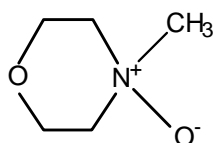


Technical Bulletin**N-METHYLMORPHOLINE OXIDE**

50% AQUEOUS SOLUTION

**APPLICATIONS**

N-methylmorpholine oxide (NMMO) can be used as is or admixed with water to form cellulose solutions from which cellulose films and fibers may be obtained^{1,2}. Cellulose articles have been formed by extrusion techniques³. The amount of water used has been reported to be critical.

SALES SPECIFICATIONS

Property	Specifications	Test Method*
Appearance	Clear amber liquid, substantially free of suspended matter	ST-30.1
Conductivity, $\mu\text{s}/\text{cm}$	200 max.	ST-4.79
Hydrogen peroxide, ppm	50 max.	ST-31.163
Light Absorbance, 450nm, 1cm	0.25 max.	ST-30.10
Nitrite, ppm	18 max.	ST-38.17
Nitrosomorpholine, ppb	50 max.	ST-38.27
NMM, wt. %	1.0 max.	ST-35.154
NMMO, wt. %	49 – 51	By difference
Total other amines, %	0.5 max.	ST-35.154

*Methods of Test are available from Huntsman Corporation upon request.

ADDITIONAL INFORMATION**Regulatory Information**

DOT/TDG Classification	Not regulated
HMIS Code	0-0-0
WHMIS Classification	Not regulated

Chemical Control Laws

Australia, AICS	Listed
Canada, DSL	Listed
Europe, EINECS/ELINCS	Listed
Japan, METI	Not determined
United States, TSCA	Listed

Typical Physical Properties

Freezing point, °C (°F)	-20 (-4)
Specific gravity, 20/20°C	1
Vapor pressure, mm Hg, 20°C (68°F)	> 10
Viscosity, cP, 20°C (68°F)	7
Water solubility (%)	> 10

TOXICITY AND SAFETY

For additional information on the toxicity and safe handling of this product, consult the Material Safety Data Sheet (Safety Data Sheet in Europe) prior to use of this product.

HANDLING AND STORAGE

Stable at 70°C for at least six weeks.

AVAILABILITY

N-Methylmorpholine oxide is available in 55-gallon polyethylene-lined drums.

REFERENCES

¹British Patent 1,144,048 to Eastman Kodak.

²A.F. Turbak, et al., *CHEMTECH*, January 1980, pg 51

³U.S. Patent 4,246,221 to Akzo Nobel.

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