TRIMETHYLAMINE (TMA)

Specifications

CAS NO.

CAS NO.	75-50-3

NATURE

NATURE	It is available as anhydrous (Liquified gas under pressure) & 30% solution (Clear, Colourless liquid)

COMPOSITION

Composition	

PHYSICAL PROPERTIES (FOR ANHYDROUS)

Empirical Formula	C3H9N
Structural formula	(CH3)3N
Molecular Wt.	59.11
Refractive Index	1.345
Colour (APHA) Max	15
Solubility in Water	Soluble
Autoignition Temperature	190 °C
Flammability Limits	L E L: 2 Vol % H E L: 11 Vol %
Critical Temperature	160.1 °C
Critical Pressure	40.2 Atm.

PHYSICAL PROPERTIES (For Anhydrous)

Sp. gravity at 25 °C	0.627
Boiling Point	2.9 °C
Freezing Point	-117.3 °C
Flash Point	----

PHYSICAL PROPERTIES (For 30% solution)

Sp. gravity at 25 °C	0.930
Boiling Point	38 °C
Freezing Point	-5 °C
Flash Point	<0 °C

Vapour Pressure (For Anhydrous)

Temperature in °C	Pressure in kg/cm2
20	1.9
40	3.2
60	6.2

Vapour Pressure (For 30% solution)

Temperature in °C	Pressure in kg/cm2
20	0.5
40	1.2
60	2.4

SPECIFICATIONS (For Anhydrous)

Content	Units %
Purity	99.50 min
Water	00.20 max
Ammonia	00.02 max
Other Amines/NOI	00.25 max

SPECIFICATIONS (For 30% solution)

Content	Units %
Purity	30.00 min
Water	69.70 max
Ammonia	00.02 max
Other Amines/NOI	00.20 max

MSDS

FIRE PROPERTIES

- Extremely flammable compounds.

PREVENTIVE MEASURRS

1. PERSONAL PROTECTIVE EQUIPMENTS	• PVC suits, PVC gloves, PVC hoods, rubber goggles and gum boots are recommended to wear while doing any maintenance jobs. • Air masks or catridge masks are recommended for respiratory systems.
2. LEAKS AND SPILLS	• In case of leaks , Isolate the source from leaking point to reduce the pressure. • Do not use water jets, but only water curtains.
3. HANDLING	• All equipments and containers are to be grounded properly to avoid any ignition from the static charges. • TriMethylamines are highly corrosive to Aluminum, Copper, Zinc and their alloys. • While loading into or unloading from the tanker, a must be taken to avoid direct contact of methylamines with mercury as it forms explosive mixture.
4. STORAGE	• Anhydrous methylamiens storage and their storage yards are to got approved from the Department of explosive. • No Aluminum,Copper,Zinc or their alloys shall be used.
5. SHIPPING	• All the amines are highly soluble in water. Their 40 % solutions can be filled in atmospheric pressure road tankers, tankcars or drums. But, a drum of thicker size is recommended for Indian conditions as the ambient temperatures can be high.

FIRST AID MEASURE

1. SKIN	• Strip Contaminated clothing from the body. • Do not use any ointments on the skin. • Cover the injured area with dry clothing or

	dressing.
2. EYES	• Immediately flush the eyes thoroughly with plenty of water kepping the eye lids wide open. • Do not use any ointments on the skin.
3. INHALATION	• Remove the victim atones to fresh air. If brathing is stopped artifical respiration should be administered.

Applications

DRUGS & PHARMACEUTICALS: Choline derivative manufactured from TMA are used in medication of liver disorders. Used directly as Acid binder in the manufacture of Sulpha Drugs.

AGRO CHEMICALS: To manufacture plant growth controllers like Cycocel or Chloromequat Chloride (2-Chloroethyl trim ethyl ammonium chloride).

ANIMAL FEED: Animal/poultry feed additive like choline chloride is manufactured from TMA

ION EXCHANGE: To manufacture Ion exchange Resins based on Chloromethylated Polystyrene.

SURFACE ACTIVE AGENTS: Used in the manufacture of Alkyl Quaternary Ammonium salts used as germicides.and fabric softners with antistatic properties.

MISCELLANEOUS: Acceleration of polymerisation of Methyl Methacrylate derivative. Quatrnary ammonium salts of Trimethylamine are used as phase Transfer catalyst.

PACKING: Anhydrous & Aqueous solutions offered in bulk Road Tankers.
Aqueous solution is offered in 210 litre capacity UN Approved M.S. drum containing 170 kg net of TMA.
Small quantities of Anhydrous material can also be made available in cylinders provided by the customer on request.

IMDG CLASS: Anhydrous Class 2
Solution Class 3

UN NO. : Anhydrous 1083
Solution 1297