



DOW N,N-dimethylethanolamine (DMEA)

Product Description

DOW N,N-dimethylethanolamine (DMEA) is a tertiary amine. As with Dow's family of alkyl alkanolamines, DMEA is a versatile, polyfunctional molecule that combines the characteristics of amines and alcohols. DMEA is capable of undergoing reactions typical of both alcohols and amines, forming quaternary amine salts, soaps, and esters. This makes DMEA a useful intermediate in the synthesis of numerous products, and has resulted in its use in many diverse areas, including coatings, textile lubricants, polishes, detergents, pesticides, personal care products, pharmaceuticals, urethane catalysts, and water treatment.

Features and Benefits

Waterborne Coatings

- Increases resin solubility or reducibility, aids pigment dispersion, and improves solution stability by reducing pH drift.
- In baking enamels provides superior adhesion to a variety of topcoats, scratch- and rub-resistance, and resists yellowing
- In epoxy can-coatings, stabilizes final resin/solvent system to facilitate application by spraying, rolling, etc.

Household Specialties and Personal Care, Textiles, and Lubricants

- When reacted to form surface-active soaps, produces an excellent emulsifying and dispersing agent.

Pharmaceuticals

- Widely used as intermediate for production of active pharmaceutical ingredients (i.e. procaine, antihistamine, and Tamoxifen).

Urethane Catalysts

- Promotes foam rise and gel strength characteristics that are particularly adaptable to intricate rigid foam molding, including refrigerator and other insulation applications.
- Isocyanates react with DMEA, thus limiting the amount of DMEA vapor released to the atmosphere during the foaming reaction.

Water Treatment

- In flocculants, vastly improves solid/liquid separation processes.
- In Type II ion exchange resins, offers improved regeneration efficiencies.
- In corrosion inhibitors for return-condensate steam and boiler systems, provide correct combination of volatility and basicity to maintain a constant alkalinity in the boiling solution, vapor, and condensate.

Typical Physical Properties⁽¹⁾

Properties	N,N-Dimethylethanolamine
Formula	(CH ₃) ₂ N-CH ₂ CH ₂ OH
Molecular Weight	89.14
CAS Number	108-01-0
Specific Gravity at 20/20°C	0.888
Sp. Gr./ Δt °C	0.00085
Boiling Point, °C at 760 mm Hg	134.4
At 50 mm Hg, °C	62.2
At 10 mm Hg, °C	32.6
Vapor Pressure at 20°C, mm Hg	4.4
Freezing Point, °C (°F), (Pour Point)	-59 (-74)
Solubility at 20°C, % by wt	
In Water	Complete
Water In	Complete
Viscosity, cP	
At 20°C	3.8
At 40°C	2.2
Refractive Index, n _D , 20°C	1.4296
Heat of Combustion, BTU/lb (cal/g) at 25°C	-13,900 (-7720)
Flash Point, Tag Closed Cup (ASTM D56), °C (°F)	39 (103)

(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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