Monoisopropanolamine (MIPA)

Effective Dispersant in TiO_2 Slurries

An Effective Dispersant in TiO_2 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 TiO_2.

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

Better TiO_2 Dispersion

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

The samples were mixed in a slurry composed of 100 grams TiO_2 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	0.5g	1.0g
		Centipoise		
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
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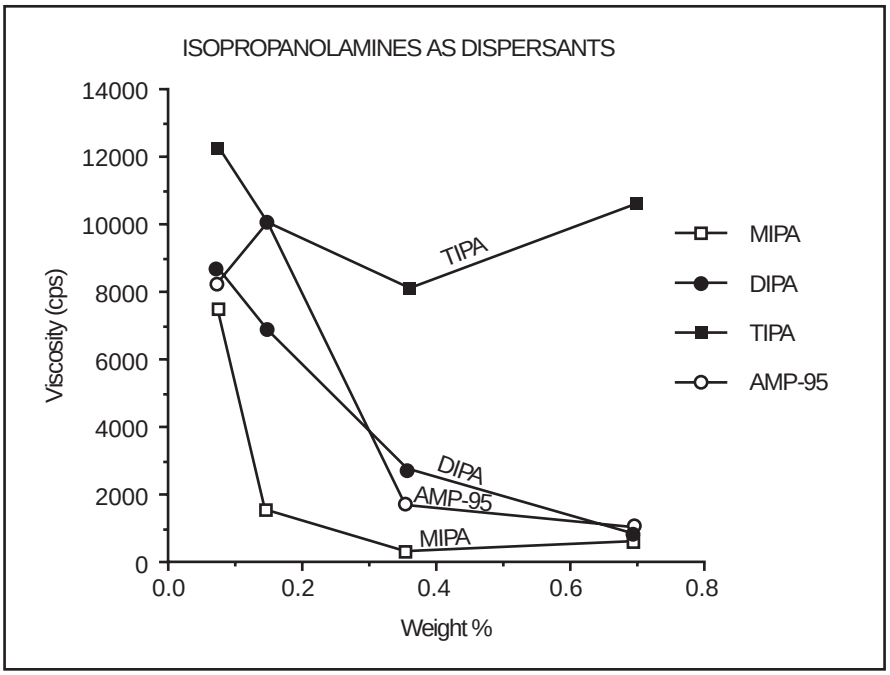
MOLECULAR WEIGHT	75.11
BOILING POINT	159°C (318°F) at 760 mm Hg
VAPOR PRESSURE	0.53 mm Hg at 20°C
FLASH POINT	73°C (163°F) Tag Closed Cup
VISCOSITY, CPS	23 at 25°C
SPECIFIC GRAVITY	0.960 at 20°/4°C
WATER SOLUBILITY	INFINITELY at 25°C
POUNDS PER GALLON	7.95 at 20°C

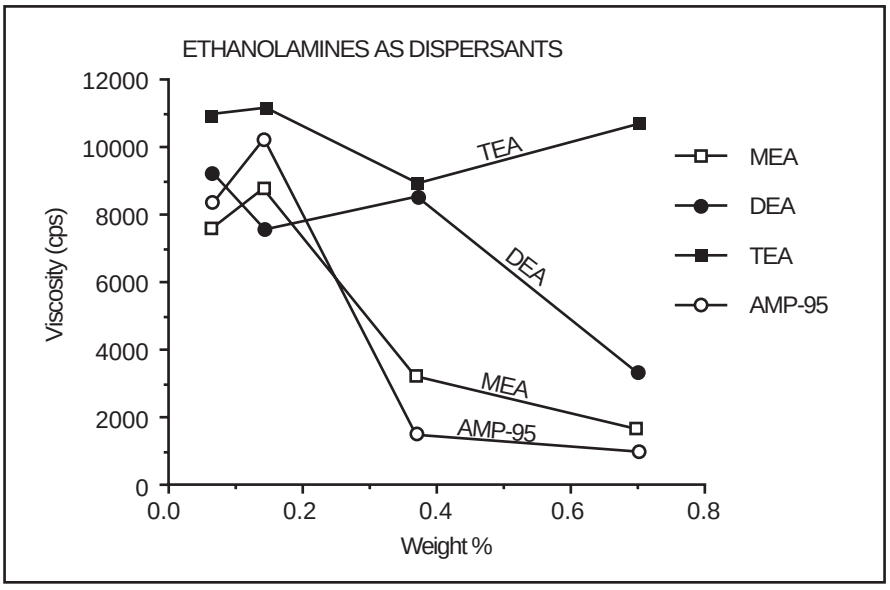
†AMP-95 is a trademark of Angus Chemical Company

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 H_2O = 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.





Published November 1998

Printed in U.S.A.

Form No.111-01346-1198AMS
CH 132-015-E-1198AMS