



## MATERIAL SAFETY DATA SHEET (MSDS)

### SECTION 1: Identification

#### 1.1 Product identifiers

**Product Name :** Tetraethylammonium Bromide

**Cat No.:** 04602 - 500

**CAS No. :** 71-91-0

#### 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)

Serious Eye Damage/Eye Irritation	(Category 2 B)
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#### 2.2 Label elements

**Signal word** Warning

**Hazard statement (s)** Causes eye irritation

**Precautionary statement (s)**

**Prevention** Wash hands and face thoroughly after handling

**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

**Hazards not otherwise classified (HNOC)**

Harmful to aquatic life with long lasting effects



### SECTION 3: Composition / information on ingredients

#### 3.1

Component	CAS-No	Weight %
Ethanaminium, N,N,N-triethyl-, bromide	71-91-0	<=100

### SECTION 4: First aid measures

#### 4.1 Description of first aid measures

**If inhalation :** Remove to fresh air. If not breathing, give artificial respiration. Get medical attention if symptoms occur.

**In case of skin contact :** Wash off immediately with plenty of water for at least 15 minutes. If skin irritation persists, call a physician.

**In case of eye contact :** Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention.

**Ingestion :** Clean mouth with water and drink afterwards plenty of water.

**4.2 Most important symptoms and effects :** None reasonably foreseeable

**4.3 Notes to Physician :** Treat symptomatically

### SECTION 5: Firefighting effects

#### 5.1 Extinguishing media

**Suitable extinguishing media** No information available

**Unsuitable Extinguishing Media: :** No information available

**5.2 Flash Point :** Not applicable  
**Method :** No information available



<b>Autoignition Temperature:</b>	No information available
<b>Explosion Limits:</b>	
<b>Upper</b>	No data available
<b>Lower</b>	No data available
<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>	Thermal decomposition can lead to release of irritating gases and vapors. Keep product and empty container away from heat and sources of ignition.
<b>Hazardous Combustion Products :</b>	Nitrogen oxides(NOx). Hydrogen bromide

**5.4 Protective Equipment and Precautions for Firefighters:** 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>
	2	1	1	N/A

## SECTION 6: Accidental release measures

### 6.1 Personal precautions, protective equipment and emergency procedures

Use personal protective equipment as required. Ensure adequate ventilation. Avoid dust formation.

### 6.2 Environmental precautions

Should not be released into the environment. See Section 12 for additional Ecological Information. Avoid release to the environment. Collect spillage. Do not flush into surfacewater or sanitary sewer system.

### 6.3 Methods and materials for containment and cleaning up

Sweep up and shovel into suitable containers for disposal. Avoid dust formation.

## SECTION 7: Handling and storage

### 7.1 Precautions for safe handling

Wear personal protective equipment/face protection. Ensure adequate ventilation. Avoid contact with skin, eyes or clothing. Avoid ingestion and inhalation. Avoid dust formation.



## 7.2 Conditions for safe storage

Keep containers tightly closed in a dry, cool and well-ventilated place. Store under an inert atmosphere. Protect from moisture. Incompatible Materials. Bases.

## SECTION 8: Exposure controls/personal protection

### 8.1 Exposure Guidelines

This product does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

#### Engineering Measures

None under normal use conditions.

### 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

No protective equipment is needed under normal use conditions

##### Recommended Filter type:

Particle filter.

##### 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	Light cream solid powder
b) Odour	Odorless
c) Odour Threshold	No information available
d) pH	6.5 10% aq. solution
e) Melting point / freezing point	285 °C / 545 °F
f) Initial boiling point and	Not applicable



<b>boiling range</b>	
<b>g) Flash point</b>	Not applicable
<b>h) Evaporation rate</b>	Not applicable
<b>i) Flammability (solid, gas)</b>	Not applicable
<b>j) Upper/lower flammability or explosive limits</b>	No data available No data available
<b>k) Vapour pressure</b>	Negligible
<b>l) Vapour density</b>	Not applicable
<b>m) Specific Gravity</b>	1.4
<b>n) Solubility</b>	Soluble in water
<b>o) Partition coefficient: n octanol/water</b>	No data available
<b>p) Auto-ignition temperature</b>	No information available
<b>q) Decomposition temperature</b>	286°C.
<b>r) Viscosity</b>	Not applicable
<b>s) Molecular formula</b>	(C <sub>2</sub> H <sub>5</sub> ) <sub>4</sub> NBr
<b>t) Molecular Weight</b>	210.0507

### SECTION 10: Stability and Reactivity

<b>10.1 Reactive Hazard :</b>	None known, based on information available
<b>10.2 Chemical stability :</b>	Hygroscopic
<b>10.3 Possibility of hazardous reactions :</b>	None under normal processing.
<b>10.4 Conditions to avoid :</b>	Avoid dust formation. Excess heat. Exposure to moist air or water. Incompatible products.
<b>10.5 Incompatible materials:</b>	Bases
<b>10.6 Hazardous decomposition products :</b>	Nitrogen oxides (NO <sub>x</sub> ), Hydrogen bromide
<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:** No acute toxicity information is available for this product

##### **Component Information**

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Ethanaminium, N,N,N-triethyl-, bromide	LD50 = 2800 mg/kg bw (Rat) OECD 401	LD50 > 2000 mg/kg (Rat) OECD 402	Not listed

**Toxicologically Synergistic Products** No information available

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

**Irritation :** Irritating to eyes, respiratory system and skin

**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
Ethanaminium, N,N,N-triethyl-, bromide	71-91-0	Not listed	Not listed	Not listed	Not listed	Not listed

**Mutagenic Effects:** No information available.

**Reproductive Effects:** No information available.

**Developmental Effects :** No information available.

**Teratogenicity:** No information available.

**STOT - single exposure :** None known

**STOT - repeated exposure:** None known

**Aspiration hazard :** No information available.

**Symptoms / effects, both acute and delayed:** No information available

**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	Freshwa terAlgae	Freshwa ter Fish	Microtox	Water Flea
Ethanamin ium,N,N,N -triethyl- bromide	Not listed	Not listed	Not listed	EC50: 65.6 mg/L/48 h(Daphni a magna)

**12.2 Persistence and degradability:** Persistence is unlikely

#### Bioaccumulation/ Accumulation

No information available

### 12.3 Mobility:

Will likely be mobile in the environment due to its water solubility. Log Pow: -1.6

## 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 DOT :** Not regulated  
**TDG :** Not regulated  
**IATA :** Not regulated  
**IMDG :** Not regulated

## SECTION 15: Regulatory information

### 15.1 United states of America Inventory:

Component	CAS No	TSCA	TSCA Inventory notification - Active-Inactive	TSCA - EPA RegulatoryFlags
Ethanaminium, N,N,N-triethyl- bromide	71-91-0	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
Ethanaminium, N,N,N-triethyl-, bromide	71-91-0	X	-	200-769-4	X	X	X	X	X	KE-34221

**U.S. Federal Regulations**

**SARA 313** Not applicable

**SARA 311/312 Hazard Categories** See section 2 for more information

**CWA (Clean Water Act)** Not applicable

**Clean Air Act** Not applicable

**OSHA - Occupational Safety and Health Administration** Not applicable

**CERCLA** Not applicable

**California Proposition 65** This product does not contain any Proposition 65 chemicals.

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

Not applicable

**U.S. Department of Transportation**

Reportable Quantity (RQ): N

DOT Marine Pollutant N

DOT Severe Marine Pollutant N





**U.S. Department of Homeland Security** - This product does not contain the any DHS Chemicals.

**Other International Regulations**

**Mexico – Grade**

No information available

**Authorization/Restrictions according to EU REACH**

Component	CAS No	REACH (1907/2006) - Annex XIV - Substances Subject to Authorization	REACH (1907/2006) - Annex XVII - Restrictions on Certain Dangerous Substances	REACH Regulation (EC 1907/2006) article 59 - Candidate List of Substances of Very High Concern (SVHC)
Ethanaminium, N,N,N-triethyl-, bromide	71-91-0	-	Use restricted. See item 75.	-

**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)
Ethanaminium, N,N,N-triethyl-, bromide	71-91-0	Not applicable	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)
Ethanaminium, N,N,N-triethyl-, bromide	71-91-0	Not applicable	Not applicable	Not applicable	Not applicable

**SECTION 16: Other information**

**16.1 Prepared By:** Regulatory affairs  
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**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.