



## MATERIAL SAFETY DATA SHEET (MSDS)

### SECTION 1: Identification

#### 1.1 Product identifiers

**Product Name :** Trimethylamine aqueous solution  
**Cat No.:** AC370780000; AC370780010; AC370780025;  
AC370780100;AC370785000  
**CAS No. :** 78-77-3

#### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended uses :** Laboratory chemicals  
**Uses advised against:** Food, drug, pesticide or biocidal product use.

#### 1.3 Details of the supplier of the safety data sheet

**Company :** Krishna Solvechem Limited.  
B/503, Sahayog, S. V. Road,  
Kandivali (West), Mumbai – 400067. India.

**Telephone :** +91-22-6123 0222

**Email :** exports@kscl.co.in

#### 1.4 Emergency telephone number

**Emergency Phone :** +91-8657457330

### SECTION 2: Hazards identification

#### 2.1 Classification

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Flammable liquids	(Category 1)
Acute oral toxicity	(Category 4)
Acute inhalation toxicity – vapors	(Category 4)
Skin Corrosion/Irritation	(Category 1 B)
Serious Eye Damage/Eye Irritation	(Category 1)
Specific target organ toxicity (single exposure)	(Category 3)
Target Organs - Respiratory system.	

#### 2.2 Label elements

**Pictogram :**



**Signal word** Danger

**Hazard statement (s)** Highly flammable liquid and vapor  
Causes severe skin burns and eye damage



**Precautionary statement (s)**

**Prevention**

Harmful if swallowed or if inhaled  
May cause respiratory irritation

Wash face, hands and any exposed skin thoroughly after handling  
Wear protective gloves/protective clothing/eye protection/face protection  
Avoid breathing dust/fume/gas/mist/vapors/spray  
Use only outdoors or in a well-ventilated area  
Keep away from heat/sparks/open flames/hot surfaces. - No smoking  
Keep container tightly closed  
Ground/bond container and receiving equipment  
Use explosion-proof electrical/ventilating/lighting/equipment  
Use only non-sparking tools  
Take precautionary measures against static discharge  
Keep cool

**Inhalation :**

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing  
Call a POISON CENTER or doctor/physician if you feel unwell

**IF ON SKIN (or hair):**

If skin irritation occurs: Get medical advice/attention  
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower  
Wash contaminated clothing before reuse

**Eyes:**

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing  
If eye irritation persists: Get medical advice/attention

**Ingestion:**

Rinse mouth. Do NOT induce vomiting

**Fire**

In case of fire: Use CO<sub>2</sub>, dry chemical, or foam for extinction

**Storage:**

Store locked up  
Store in a well-ventilated place.  
Keep container tightly closed



<b>Hazards not otherwise classified (HNOC)</b>	<b>Disposal:</b> Dispose of contents/container to an approved waste disposal plant None identified
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### SECTION 3: Composition / information on ingredients

<b>3.1</b>		
Component	CAS-No	Weight %
Water	7732-18-5	50 – 55
Trimethylamine	75-50-3	45 – 50

### SECTION 4: First aid measures

<b>4.1 Description of first aid measures</b>	
<b>If inhalation :</b>	Remove to fresh air. If breathing is difficult, give oxygen. Immediate medical attention is required. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.
<b>In case of skin contact :</b>	Wash off immediately with plenty of water for at least 15 minutes. If skin irritation persists, call a physician.
<b>In case of eye contact :</b>	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention.
<b>Ingestion :</b>	Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Call a physician or poison control center immediately.
<b>4.2 Most important symptoms and effects :</b>	Causes burns by all exposure routes. Difficulty in breathing. Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated: Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation: Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting
<b>4.3 Notes to Physician :</b>	Treat symptomatically

### SECTION 5: Firefighting effects

<b>5.1 Extinguishing media</b>	
<b>Suitable extinguishing media</b>	Carbon dioxide (CO <sub>2</sub> ). Dry chemical. Water mist may be used to cool closed containers. Chemical foam. Flooding quantities of water. Water mist may be used to cool closed containers.
<b>Unsuitable Extinguishing Media :</b>	No information available
<b>5.2 Flash Point :</b>	-45 °C / -49 °F
<b>Method :</b>	No information available



<b>Autoignition Temperature:</b>	255 °C / 491 °F
<b>Explosion Limits:</b>	
<b>Upper</b>	16.6%
<b>Lower</b>	2%
<b>Sensitivity to Mechanical Impact</b>	No information available
<b>Sensitivity to Static Discharge</b>	No information available
<b>Specific Hazards Arising from the Chemical :</b>	Extremely flammable. Vapors may form explosive mixtures with air. Vapors may travel to source of ignition and flash back. Containers may explode when heated. Vapors may form explosive mixtures with air.
<b>Hazardous Combustion Products :</b>	Carbon monoxide (CO). Carbon dioxide (CO <sub>2</sub> ). Nitrogen oxides

<b>5.4 Protective Equipment and Precautions for Firefighters:</b>	As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.			
<b><u>NFPA:</u></b>	<b>Health</b>	<b>Flammability</b>	<b>Instability</b>	<b>Physical hazards</b>
	3	4	0	N/A

## SECTION 6: Accidental release measures

<b>6.1 Personal precautions, protective equipment and emergency procedures</b>
Remove all sources of ignition. Take precautionary measures against static discharges
<b>6.2 Environmental precautions</b>
Should not be released into the environment. See section 12 for additional Ecological Information
<b>6.3 Methods and materials for containment and cleaning up</b>
Keep in suitable, closed containers for disposal. Soak up with inert absorbent material. Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment.

## SECTION 7: Handling and storage

<b>7.1 Precautions for safe handling</b>
Avoid contact with skin and eyes. Do not breathe dust. Do not breathe mist/vapors/spray. Handle product only in closed system or provide appropriate exhaust ventilation. Use spark-proof tools and explosion-proof equipment. Use only non-sparking tools. Keep away from open flames, hot surfaces and sources of ignition. To avoid ignition of vapors by static electricity discharge, all metal parts of the equipment must be grounded. Take precautionary measures against static discharges.



## 7.2 Conditions for safe storage

Keep in a dry, cool and well-ventilated place. Keep container tightly closed. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Keep container tightly closed in a dry and well-ventilated place. Keep away from heat, sparks and flame. Refrigerator/flammables. Incompatible Materials. Acids. Strong oxidizing agents. Halogens. Peroxides. Acid anhydrides. Acid chlorides. Metals. copper.

## SECTION 8: Exposure controls/personal protection

### 8.1 Exposure Guidelines

Component	ACGIH TLV	OSHA PEL	NIOSH IDLH	Mexico OEL (TWA)
Trimethylamine ...%	TWA: 5 ppm STEL: 15 ppm	(Vacated) TWA: 10 ppm (Vacated) TWA: 24 mg/m <sup>3</sup> (Vacated) STEL: 15 ppm (Vacated) STEL: 36 mg/m <sup>3</sup>	TWA: 10 ppm TWA: 24 mg/m <sup>3</sup> STEL: 15 ppm STEL: 36 mg/m <sup>3</sup>	TWA: 5 ppm STEL: 15 ppm

#### Engineering Measures

Use explosion-proof electrical/ventilating/lighting/equipment. Ensure that eyewash stations and safety showers are close to the workstation location. Ensure adequate ventilation, especially in confined areas.

### 8.2 Exposure controls

#### Personal protective equipment -

##### Eye / Face protection

Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

##### Skin protection and body protection

Wear appropriate protective gloves and clothing to prevent skin exposure.

##### Respiratory protection

Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

##### Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice..

## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

a) Appearance	Colorless Liquid
b) Odour	Rotten – egg like
c) Odour Threshold	No information available
d) pH	13
e) Melting point / freezing point	-2 °C / 28.4 °F
f) Initial boiling point and	< 30 - 100 °C / 86 - 212 °F



<b>boiling range</b>	
<b>g) Flash point</b>	-45 °C / -49 °F
<b>h) Evaporation rate</b>	No information available
<b>i) Flammability (solid, gas)</b>	Not applicable
<b>j) Upper/lower flammability or explosive limits</b>	16.6% 2%
<b>k) Vapour pressure</b>	600 mbar @ 20 °C
<b>l) Vapour density</b>	No information available
<b>m) Specific Gravity</b>	0.860
<b>n) Solubility</b>	No information available
<b>o) Partition coefficient: n octanol/water</b>	No data available
<b>p) Auto-ignition temperature</b>	255 °C / 491 °F
<b>q) Decomposition temperature</b>	No information available
<b>r) Viscosity</b>	No information available
<b>s) Molecular formula</b>	C3 H9 N
<b>t) Molecular Weight</b>	59.11

### SECTION 10: Stability and Reactivity

<b>10.1 Reactive Hazard :</b>	None known, based on information available
<b>10.2 Chemical stability :</b>	Stable under normal conditions.
<b>10.3 Possibility of hazardous reactions :</b>	None under normal processing.
<b>10.4 Conditions to avoid :</b>	Keep away from open flames, hot surfaces and sources of ignition. Excess heat. Burning produces obnoxious and toxic fumes. Incompatible products.
<b>10.5 Incompatible materials:</b>	Acids, Strong oxidizing agents, Halogens, Peroxides, Acid anhydrides, Acid chlorides, Metals, copper
<b>10.6 Hazardous decomposition products :</b>	Carbon monoxide (CO), Carbon dioxide (CO <sub>2</sub> ), Nitrogen oxides
<b>10.7 Hazardous Polymerization</b>	Hazardous polymerization does not occur



## SECTION 11: Toxicological information

### 11.1

#### Information on toxicological effects

##### Acute toxicity:

##### Product Information:

**Oral LD50** Category 4. ATE = 300 - 2000 mg/kg.  
**Dermal LD50** Based on ATE data, the classification criteria are not met. ATE > 2000 mg/kg.  
**Vapor LC50** Category 4. ATE = 10 - 20 mg/l.

##### Component Information

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Trimethylamine ...%	LD50 = 1200 mg/kg ( Rat )	LD50 > 5000 mg/kg ( Rat )	LC50 > 5.9 mg/L ( Rat ) 4 h

**Toxicologically Synergistic Products** No information available

#### Delayed and immediate effects as well as chronic effects from short and long-term exposure

**Irritation :** May cause irritation of respiratory tract

**Sensitization:** No information available

**Carcinogenicity :** The table below indicates whether each agency has Any ingredient as a carcinogen.

Component	CAS No	IARC	NTP	ACGIH	OSHA	Mexico
Water	7732-18-5	Not listed	Not listed	Not listed	Not listed	Not listed
Trimethylamine ...%	75-50-3	Not listed	Not listed	Not listed	Not listed	Not listed

**Mutagenic Effects:** Not mutagenic in AMES Test

**Reproductive Effects:** No information available.

**Developmental Effects :** No information available.

**Teratogenicity:** No information available.

**STOT - single exposure :** Respiratory system

**STOT - repeated exposure:** None known

**Aspiration hazard :** No information available.

**Symptoms / effects, both acute and delayed:** Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated: Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation: Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting

**Endocrine Disruptor Information :** No information available

**Other Adverse Effects :** The toxicological properties have not been fully investigated.



## SECTION 12: Ecological information

### 12.1

#### Ecotoxicity:

Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment. The product contains following substances which are hazardous for the environment.

Component	Freshwater Algae	Freshwater Fish	Microtox	Water Flea
Trimethylamine ...%	EC50: = 74.2 mg/L, 96h(Desmodesmus subspicatus) EC50: = 98.8 mg/L, 72h (Desmodesmus subspicatus)	Not listed	Not listed	EC50: = 139 mg/L, 48h (Daphnia magna Straus)

**12.2 Persistence and degradability:** Persistence is unlikely based on information Available.

**Bioaccumulation/ Accumulation** No information available

**12.3 Mobility:** Will likely be mobile in the environment due to its volatility.  
**Log pow : 0.245**

## SECTION 13: Disposal considerations

**13.1 Waste treatment methods:** Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

## SECTION 14: Transport information

### 14.1 UN number :

DOT : UN1297      TDG : UN1297  
IATA : UN1297      IMDG : UN1297

### 14.2 UN proper shipping name

**DOT :** TRIMETHYLAMINE, AQUEOUS SOLUTIONS

**TDG :** TRIMETHYLAMINE, AQUEOUS SOLUTION

**IMDG :** TRIMETHYLAMINE, AQUEOUS SOLUTIONS

**IATA :** TRIMETHYLAMINE, AQUEOUS SOLUTION

**14.3 Transport hazard class(es)**      DOT: 3      TDG: 3      IMDG: 3      IATA: 3

**14.4 Packaging group:**      DOT: I      TDG: I      IMDG: I      IATA: I

## SECTION 15: Regulatory information

### 15.1 United states of America Inventory:

Component	CAS No	TSCA	TSCA Inventory notification - Active-Inactive	TSCA - EPA RegulatoryFlags
Water	7732-18-5	X	ACTIVE	-
Trimethyl amine ...%	75-50-3	X	ACTIVE	-

**Legend:**





**TSCA - Toxic Substances Control Act, (40 CFR Part 710)**

X - Listed

'-' - Not Listed

**TSCA 12(b) - Notices of Export** Not applicable

**International Inventories:**

Canada (DSL/NDSL), Europe (EINECS/ELINCS/NLP), Philippines (PICCS), Japan (ENCS), Japan (ISHL), Australia(AICS), China (IECSC), Korea (ECL).

Component	CAS-No	DSL	NDSL	EINECS	PICCS	ENCS	ISHL	AICS	IECSC	KECL
Water	7732-18-5	X	-	231-791-2	X	X		X	X	KE-35400
Trimethylamine ...%	75-50-3	X	-	200-875-0	X	X	X	X	X	KE-11508

**U.S. Federal Regulations**

**SARA 313**

Not applicable

**SARA 311/312 Hazard Categories**

See section 2 for more information

**CWA (Clean Water Act)**

Component	CWA - Hazardous Substances	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants
Trimethylamine ...%	X	100 lb	-	-

**Clean Air Act**

Not applicable

**OSHA - Occupational Safety and Health Administration**

Not applicable

**CERCLA**

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

Component	Hazardous Substances RQs	CERCLA EHS RQs
Trimethylamine ...%	100 lb	-

**California Proposition 65**  
chemicals.

This product does not contain any Proposition 65

**15.2 U.S. State Right-to-Know Regulations:**

Component	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
Water	-	-	X	-	-
Trimethylamine ...%	X	X	X	-	X

**U.S. Department of Transportation**

Reportable Quantity (RQ): Y



DOT Marine Pollutant N  
 DOT Severe Marine Pollutant N

**U.S. Department of Homeland Security** -This product contains the following DHS chemicals: **Legend –**  
 STQs = Screening Threshold Quantities, APA = A placarded amount

**Other International Regulations**

**Mexico – Grade** No information available

**Safety, health and environmental regulations/legislation specific for the substance or mixture**

Component	CAS No	OECD HPV	Persistent Organic Pollutant	Ozone Depletion Potential	Restriction of Hazardous Substances (RoHS)
Water	7732-18-5	Listed	Not applicable	Not applicable	Not applicable
Trimethylamine ...%	75-50-3	Listed	Not applicable	Not applicable	Not applicable

Component	CAS No	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Major Accident Notification	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Safety Report Requirements	Rotterdam Convention (PIC)	Basel Convention (Hazardous Waste)
Water	7732-18-5	Not applicable	Not applicable	Not applicable	Not applicable
Trimethylamine ...%	75-50-3	Not applicable	Not applicable	Not applicable	Not applicable

**SECTION 16: Other information**

**16.1 Prepared By:** Regulatory affairs  
 Krishna Solvechem Limited  
**Email:** exports@kscl.co.in  
**Creation Date:** 23-Mar-2012  
**Revision Date:** 19-Jun-2023  
**Print Date:** 19-Jun-2023  
**Revision Summary:** This document has been updated to comply with the US OSHA HazCom 2012 Standard replacing the current legislation under 29 C F R 1910.1200 to align with the Globally Harmonized System of Classification and Labeling of Chemicals (GHS).

**16.2 Disclaimer:**

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

