

Material Safety Data Sheet



THIONYL CHLORIDE FOR SYNTHESIS

VERSION : 05
REVISION DATE : 14/06/2025
EFFECTIVE DATE : 16/06/2025

Product Code : 19465

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1. Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Trade name : **THIONYL CHLORIDE FOR SYNTHESIS**
Product code : 19465
Identification of the product : **THIONYL CHLORIDE FOR SYNTHESIS**
CAS No : 7719- 09- 7
EC No. : 231-748-8
Synonyms : Sulphurous dichloride, Dichlorosulphoxide, Sulphur oxide dichloride

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

Identified uses : Laboratory chemicals, Manufacture of substances

1.3. Details of the supplier of the safety data sheet

Company identification MOLYCHEM INDIA LLP
Office: Maker Tower 'E', 41-A2, 4th Floor, Above Maker Arcade, Cuffe Parade, Mumbai 400 005 (INDIA)
Tel: +91 22 4066 8111, 2205 7772 .
Email : info@molychem.net
Works: Plot No. B/9, Badlapur M.I.D.C.,
OPP.Shobhavat Textile Co., Kulgaon, Badlapur (E),
Dist.-Thane-421 503.

1.4. Emergency telephone number

Emergency number : +91 22 4066 8111 (10:00am - 6:00 pm)

2. Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Acute toxicity (oral), Category 4 H302
Acute toxicity (inhal.), Category 4 H332
Skin corrosion/irritation, Category 1, Sub-Category 1A H314
Specific target organ toxicity – Single exposure, Category 3, Respiratory tract irritation H335

Full text of H- and EUH-statements: see section 16

Adverse physicochemical, human health and environmental effects

Harmful if inhaled. Harmful if swallowed. May cause respiratory irritation. Causes severe skin burns and

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eye damage.

2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms (CLP)



GHS05



GHS07

Signal word (CLP)

: Danger

Hazard statements (CLP)

: H302+H332 - Harmful if swallowed or if inhaled
H314 - Causes severe skin burns and eye damage.
H335 - May cause respiratory irritation

Precautionary statements (CLP)

: P280 - Wear protective clothing, eye protection, face protection, protective gloves
P301+P330+P331 - IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303+P361+P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water
P304+P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

2.3. Other hazards

Contains no PBT/vPvB substances $\geq 0.1\%$ assessed in accordance with REACH Annex XIII

3. Composition/information on ingredients

3.1. Substances

Name : THIONYL CHLORIDE FOR SYNTHESIS

CAS-No : 7719- 09- 7

3.2. Mixtures

Not applicable

4. First aid measures

4.1. Description of first aid measures

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First-aid measures general	: Call a physician immediately
First-aid measures after inhalation	: Remove person to fresh air and keep comfortable for breathing. Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/doctor. Call a poison center or a doctor if you feel unwell.
First-aid measures after skin contact	: Take off immediately all contaminated clothing. Rinse skin with water/shower. Immediately call a POISON CENTER/doctor. Call a physician immediately
First-aid measures after eye contact	: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/doctor. Call a physician immediately.
First-aid measures after ingestion	: Rinse mouth. Call a POISON CENTER/doctor if you feel unwell. Do NOT induce vomiting. Immediately call a POISON CENTER/doctor. Do not induce vomiting. Call a physician immediately.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms/effects after inhalation	: Harmful if inhaled. May cause respiratory irritation.
Symptoms/effects after skin contact	: Burns.
Symptoms/effects after eye contact	: Serious damage to eyes.
Symptoms/effects after ingestion	: Harmful if swallowed. Burns

4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

5. Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media	: Dry powder. Water spray. Foam. Carbon dioxide.
Unsuitable extinguishing media	: Do not use extinguishing media containing water.

5.2. Special hazards arising from the substance or mixture

Explosion hazard	: No direct explosion hazard.
Hazardous decomposition products in case of fire	: Toxic fumes may be released.

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5.3 Advice for firefighters

Firefighting instructions

: Fight fire from safe distance and protected location. Do not enter fire area without proper protective equipment, including respiratory protection

Protection during firefighting

: Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

6. Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures

: Stop leak if safe to do so. Notify authorities if product enters sewers or public waters. Absorb spillage to prevent material damage.

6.1.1. For non-emergency personnel

Emergency procedures

: Ventilate spillage area. Evacuate unnecessary personnel. Do not breathe dust, fume, gas, mist, spray, vapours. Avoid contact with skin and eyes.

6.1.2. For emergency responders

Protective equipment

: Wear recommended personal protective equipment.

Emergency procedures

: Ventilate spillage area. Evacuate unnecessary personnel. Avoid contact with skin and eyes. Do not breathe dust/fume/gas/mist/vapours/spray.

6.2. Environmental precautions

Avoid release to the environment. Do not allow water (or moist air) contact with this material.

6.3. Methods and material for containment and cleaning up

For containment

: Absorb spilled material with sand or earth. Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams. Stop leak without risks if possible.

Methods for cleaning up

: Take up liquid spill into absorbent material. Collect spillage. On land, sweep or shovel into suitable containers. Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible.

Other information

: Dispose of materials or solid residues at an authorized site.

6.4. Reference to other sections

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For further information refer to section 13.

7. Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Do not breathe dust/fume/gas/mist/vapours/spray. Avoid contact during pregnancy/while nursing. Use only outdoors or in a well-ventilated area. Avoid contact with skin and eyes. Wear personal protective equipment. Protect from moisture.

Hygiene measures : Do not eat, drink or smoke when using this product. Wash hands, forearms and face thoroughly after handling. Wash contaminated clothing before reuse. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures : Keep in a cool, well-ventilated place away from heat.

Storage conditions : Store in dry protected location to prevent any moisture contact. Store locked up. Store in a well-ventilated place. Keep container tightly closed. Protect from moisture. Store in a dry place. Store in a closed container.

Storage away from : Moisture. Water, humidity.

7.3. Specific end use(s)

No additional information available

8. Exposure controls/personal protection

8.1. Control parameters

8.1.1. National occupational exposure and biological limit values

No additional information available

8.1.2. Recommended monitoring procedures

No additional information available

8.1.3. Air contaminants formed

No additional information available

8.1.4. DNEL and PNEC

No additional information available

8.1.5. Control banding

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No additional information available

8.2. Exposure controls

8.2.1. Appropriate engineering controls

Ensure good ventilation of the work station.

8.2.2. Personal protection equipment

Eye protection : Chemical goggles or safety glasses
Hand protection : Wear protective gloves
Skin protection : Wear suitable protective clothing
Respiratory protection : Wear appropriate mask. [In case of inadequate ventilation] wear respiratory protection.
Thermal hazards : No additional information available

8.2.3 Environmental exposure controls

Avoid release to the environment

9. Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state : Liquid
Appearance : clear fuming liquid
Molecular mass : 118.97 g/mol
Colour : colourless to very pale yellow
Odour : suffocating odour.
Odour threshold : Not available
pH : Not available
Melting point : Not applicable
Freezing point : -105 °C
Boiling point : 76 – 79 °C
Flash point : Not available
Auto-ignition temperature : Not available
Decomposition temperature : 140 °C
Flammability : Non flammable.
Vapour pressure : 129 hPa at 20 °C
Relative vapour density at 20 °C : 4.1
Relative density : Not available
Density : 1.64 g/cm³
Solubility : Water: Decomposed by water
Ether: Miscible
Viscosity, kinematic : 0.366 mm²/s

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Viscosity, dynamic : 0.6 mPa·s at 25°C
Explosive limits : Not available

9.2. Other information

No additional information available

10. Stability and reactivity

10.1. Reactivity

May be corrosive to metals. Reacts violently with water.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

Highly reactive material. Reacts violently with water. Contact with water liberates toxic gas.

10.4. Conditions to avoid

Moisture. Water, humidity.

10.5. Incompatible materials

No additional information available

10.6. Hazardous decomposition products

Thermal decomposition generates : Corrosive vapours

11. Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral)	: Harmful if swallowed.
Acute toxicity (dermal)	: Not classified
Acute toxicity (inhalation)	: Harmful if inhaled.
Skin corrosion/irritation	: Causes severe skin burns.
Serious eye damage/irritation	: Assumed to cause serious eye damage
Respiratory or skin sensitisation	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified
Reproductive toxicity	: Not classified
STOT-single exposure	: May cause respiratory irritation.
STOT-repeated exposure	: Not classified
Aspiration hazard	: Not classified

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12. Ecological information

12.1. Toxicity

Ecology - general : Before neutralisation, the product may represent a danger to aquatic organisms.
Hazardous to the aquatic environment, short-term (acute) : Not classified
Hazardous to the aquatic environment, long-term (chronic) : Not classified

12.2. Persistence and degradability

No additional information available

12.3. Bioaccumulative potential

No additional information available

12.4. Mobility in soil

No additional information available

12.5. Results of PBT and vPvB assessment

No additional information available

12.6. Other adverse effects

No additional information available

13. Disposal considerations

13.1. Waste treatment methods

Waste treatment methods : Dispose of contents/container in accordance with licensed collector's sorting instructions
Sewage disposal recommendations : Disposal must be done according to official regulations.
Product/Packaging disposal recommendations : Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation. Disposal must be done according to official regulations
Additional information : Do not allow water (or moist air) contact with this material. Do not re-use empty containers.

14. Transport information

In accordance with ADR / IMDG / IATA / ADN / RID

14.1. UN number

UN-No. (ADR) : UN 1836

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UN-No. (IMDG) : UN 1836
UN-No. (IATA) : UN 1836
UN-No. (ADN) : UN 1836
UN-No. (RID) : UN 1836

14.2. UN proper shipping name

Proper Shipping Name (ADR) : THIONYL CHLORIDE
Proper Shipping Name (IMDG) : THIONYL CHLORIDE
Proper Shipping Name (IATA) : Thionyl chloride
Proper Shipping Name (ADN) : THIONYL CHLORIDE
Proper Shipping Name (RID) : THIONYL CHLORIDE
Transport document description (ADR) : UN 1836 THIONYL CHLORIDE, 8, I, (E)
Transport document description (IMDG) : UN 1836 THIONYL CHLORIDE, 8, I
Transport document description (IATA) : UN 1836 Thionyl chloride, 8, I
Transport document description (ADN) : UN 1836 THIONYL CHLORIDE, 8, I
Transport document description (RID) : UN 1836 THIONYL CHLORIDE, 8, I

14.3. Transport hazard class(es)

ADR

Transport hazard class(es) (ADR) : 8
Danger labels (ADR) : 8

IMDG

Transport hazard class(es) (IMDG) : 8
Danger labels (IMDG) : 8

IATA

Transport hazard class(es) (IATA) : 8
Danger labels (IATA) : 8

ADN

Transport hazard class(es) (ADN) : 8
Danger labels (ADN) : 8

RID

Transport hazard class(es) (RID) : 8
Danger labels (RID) : 8

14.4. Packing group

Packing group (ADR) : I
Packing group (IMDG) : I
Packing group (IATA) : I
Packing group (ADN) : I
Packing group (RID) : I

14.5. Environmental hazards

Dangerous for the environment : No

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Marine pollutant : No
Other information : No supplementary information available

14.6. Special precautions for user

Overland transport

Classification code (ADR) : C1
Limited quantities (ADR) : 0
Excepted quantities (ADR) : E0
Packing instructions (ADR) : P802
Mixed packing provisions (ADR) : MP8, MP17
Portable tank and bulk container instructions (ADR) : T10
Portable tank and bulk container special provisions (ADR) : TP2
Tank code (ADR) : L10BH
Vehicle for tank carriage : AT
Transport category (ADR) : 1
Special provisions for carriage - Operation (ADR) : S20
Hazard identification number (Kemler No.) : X88
Tunnel restriction code (ADR) : E
EAC code : 4WE

Transport by sea

Limited quantities (IMDG) : 0
Excepted quantities (IMDG) : E0
Packing instructions (IMDG) : P802
Tank instructions (IMDG) : T10
Tank special provisions (IMDG) : TP2, TP13
EmS-No. (Fire) : F-A
EmS-No. (Spillage) : S-B
Stowage category (IMDG) : C
Stowage and handling (IMDG) : SW2
MFAG-No : 137

Air transport

PCA Excepted quantities (IATA) : Forbidden
PCA Limited quantities (IATA) : Forbidden
PCA limited quantity max net quantity (IATA) : Forbidden
PCA packing instructions (IATA) : Forbidden
PCA max net quantity (IATA) : Forbidden
CAO packing instructions (IATA) : Forbidden
CAO max net quantity (IATA) : Forbidden

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ERG code (IATA) : 8W
Inland waterway transport
Classification code (ADN) : C1
Limited quantities (ADN) : 0
Excepted quantities (ADN) : E0
Equipment required (ADN) : PP, EP
Number of blue cones/lights (ADN) : 0
Rail transport
Classification code (RID) : C1
Limited quantities (RID) : 0
Excepted quantities (RID) : E0
Packing instructions (RID) : P802
Mixed packing provisions (RID) : MP8, MP17
Portable tank and bulk container instructions (RID) : T10
Portable tank and bulk container special provisions (RID) : TP2
Tank codes for RID tanks (RID) : L10BH
Transport category (RID) : 1
Hazard identification number (RID) : X88

14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

Not applicable

15. Regulatory information

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

15.1.1 EU-Regulations

EU restriction list (REACH Annex XVII)

Reference code Applicable on	Reference code Applicable on
3(b)	THIONYL CHLORIDE

Not listed on REACH Annex XIV (Authorisation List)

Not listed on the REACH Candidate List

Not listed on the PIC list (Regulation EU 649/2012)

Not listed on the POP list (Regulation EU 2019/1021)

Not listed on the Ozone Depletion list (Regulation EU 1005/2009)

Contains no substance subject to the COUNCIL REGULATION (EC) No 428/2009 of 5 May 2009 setting up a Community regime for the control of exports, transfer, brokering and transit of dual-use items.

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Contains no substance(s) listed on the Explosives Precursors list (Regulation EU 2019/1148 on the marketing and use of explosives precursors)

Contains no substance(s) listed on the Drug Precursors list (Regulation EC 273/2004 on the manufacture and the placing on market of certain substances used in the illicit manufacture of narcotic drugs and psychotropic substances)

15.1.2. National regulations

Germany

Water hazard class (WGK)

: WGK 1, Slightly hazardous to water
(Classification according to AwSV; ID No. 1244).

Hazardous Incident Ordinance (12. BImSchV)

: Is not subject of the Hazardous Incident Ordinance
(12. BImSchV)

Netherlands

SZW-lijst van kankerverwekkende stoffen

: The substance is not listed

SZW-lijst van mutagene stoffen

: The substance is not listed

NIET-limitatieve lijst van voor de voortplanting
giftige stoffen – Borstvoeding

: The substance is not listed

NIET-limitatieve lijst van voor de voortplanting
giftige stoffen – Vruchtbaarheid

: The substance is not listed

NIET-limitatieve lijst van voor de voortplanting
giftige stoffen – Ontwikkeling

: The substance is not listed

Denmark

Danish National Regulations

: Young people below the age of 18 years are not
allowed to use the product

15.2. Chemical safety assessment

No chemical safety assessment has been carried out

16. Other information

Abbreviations and acronyms

ADN	European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE	Acute Toxicity Estimate
BCF	Bioconcentration factor
BLV	Biological limit value
BOD	Biochemical oxygen demand
COD	Chemical oxygen demand

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COD	Chemical oxygen demand
DMEL	Derived Minimal Effect level
DNEL	Derived-No Effect Level
EC-No.	European Community number
EC50	Median effective concentration
EN	European Standard
IARC	International Agency for Research on Cancer
IATA	International Air Transport Association
IMDG	International Maritime Dangerous Goods
LC50	Median lethal concentration
LD50	Median lethal dose
LOAEL	Lowest Observed Adverse Effect Level
NOAEC	No-Observed Adverse Effect Concentration
NOAEL	No-Observed Adverse Effect Level
NOEC	No-Observed Effect Concentration
OECD	Organisation for Economic Co-operation and Development
OEL	Occupational Exposure Limit
PBT	Persistent Bioaccumulative Toxic
PNEC	Predicted No-Effect Concentration
RID	Regulations concerning the International Carriage of Dangerous Goods by Rail
SDS	Safety Data Sheet
STP	Sewage treatment plant
ThOD	Theoretical oxygen demand (ThOD)
TLM	Median Tolerance Limit
VOC	Volatile Organic Compounds
CAS-No.	Chemical Abstract Service number
N.O.S.	Not Otherwise Specified
vPvB	Very Persistent and Very Bioaccumulative
ED	Endocrine disrupting properties

Full text of H- and EUH-statements

Eye Irrit. 2	Serious eye damage/eye irritation, Category 2
Flam. Liq. 2	Flammable liquids, Category 2
STOT SE 3	Specific target organ toxicity — Single exposure, Category 3, Narcosis
H225	Highly flammable liquid and vapour.
H319	Causes serious eye irritation.
H336	May cause drowsiness or dizziness.
EUH066	Repeated exposure may cause skin dryness or cracking.

Safety Data Sheet (SDS), EU This information is based on our current knowledge and is intended to

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Material Safety Data Sheet



THIONYL CHLORIDE FOR SYNTHESIS

VERSION : 05
REVISION DATE : 14/06/2025
EFFECTIVE DATE : 16/06/2025

Product Code : 19465

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describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.

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