepan Mexico **+52-555-533-1967**  
Stepan Quimica **+55-11-5089-2200**  
Stepan Colombia **+57-6-8993125**  
Stepan UK **+44-161-338-5511**  
Stepan France **+33-476-50-51-00**  
Stepan Philippines **+63-2-842-7951**