



MLE

CHEMICAL NAME: N-METHYL MORPHOLINE

SYNONYMS:

CHEMICAL FAMILY: Nitrogen Compounds

FORMULA: $\text{CH}_2\text{CH}_2\text{OCH}_2\text{CH}_2\text{NCH}_3$

MOLECULAR WEIGHT: 101.15

TRADE NAME AND SYNONYMS: N-Methyl Morpholine

I. PHYSICAL DATA

BOILING POINT, 760 mm. Hg	115.3°C. (240°F.)	FREEZING POINT	-65.9°C.
SPECIFIC GRAVITY ($\text{H}_2\text{O} = 1$)	0.9213 at 20/20°C.	VAPOR PRESSURE AT 20°C.	17 mm. Hg
VAPOR DENSITY (air = 1)	3.5	SOLUBILITY IN WATER, % by wt. at 20°C.	Complete
PER CENT VOLATILES BY VOLUME	100	EVAPORATION RATE (Butyl Acetate = 1)	1.6
APPEARANCE AND ODOR	Water-white liquid; ammonia odor.		

II. HAZARDOUS INGREDIENTS

MATERIAL	%	TLV (Units)
Not applicable		

III. FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (test method)	72°F., Tag open cup	AUTOIGNITION TEMPERATURE	394°F.		
FLAMMABLE LIMITS IN AIR, % by volume		LOWER	1.9	UPPER	16.3
EXTINGUISHING MEDIA	Use carbon dioxide or dry chemical for small fires. Polymer foam preferred at standard application rate for large fires. Addition of water will reduce burning rate.				
SPECIAL FIRE FIGHTING PROCEDURES	— Thermal decomposition may produce nitrogen oxides. Self-contained breathing apparatus should be available for firemen.				
UNUSUAL FIRE AND EXPLOSION HAZARDS	None				

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EMERGENCY PHONE NUMBERS

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IV. HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE	Not yet established
EFFECTS OF OVEREXPOSURE	Liquid may cause skin and eye irritation. Vapors may cause transient asymptomatic clouding of the cornea of the eye. Breathing of vapors may be irritating and cause nausea and vomiting.
EMERGENCY AND FIRST AID PROCEDURES	If inhaled, remove to fresh air, and call a physician. Flush skin and eye contact with plenty of water for at least 15 minutes and get medical care for eyes.

V. REACTIVITY DATA

STABILITY		CONDITIONS TO AVOID	None
UNSTABLE	STABLE		
—	✓		
INCOMPATIBILITY (materials to avoid)		Avoid contamination with strong mineral acids.	
HAZARDOUS DECOMPOSITION PRODUCTS		Thermal decomposition may produce nitrogen oxides, carbon monoxide and/or carbon dioxide.	
HAZARDOUS POLYMERIZATION		CONDITIONS TO AVOID	None
May Occur	Will not Occur		
—	✓		

VI. SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED	Flush heavily with water.
WASTE DISPOSAL METHOD	Incinerate in a furnace.

VII. SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION (specify type)		Air-supplied mask in confined areas	
VENTILATION	LOCAL EXHAUST	Preferred	SPECIAL —
	MECHANICAL (general)	—	OTHER —
PROTECTIVE GLOVES		Plastic	EYE PROTECTION Vapor-proof goggles
OTHER PROTECTIVE EQUIPMENT		Eye bath and safety shower	

VIII. SPECIAL PRECAUTIONS

N-METHYL MORPHOLINE

WARNING! FLAMMABLE.

LIQUID MAY CAUSE EYE INJURY AND SKIN IRRITATION.
BREATHING OF VAPOR MAY BE HARMFUL.

Keep away from heat, sparks, and fire.

Do not leave container open.

Use with adequate ventilation.

Avoid prolonged or repeated breathing of vapor.

Avoid contact with eyes, skin, or clothing.

In case of contact with eyes or skin, immediately flush with plenty of water for at least 15 minutes; for eyes get medical attention.

DO NOT LEAVE CONTAINER OPEN. EXPOSURE TO AIR MAY CAUSE
SLOW DETERIORATION.

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PRECAUTIONARY LABELING

OTHER HANDLING AND
STORAGE CONDITIONS