

## Tri-Methyl Amine Hydrochloride (TMA HCL)

### Specifications

#### CAS NO.

|         |          |
|---------|----------|
| CAS NO. | 593-81-7 |
|---------|----------|

#### COMPOSITION

|             |  |
|-------------|--|
| Composition | It is a colourless liquid available as 65% solution. Also Available as white crystal line powder and solution with strength above 57 % |
|-------------|--|

#### PHYSICAL PROPERTIES

|                              |  |
|------------------------------|--|
| Empirical Formula            | CH <sub>4</sub> NCL                    |
| Structural formula           | (CH <sub>3</sub> ) <sub>3</sub> -N-HCL |
| Molecular Wt.                | 92.54                                  |
| Specific Gravity at 20/20 °C | 1.029-1.037                            |
| Boiling Point                | 136 °C                                 |
| Colour (APHA) Max            | 30                                     |
| Solubility in Water          | Soluble                                |
| Flammability                 | non Flammable                          |
| pH                           | 5.0 - 6.0                              |
| LD 50                        | IVN : 325 mg/kg on mice.               |

#### SPECIFICATIONS (For 57% Sol)

|         |          |
|---------|----------|
| TMA HCL | 57 % min |
| Water   | 43 % max |

#### SPECIFICATIONS (For 65% Sol)

|         |          |
|---------|----------|
| TMA HCL | 65 % min |
| Water   | 35 % max |

#### SPECIFICATIONS (White Crystalline Powder)

|             |       |
|-------------|-------|
| Assay (min) | 99.0% |
|-------------|-------|

|                 |            |
|-----------------|------------|
| M.C. (max)      | 0.5 %      |
| Melting Range   | 280-282 °C |
| pH in 10% Soln. | 5.0 - 6.5  |

## MSDS

### EFFECT ON HEALTH

- It gives a possible allergic reaction if ingested with the skin, Nausea Headache, irritates the eyes and skin .

### FIRST AID

#### 1. INHALATION

- May cause irritation of respiratory tract. Remove to fresh air tract.

#### 2. EYES

- May cause irritation. Flush with copious quantities of water.

#### 3. SKIN

- May cause irritation. Flush with copious quantities of water.

#### 4. INGESTION

- May cause irritation Flush out mouth with water.

### SPECIAL PROTECTION INFORMATION.

#### 1. Ventilation

- Adequate.

#### 2. Local Exhaust

- Recommended.

#### 3. Material

- Recommended.

- 4. Protective Gloves
  - Rubber
  
- 5. Eye Protection
  - Safety Goggles.

#### **SPECIAL PRECAUTION LEAK PROCEDURE**

- Store in tight container. This material should be handled and stored as per label and other instructions to ensure product identity.
- Avoid contact with eyes, skin or clothing. Avoid breathing dust or mist wash thoroughly after handling wear fresh clothing daily.
- Wear approved respirator and chemically compatible gloves. Vacuum and sweep up spillage.

#### **Applications**

**ANIMAL FEED:** It is used in manufacture choline chloride which is used as animal feed and in pharmaceuticals.

**MISCELLANEOUS:** It is used in performance chemicals & speciality chemicals.

**STORAGE & HANDLING:** Keep container tightly closed suitable for any general chemical storage area.

Storage & Handling area should be well ventilated to keep vapour concentration at its lowest.

Store in fibre glass storage containers. Piping - schedule 40 seamless carbon steel (A106B), schedule 10 stainless steel pipe can be used without corrosion problems, provided that the pipe remains filled with TMA HCL. Material (Solution) can be stored in drums & tanks.. They should be checked for leaks before filling and during prolonged storage. Avoid contact with eyes, skin and clothing. Do not breathe vapour. Wash thoroughly after handling.

**PACKAGING:** Aqueous solution is offered in 210 Itr. capacity HMHDPE drum containing 200 Kg. net of TMA HCL. Crystalline powder is offered in HDPE\_bags I Drums with 25kg net wt. Also can be offered in 50 kg Fibre Drums.

**FIRST AID INGESTION:** Call a physician

**INHALATION:** If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.

**SKIN CONTACT:** In case of contact, flush skin with water.

**EYE CONTACT:** Immediately flush with water for 15 minutes.

**FIRE RISK:** Flash point N.A.  
Auto Ignition N.A.  
Flammable Limits N.A.

Fire Extinguisher Media - Water, fog, alcohol foam. Evacuate enclosed area. Stay upwind and avoid smoke and fumes. If smoke and fumes cannot be avoided, wear chemical-proof suit and breathing air supply.

**HAZARDOUS COMBUSTION:** Above 1300C, possible emission of Trimethylamine at 200°C, sinters& sub-limes.

**PRODUCTS:** Above 277-2780C (decomposition temp.) possible emission of NO and HCL fumes.