# MATERIAL SAFETY DATA SHEET (MSDS)

## SECTION 1: Identification

**1.1 Product identifiers**

**Product Name :** **Thionyl chloride**

**Cat No.:** **41868**

**CAS No. :** 7719-09-7

**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 1A) |
| 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)** Causes severe skin burns and eye damage

Harmful if swallowed
Toxic if inhaled
May cause respiratory irritation

**Precautionary statement (s)**

**Prevention**

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
Do not eat, drink or smoke when using this product

**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: Rinse mouth. Do NOT induce vomiting

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

| | | |
|---|---|---|
| | | **Disposal:**<br>Dispose of contents/container to an approved waste disposal plant |
| | **Hazards not otherwise classified (HNOC)** | Reacts violently with water. Contact with water liberates toxic gas |

## SECTION 3: Composition / information on ingredients

**3.1**

| Component | CAS-No | Weight % |
|---|---|---|
| Thionyl chloride | 7719-09-7 | <=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 :** | Do NOT induce vomiting. Call a physician immediately. Clean mouth with water. |
| **4.2** | **Most important symptoms and effects :** | Causes burns by all exposure routes. Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus shouldbe investigated: Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation |
| **4.3** | **Notes to Physician :** | Treat symptomatically |

## SECTION 5: Firefighting effects

| | | |
|---|---|---|
| **5.1** | **Extinguishing media** | |
| | **Suitable extinguishing media** | Carbon dioxide (CO2), dry chemical |
| | **Unsuitable Extinguishing Media: :** | Do not use water or foam |
| **5.2** | **Flash Point :**<br>**Method :** | No information available<br>No information available |

| | | |
|---|---|---|
| | **Autoignition Temperature:** | No information available |
| | **Explosion Limits:** | |
| | **Upper** | No data available |
| | **Lower** | No data available |
| | **Sensitivity to Mechanical Impact** | No information available |
| | **Sensitivity to Static Discharge** | No information available |
| | **Specific Hazards Arising from the Chemical :** | Contact with water liberates toxic gas. Water reactive. Produce flammable gases on contact with water. Containers may explode when heated. |
| | **Hazardous Combustion Products :** | Chlorine. Sulfur oxides. Hydrogen chloride gas. |
| **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. |

**NFPA:**

| Health | Flammability | Instability | Physical hazards |
|---|---|---|---|
| 3 | 1 | 0 | W |

## SECTION 6: Accidental release measures

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

Ensure adequate ventilation. Avoid contact with skin, eyes and inhalation of vapors. 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**

Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Keep in suitable, closed containers for disposal. Do not expose spill to water.

## 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

Corrosives area. Keep containers tightly closed in a dry, cool and well-ventilated place. Incompatible Materials. Acids. Bases. Water. Strong oxidizing agents. Alcohols. Amines.

# SECTION 8: Exposure controls/personal protection

## 8.1 Exposure Guidelines

| Component | ACGIH TLV | OSHA PEL | NIOSH | Mexico OEL (TWA) |
|---|---|---|---|---|
| Thionyl chloride | Ceiling: 0.2 ppm | (Vacated) Ceiling: 1 ppm (Vacated) Ceiling: 5 mg/m$^3$ | Ceiling: 1 ppm Ceiling: 5 mg/m$^3$ | Ceiling: 0.2 ppm |

**Legend**
**ACGIH** - American Conference of Governmental Industrial Hygienists
**OSHA** - Occupational Safety and Health Administration
**NIOSH:** NIOSH - National Institute for Occupational Safety and Health

**Engineering Measures**

Ensure that eyewash stationsand 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 StandardEN 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.

**Recommended Filter type**

Organic gases and vapours filter. Type A. Brown. conforming to EN14387.

**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 yellow Liquid |
| **b) Odour** | Strong pungent |
| **c) Odour Threshold** | No information available |
| **d) pH** | No information available |
| **e) Melting point / freezing point** | -105 °C / -157 °F |
| **f) Initial boiling point and** | 76 °C / 168.8 °F @ 760 mmHg |

| | | |
|---|---|---|
| | **boiling range** | |
| | **g) Flash point** | No information available |
| | **h) Evaporation rate** | No information available |
| | **i) Flammability (solid, gas)** | Not applicable |
| | **j) Upper/lower flammability or explosive limits** | No data available<br>No data available |
| | **k) Vapour pressure** | 124 mbar @ 20 °C |
| | **l) Vapour density** | 4.1 |
| | **m) Specific Gravity** | 1.640 |
| | **n) Solubility** | Insoluble in water |
| | **o) Partition coefficient: n octanol/water** | No data available |
| | **p) Auto-ignition temperature** | No information available |
| | **q) Decomposition temperature** | 140 °C. |
| | **r) Viscosity** | 0.6 mPa.s at 20 °C |
| | **s) Molecular formula** | Cl2 O S |
| | **t) Molecular Weight** | 118.97 |

## SECTION 10: Stability and Reactivity

| | | |
|---|---|---|
| **10.1** | **Reactive Hazard :** | Yes |
| **10.2** | **Chemical stability :** | May react with metals and lead to the formation of flammable hydrogen gas. Contact withwater liberates toxic gas. Moisture sensitive. |
| **10.3** | **Possibility of hazardous reactions :** | None under normal processing. |
| **10.4** | **Conditions to avoid :** | Protect from water. Exposure to moist air or water. Exposure to light. Incompatible products. |
| **10.5** | **Incompatible materials:** | Acids, Bases, Water, Strong oxidizing agents, Alcohols, Amines |
| **10.6** | **Hazardous decomposition products :** | Chlorine, Sulfur oxides, Hydrogen chloride gas |
| **10.7** | **Hazardous Polymerization** | Hazardous polymerization does not occur |

## SECTION 11: Toxicological information

**11.1**

**Information on toxicological effects**

**Acute toxicity:**

**Product Information:**

**Component Information**

| Component | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|
| Thionyl chloride | LD50 = 270 mg/kg ( Rat ) | Not listed | LC50 = 2.717 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 ha Any ingredient as a carcinogen.

| Component | CAS-No | IARC | NTP | ACGIH | OSHA | Mexico |
|---|---|---|---|---|---|---|
| Thionyl chloride | 7719-09-7 | 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 :** 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 causessevere swelling, severe damage to the delicate tissue and danger of perforation

**Endocrine Disruptor Information :** No information available

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

## SECTION 12: Ecological information

| | |
|---|---|
| **12.1 Ecotoxicity:** | Do not empty into drains. |
| **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 toits volatility. |

## 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 : UN1836 TDG : UN1836

IATA : UN1836 IMDG : UN1836

| | | | | |
|---|---|---|---|---|
| **14.2 UN proper shipping name** | | | | |
| **IMDG :** | THIONYL CHLORIDE | | | |
| **IATA :** | THIONYL CHLORIDE, FORBIDDEN FOR IATA TRANSPORT | | | |
| **14.3 Transport hazard class(es)** | DOT: 8 | TDG: 8 | IMDG: 8 | IATA: 8 |
| **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 Regulatory Flags |
|---|---|---|---|---|
| Thionyl chloride | 7719-09-7 | 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 |
|---|---|---|---|---|---|---|---|---|---|---|
| Thionyl chloride | 7719 -09-7 | X | - | 231-748-8 | X | X | X | X | X | KE-33794 |

**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

| Component | Specifically Regulated Chemicals | Highly Hazardous Chemicals |
|---|---|---|
| Thionyl chloride | - | TQ: 250 lb |

**CERCLA** Not applicable

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

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

| Component | Massachusetts | New Jersey | Pennsylvania | Illinois | Rhode Island |
|---|---|---|---|---|---|
| Thionyl chloride | X | X | X | - | X |

**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 contains the following DHS Chemicals.

| Component | DHS Chemical Facility Anti-Terrorism Standard |
|---|---|
| Thionyl chloride | APA |

**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) |
|---|---|---|---|---|---|
| Thionyl chloride | 7719-09-7 | Listed | Not applicable | Not applicable | Not applicable |

| Component | CAS No | Seveso III Directive (2012/18/EC) – Qualifying Quantitiesfor Major Accident Notification | Seveso III Directive (2012/18/EC) – Qualifying Quantitiesfor Safety Report Requirements | Rotterdam Convention (PIC) | Basel Convention (Hazardous Waste) |
|---|---|---|---|---|---|
| Thionyl chloride | 7719-09-7 | 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 under29 C F R 1910.1200 to align with the Globally Harmonized System ofClassification 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.