

Monoisopropanolamine (MIPA)

Effective Dispersant in TiO₂ Slurries

An Effective Dispersant in TiO₂ Slurries

MIPA displays a low viscosity index in a slurry of titanium dioxide and water in concentration from 0.1% weight to 0.7% weight. This translates to more efficient use of pigments, particularly important with premium pigments, such as TiO₂.

Better pigment dispersion should also result in better covering of the coating.

Better TiO₂ Dispersion

Data from representative testing demonstrate the superiority of MIPA in lowering viscosity.

The samples were mixed in a slurry composed of 100 grams TiO₂ and 42.8 grams distilled water. The tests were run with DuPont's titanium dioxide, grade R-902. Measurements were made with a Brookfield Viscometer model LVTDV-11, run at 30 rpm.

Centipoise, the unit of coefficient of viscosity in the csg system, is commonly measured by the amount of torque developed with a rotating cylinder, hence the reference to "30 rpm." As a rule of thumb, one centipoise unit is approximately equal to the viscosity of water at room temperature.

Features

- · Propylene based alkanolamine
- · Good dispersing aid for pigments
- · Efficient neutralizing agent
- · Offers pH stability
- · Inhibits corrosion
- Easy to handle. MIPA is a liquid at room temperature.
- Dow is the only U.S. producer of isopropanolamines.

SAMPLE	0.1g	0.2g Centipoise	0.5g	1.0g
AMP-95†	8300	10300	1700	918
MEA	7700	8900	3190	1610
DEA	9120	7500	8550	2900
TEA	11000	11200	8850	10400
MIPA	7700	1670	341	601
DIPA	8750	6880	2590	782
TIPA	12100	10200	7920	11400

Physical Properties Monoisopropanolamine (MIPA)			
MOLECULAR WEIGHT BOILING POINT VAPOR PRESSURE FLASH POINT VISCOSITY, CPS SPECIFIC GRAVITY WATER SOLUBILITY POUNDS PER GALLON	75.11 159°C (318°F) at 760 mm Hg 0.53 mm Hg at 20°C 73°C (163°F) Tag Closed Cup 23 at 25°C 0.960 at 20°/4°C INFINITELY at 25°C 7.95 at 20°C		

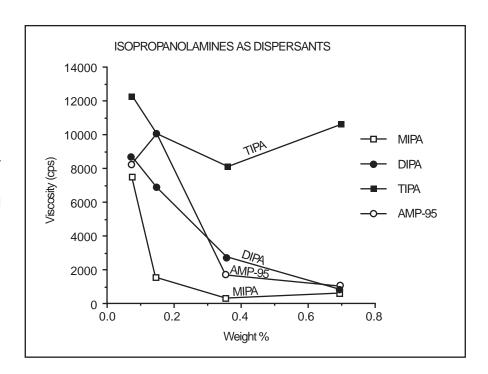
[†]AMP-95 is a trademark of Angus Chemical Company

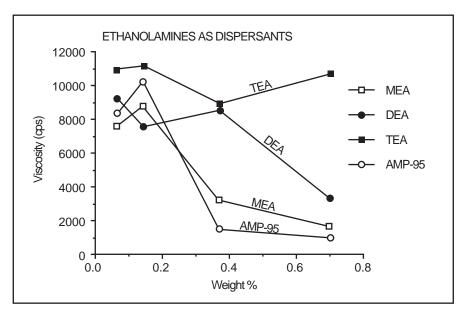
^{*}Trademark of The Dow Chemical Company

Isopropanolamines and Ethanolamines as dispersants.

Note that the points on the charts represent the various samples, i.e., 0.1 gram, 0.2 gram, 0.5 gram, and 1.0 gram. The horizontal scale is calibrated in weight percent for your convenience. Examples, 1.0 gram sample plus 100 grams TiO_2 and 42.8 grams $\text{H}_2\text{O} = 143.8$ grams. 1.0 gram/143.8 grams = .00695 or 0.7%. Thus, viscosity measured in centipoise units for 1.0 gram samples are positioned at .7 on the horizontal percent weight scale.

For more information on DOW isopropanolamines, call 1-800-447-4DOW (4369). Please refer to the Material Safety Data Sheet (MSDS) for safe handling information.





NOTICE: No freedom from any patent owned by Seller or others is to be inferred. Because use conditions and applicable laws may differ from one location to another and may change with time, Customer is responsible for determining whether products and the information in this document are appropriate for Customer's use and for ensuring that Customer's workplace and disposal practices are in compliance with applicable laws and other governmental enactments. Seller assumes no obligation or liability for the information in this document. NO WARRANTIES ARE GIVEN; ALL IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE ARE EXPRESSLY EXCLUDED.

Published November 1998

