Technical Data Sheet

DOW Monoethanolamine

MEA, MEA Low Freezing Grade (LFG), and MEA Iron & Chloride-Free Grade (ICF)

Product Description

DOW Monoethanolamine (MEA) offers abroad spectrum of application opportunities, primarily in detergents, personal care products, textile finishing and wood treating. Other applications include use as "down hole" in oil well chemicals and in metalworking to prevent corrosion, and as catalysts that promote stability during the reaction process in the manufacture of flexible and rigid urethane foams.

Because MEA combines the properties of amines and alcohols, MEA exhibits the unique capability of undergoing reactions common to both groups. As an amine, MEA is mildly alkaline and react with acids to form salts or soaps. As an alcohol, MEA is hygroscopic and can be esterfied.

DOW Monoethanolamine is available as MEA, MEA LFG and MEA ICF:

- MEA is a commercial grade of monoethanolamine (CAS number: 141-43-5).
- MEA Low Freezing Grade (LFG) is a variation of MEA commercial grade for easier handling in colder ambient temperatures (freezing point: -13ºC/8.6ºF). It is an 85% solution of MEA with 15% water.
- MEA Iron & Chloride-free Grade (ICF) is iron and chloride free and contains <=1 ppm chloride, <=0.5% pm iron.

Features and Benefits

Detergents

- MEA imparts a reserve alkalinity to the laundry bath, which is essential to efficient cleaning.
- MEA is an effective oil and anti-redeposition agent.

Personal Care

- Fatty acids neutralized with MEA are used as emulsifiers for oil-in water emulsions such as gel-type industrial hand cleaners, aerosol shave creams, and hand and body lotions.

Textile Finishing

- MEA is used as reaction intermediates for the preparation of durable press fabric finishes and softeners.
- When reacted to form amine soaps, useful as scouring agents for wool and silk because of its low alkalinity.
- Because it is hygroscopic, MEA is used in the preparation of vat printing pastes.

Wood Treating

- MEA is used in both alkaline copper quaternary (ACQ) and copper azole formulations for treating wood to improve its resistance to pests and decay. Both are arsenic-free alternatives to the phased-out CCA formulations.

Typical Physical Properties(1)

Properties	Monoethanolamine
Formula	$HOC_2H_4NH_2$
Molecular Weight	61.08
Apparent Sp. Gr. at 25/°4C	1.0113
.0Sp Gr .0 a 10 o 80°C	0.00080
Boiling Point at 760 mm Hg°,C (°F)	171 (340)
At 59 mm Hg,°C	101
At 10 mm Hg,°C	71
Vapor Pressure at 20°C, mm Hg	<1
Freezing Point,°C (°F)	10 (50)
Absolute Viscosity at 20°C, cP	24.1
At 30°C, cP	16.2
Solubility at 20°C, % by wt	
In Water	Complete
Water In	Complete
Solubility in Organic Liquids at 25°C, % by wt	
Acetone	Complete
Benzene	0.6
Carbon Tetrachloride	0.1
Ethyl Ether	0.7
Heptane	0.1
Methanol	Complete
Surface Tension at 25°C, dynes/cm	48.3
Refractive Index, nD20	1.4539
.0ND/.0 a 20 o 40°C per °C	0.00034
Flash Point, Pensky-Martens Closed Cup (ASTM D 93), (°F)	96 (205)

(1) Data represent typical physical properties only and should not be construed as product specifications.

Product Stewardship

Dow encourages its customers and potential users to review their applications from the standpoint of human health and environmental aspects. To help ensure that Dow products are not used in ways for which they are not intended or tested, Dow personnel will assist customers in dealing with environmental and product safety considerations. Dow literature, including Material Safety Data Sheets, should be consulted by customers and potential users prior to use.

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