



## MATERIAL SAFETY DATA SHEET (MSDS)

### SECTION 1: Identification

#### 1.1 Product identifiers

**Product Name :** Benzotrichloride  
**Cat No.:** AC164530000; AC164530010; AC164530050  
**CAS No. :** 98-07-7

#### 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)

Acute oral toxicity	(Category 4)
Acute Inhalation Toxicity - vapors	(Category 3)
Skin Corrosion/Irritation	(Category 2)
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)**

Harmful if swallowed



**Precautionary statement (s)**

Causes skin irritation  
Causes serious eye damage  
Toxic if inhaled.  
May cause cancer  
May cause respiratory irritation

**Prevention**

Wash face, hands and any exposed skin thoroughly after handling  
Avoid breathing dust/fume/gas/mist/vapors/spray  
Use only outdoors or in a well-ventilated area  
Do not eat, drink or smoke when using this product  
Use personal protective equipment as required  
Do not handle until all safety precautions have been read and understood  
Obtain special instructions before use

**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:**

IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell. Rinse mouth

**Storage:**

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



	<b>Disposal:</b> Dispose of contents/container to an approved waste disposal plant
<b>Hazards not otherwise classified (HNOC)</b>	WARNING Cancer

### SECTION 3: Composition / information on ingredients

**3.1**

Component	CAS-No	Weight %
Benzotrichloride	98-07-7	98

### SECTION 4: First aid measures

**4.1 Description of first aid measures**

<b>If inhalation :</b>	Remove to fresh air. If not breathing, give artificial respiration. Get medical attention if symptoms occur.
<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>	Clean mouth with water and drink afterwards plenty of water.
<b>4.2 Most important symptoms and effects :</b>	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

**5.1 Extinguishing media**

<b>Suitable extinguishing media</b>	No information available
<b>Unsuitable Extinguishing Media: :</b>	No information available

**5.2 Flash Point :** 97 °C / 206.6 °F  
**Method :** No information available



<b>Autoignition Temperature:</b>	445 °C / 833 °F
<b>Explosion Limits:</b>	
<b>Upper</b>	6.50%
<b>Lower</b>	2.10%
<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>	Combustible material.
<b>Hazardous Combustion Products :</b>	Carbon monoxide (CO). Carbon dioxide (CO <sub>2</sub> ). Hydrogen chloride gas. Phosgene

<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	0	0	N/A

## SECTION 6: Accidental release measures

- 6.1 Personal precautions, protective equipment and emergency procedures**  
Ensure adequate ventilation. Use personal protective equipment as required.
- 6.2 Environmental precautions**  
See Section 12 for additional Ecological Information.
- 6.3 Methods and materials for containment and cleaning up**  
Keep in suitable, closed containers for disposal. Soak up with inert absorbent material( e.g. sand, silica gel, acid binder, universal binder, sawdust).

## SECTION 7: Handling and storage

- 7.1 Precautions for safe handling**  
Do not breathe mist/vapors/spray. Do not get in eyes, on skin, or on clothing. Handle product only in closed system or provide appropriate exhaust ventilation.



## 7.2 Conditions for safe storage

Keep in a dry, cool and well-ventilated place. Keep container tightly closed. Keep away from heat, sparks and flame. Incompatible Materials. Strong oxidizing agents.

## SECTION 8: Exposure controls/personal protection

### 8.1 Exposure Guidelines

Component	ACGIH TLV	OSHA PEL	NIOSH IDLH	Mexico OEL (TWA)
Benzotrichloride	Ceiling: 0.1 ppm Skin			Ceiling: 0.1 ppm

#### Engineering Measures

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

Wear a NIOSH/MSHA or European Standard EN 149 approved full-facepiece airline respirator in the positive pressure mode with emergency escape provisions.

##### 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	Yellow Liquid
b) Odour	Pungent
c) Odour Threshold	No information available
d) pH	No information available
e) Melting point / freezing point	-7.5 °C / 18.5 °F
f) Initial boiling point and	219 - 223 °C / 426.2 - 433.4 °F @ 760 mmHg



<b>boiling range</b>	
<b>g) Flash point</b>	97 °C / 206.6 °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>	Upper : 6.50% Lower : 2.10%
<b>k) Vapour pressure</b>	0.15 hPa @ 20 °C
<b>l) Vapour density</b>	6.77 (Air = 1.0)
<b>m) Specific Gravity</b>	1.380
<b>n) Solubility</b>	No information available
<b>o) Partition coefficient: n octanol/water</b>	No data available
<b>p) Auto-ignition temperature</b>	445 °C / 833 °F
<b>q) Decomposition temperature</b>	No information available
<b>r) Viscosity</b>	No information available
<b>s) Molecular formula</b>	C7 H5 Cl3
<b>t) Molecular Weight</b>	195.48

### SECTION 10: Stability and Reactivity

<b>10.1 Reactive Hazard :</b>	None known, based on information available
<b>10.2 Chemical stability :</b>	Moisture sensitive
<b>10.3 Possibility of hazardous reactions :</b>	None under normal processing.
<b>10.4 Conditions to avoid :</b>	Exposure to moist air or water
<b>10.5 Incompatible materials:</b>	Strong oxidizing agents
<b>10.6 Hazardous decomposition products :</b>	Carbon monoxide (CO), Carbon dioxide (CO <sub>2</sub> ), Hydrogen chloride gas, Phosgene
<b>10.7 Hazardous Polymerization</b>	No information available



## SECTION 11: Toxicological information

### 11.1

#### Information on toxicological effects

#### Acute toxicity:

#### Product Information:

#### Component Information

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Benzotrichloride	LD50 = 702 mg/kg ( Rat )	LD50 = 4 g/kg ( Rabbit )	LC50 = 0.53 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 :** No information available

**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
Benzotrichloride	98-07-7	Group 2A	Reasonably Anticipated	A2	X	A2

**Mutagenic Effects:** No information available.

**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:** 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:

Component	Freshwater Algae	Freshwater Fish	Microtox	Water Flea
Benzotrachloride	Not listed	Not listed	EC50 = 17.83 mg/L 30 min	Not listed

**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 : 2.92

## 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.

Component	RCRA - U Series Wastes	RCRA - P Series Wastes
Benzotrachloride - 98-07-7	U023	-

## SECTION 14: Transport information

### 14.1 UN number :

DOT : UN2226                      TDG : UN2226  
IATA : UN2226                      IMDG : UN2226

### 14.2 UN proper shipping name

**IMDG :** BENZOTRICHLORIDE

**IATA :** BENZOTRICHLORIDE

**14.3 Transport hazard class(es)**      DOT: 8              TDG: 8              IMDG: 8              IATA: 8

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

## SECTION 15: Regulatory information

### 15.1 United states of America Inventory:

Component	CAS-No	TSCA	TSCA Inventory notification Active/Inactive	TSCA - EPA Regulatory Flags
Benzotrachloride	98-07-7	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
Benzotrichloride	98-07-7	-	X	202-634-5	X	X	X	-	X	KE-34078

**U.S. Federal Regulations**

**SARA 313**

Component	CAS No	Weight %	SARA 313 - Threshold Values %
Benzotrichloride	98-07-7	98	0.1

**SARA 311/312 Hazard Categories**

See section 2 for more information

**CWA (Clean Water Act)**

Not applicable

**Clean Air Act**

Component	HAPS Data	Class 1 Ozone Depletors	Class 2 Ozone Depletors
Benzotrichloride	X		-

**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
Benzotrichloride	10 lb	10 lb

**California Proposition 65**

This product contains the following Proposition 65 chemicals.

Component	CAS No	California Prop. 65	Prop 65 NSRL	Category
Benzotrichloride	98-07-7	Carcinogen	-	Carcinogen

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

Component	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
Benzotrichloride	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** - This product does not contain the any DHS Chemicals.

**Security**

**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)
Benzotri chloride	98-07-7	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)
Benzotri chloride	98-07-7	0.5 tonne	2 tonne	Not applicable	Annex I - Y45

**SECTION 16: Other information**

**16.1 Prepared By:** Regulatory affairs  
 Krishna Solvechem Limited  
**Email:** exports@kscl.co.in  
**Revision Date:** 24-Dec-2022  
**Print Date:** 24-Dec-2022  
**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.