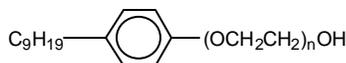


Product Name

## MAKON<sup>®</sup> 8, 10 and 12

Chemical Structure



Chemical Description

Nonylphenol Ethoxylate

CAS Registry No.

127087-87-0

Applications

The MAKON series of surfactants is nonionic in nature; they neither ionize in water nor hydrolyze in aqueous acid or alkaline solutions. Chemically, they are the reaction products of nonylphenol and ethylene oxide. They differ in the mole ratio of hydrophilic ethylene oxide to hydrophobic nonylphenol. The MAKON surfactants are high active products that offer a broad range of properties. Because of this versatility, MAKON products find application in a number of different industries and in a multitude of products including agricultural emulsions, detergents, sanitizers, industrial cleaners, metal cleaners, textiles, paper de-inking and drilling products.

Typical Properties

	MAKON 8	MAKON 10
Appearance at 25°C.....	Clear liquid	Clear liquid
pH, 5% 1:1 IPA:H <sub>2</sub> O .....	7.5	---
pH, 10% aqueous.....	---	6.3
Actives, % .....	99.8	99.8
Color, APHA .....	54	29
Pour Point, °C (°F) .....	6 (43)	4 (42)
Freeze Point, °C (°F).....	3 (37)	1 (34)
Cloud Point, 1% in water, °C (°F).....	24 (75)	54 (129)
Hydroxyl Number .....	95	88
Approximate HLB.....	12	13
Average Moles of EO .....	8	10
Viscosity, cps at 25°C .....	240	240
Flash Point, PMCC, °C (°F).....	>94 (>201)	>94 (>201)
Density, g/ml (lbs/U.S. gal).....	1.04 (8.7)	1.06 (8.8)
RVOC, U.S. EPA, % .....	0	0
	<u>MAKON 12</u>	
Appearance at 25°C.....	Hazy liquid	
pH, 5% 1:1 IPA:H <sub>2</sub> O .....	7.5	
pH, 10% aqueous.....	---	
Actives, % .....	99.8	
Color, APHA .....	100 max	
Pour Point, °C (°F) .....	14 (57)	
Freeze Point, °C (°F).....	11 (52)	
Cloud Point, 1% in water, °C (°F).....	81 (178)	
Hydroxyl Number .....	76	
Approximate HLB.....	14	
Average Moles of EO .....	12	
Viscosity, cps at 25°C .....	280	
Flash Point, PMCC, °C (°F).....	>94 (>201)	
Density, g/ml (lbs/U.S. gal).....	1.06 (8.8)	
RVOC, U.S. EPA, % .....	0	



#### Environmental Effects

MAKON products are biodegradable. Additional information is available upon request.

#### Health Effects

MAKON products are slightly to practically non-toxic orally ( $LD_{50} \geq 1400$  mg/kg). Undiluted MAKON products are moderately to severely irritating to eyes, while concentrations of 25% or less are minimally irritating to eyes.

#### Storage & Handling

Normal safety precautions (i.e. gloves and safety goggles) should be employed when handling MAKON surfactants. Contact with the eyes and prolonged contact with the skin should be avoided. Wash thoroughly after handling material.

It is recommended that MAKON products be stored in sealed containers and kept in a cool, dry place. If material is frozen it should be heated gently and stirred to ensure it is homogeneous before use.

Bulk Storage Information: MAKON surfactants can be stored in vessels of 316 stainless steel, but carbon steel is adequate. Material should be stored between 100 - 110°F. An internal hairpin coil of 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 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 products are available in drums (475 lb, 215 kg for MAKON 8, 10 and 12) 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

All components of MAKON surfactants are listed in the following countries; the registration numbers for the active ingredients are included in parentheses: United States (TSCA 127087-87-0), Australia (AICS 127087-87-0), Canada (DSL 127087-87-0), China (IECSC 127087-87-0), Europe (NLP 500-315-8), Japan (ENCS 7-172), Korea (ECL Serial No. KE-26246), New Zealand (NZIoC 127087-87-0), and Philippines (PICCS 127087-87-0).

**It is the responsibility of the end user to review the chemical control regulations for each country.**

The MAKON series 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.

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