

## 1 Identification

· **Product identifier**

· **Trade name:** thionyl dichloride

· **Article number:** 2159

· **CAS Number:**

7719-09-7

· **EC number:**

231-748-8

· **Index number:**

016-015-00-0

· **Relevant identified uses of the substance or mixture and uses advised against**

No further relevant information available.

· **Application of the substance / the preparation**

Chemical for research, development, manufacturing and analysis

· **Details of the supplier of the safety data sheet**

· **Manufacturer/Supplier:**

Biosolve B.V.

Leenderweg 78, 5555 CE Valkenswaard, the Netherlands.

Tel: +31-(0)40-2071300

Fax: +31-(0)40-2048537

Email: [info@biosolve-chemicals.com](mailto:info@biosolve-chemicals.com)

Biosolve Chimie

20 Rue Roger Husson, 57260 Dieuze, France

Tel: +33 3 878 675 80/81/82/83/84/85

Email: [info@biosolvechimie.com](mailto:info@biosolvechimie.com)

Bio-Lab Ltd.

POB 34038, Jerusalem 91340, Israel

Tel: + 972 -2- 584 1111

Fax: + 972 -2- 584 1110

Email: [info@biolab-chemicals.com](mailto:info@biolab-chemicals.com)

· **Information department:** Product safety department

· **Emergency telephone number:** During normal opening times: +972 2 584 1111

## 2 Hazard(s) identification

· **Classification of the substance or mixture**



GHS05 Corrosion

H314 Causes severe skin burns and eye damage.



GHS07

H302 Harmful if swallowed.

H332 Harmful if inhaled.

· **Classification according to Directive 67/548/EEC or Directive 1999/45/EC**



Corrosive

Causes severe burns.



Harmful

Harmful by inhalation and if swallowed.

Reacts violently with water. Contact with water liberates toxic gas.

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**Trade name: thionyl dichloride**

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· **Information concerning particular hazards for human and environment:** Not applicable.

· **Label elements**

· **Labelling according to EU guidelines:**

*The product has been classified and marked in accordance with directives on hazardous materials.*

· **Code letter and hazard designation of product:**



Corrosive

· **Risk phrases:**

*Reacts violently with water.  
Harmful by inhalation and if swallowed.  
Contact with water liberates toxic gas.  
Causes severe burns.*

· **Safety phrases:**

*Keep locked up and out of the reach of children.  
In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.  
Wear suitable protective clothing, gloves and eye/face protection.  
In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).*

· **Classification system:**

· **NFPA ratings (scale 0 - 4)**



Health = 4  
Fire = 0  
Reactivity = 2

*The substance demonstrates unusual reactivity with water.*

· **HMIS-ratings (scale 0 - 4)**



Health = 4  
Fire = 0  
Reactivity = 2

· **Other hazards**

· **Results of PBT and vPvB assessment**

· **PBT:** Not applicable.  
· **vPvB:** Not applicable.

**3 Composition/information on ingredients**

· **Chemical characterization: Substances**

· **CAS No. Description**

*7719-09-7 thionyl dichloride*

· **Identification number(s)**

· **EC number:** 231-748-8

· **Index number:** 016-015-00-0

**4 First-aid measures**

· **Description of first aid measures**

· **General information:**

*Immediately remove any clothing soiled by the product.  
Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.*

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- **After inhalation:**  
Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.  
In case of unconsciousness place patient stably in side position for transportation.
- **After skin contact:** Immediately wash with water and soap and rinse thoroughly.
- **After eye contact:** Rinse opened eye for several minutes under running water. Then consult a doctor.
- **After swallowing:**  
Immediately call a doctor.  
Drink copious amounts of water and provide fresh air. Immediately call a doctor.
- **Most important symptoms and effects, both acute and delayed** No further relevant information available.
- **Indication of any immediate medical attention and special treatment needed**  
No further relevant information available.

### 5 Fire-fighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:**  
CO<sub>2</sub>, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **For safety reasons unsuitable extinguishing agents:** Water
- **Special hazards arising from the substance or mixture** No further relevant information available.
- **Advice for firefighters**
- **Protective equipment:** Mouth respiratory protective device.

### 6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**  
Mount respiratory protective device.  
Wear protective equipment. Keep unprotected persons away.
- **Environmental precautions:** Do not allow to enter sewers/ surface or ground water.
- **Methods and material for containment and cleaning up:**  
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).  
Use neutralizing agent.  
Dispose contaminated material as waste according to item 13.  
Ensure adequate ventilation.  
Do not flush with water or aqueous cleansing agents
- **Reference to other sections**  
See Section 7 for information on safe handling.  
See Section 8 for information on personal protection equipment.  
See Section 13 for disposal information.

### 7 Handling and storage

- **Precautions for safe handling** Ensure good ventilation/exhaustion at the workplace.
- **Information about protection against explosions and fires:** Keep respiratory protective device available.
- **Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:** No special requirements.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:**  
Keep receptacle tightly sealed.  
Store in cool, dry conditions in well sealed receptacles.
- **Specific end use(s)** No further relevant information available.

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### 8 Exposure controls/personal protection

· **Additional information about design of technical systems:** No further data; see item 7.

· **Control parameters**

· **Components with limit values that require monitoring at the workplace:**

**7719-09-7 thionyl dichloride**

REL Short-term value: C 5 mg/m<sup>3</sup>, C 1 ppm

TLV Short-term value: C 0.2 ppm

· **Additional information:** The lists that were valid during the creation were used as basis.

· **Exposure controls**

· **Personal protective equipment:**

· **General protective and hygienic measures:**

Keep away from foodstuffs, beverages and feed.

Immediately remove all soiled and contaminated clothing.

Wash hands before breaks and at the end of work.

Avoid contact with the eyes and skin.

· **Breathing equipment:**

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.

· **Protection of hands:**



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

· **Material of gloves**

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

· **Penetration time of glove material**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

· **Eye protection:**



Tightly sealed goggles

### 9 Physical and chemical properties

· **Information on basic physical and chemical properties**

· **General Information**

· **Appearance:**

**Form:** Fluid

**Color:** Yellowish

· **Odor:** Pungent

· **Odour threshold:** Not determined.

· **pH-value:** Not determined.

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· <b>Change in condition</b> <b>Melting point/Melting range:</b>	-104.5 °C (-156 °F)
<b>Boiling point/Boiling range:</b>	75.3 °C (168 °F)
· <b>Flash point:</b>	Not applicable.
· <b>Flammability (solid, gaseous):</b>	Not applicable.
· <b>Ignition temperature:</b>	
<b>Decomposition temperature:</b>	Not determined.
· <b>Auto igniting:</b>	Not determined.
· <b>Danger of explosion:</b>	Product does not present an explosion hazard.
· <b>Explosion limits:</b>	
<b>Lower:</b>	Not determined.
<b>Upper:</b>	Not determined.
· <b>Vapor pressure at 20 °C (68 °F):</b>	124 hPa (93 mm Hg)
· <b>Density at 20 °C (68 °F):</b>	1.64 g/cm <sup>3</sup> (13.686 lbs/gal)
· <b>Relative density</b>	Not determined.
· <b>Vapour density</b>	Not determined.
· <b>Evaporation rate</b>	Not determined.
· <b>Solubility in / Miscibility with Water:</b>	Not miscible or difficult to mix.
· <b>Partition coefficient (n-octanol/water):</b>	Not determined.
· <b>Viscosity:</b>	
<b>Dynamic at 25 °C (77 °F):</b>	0.6 mPas
<b>Kinematic:</b>	Not determined.
· <b>Other information</b>	No further relevant information available.

### 10 Stability and reactivity

- **Reactivity**
- **Chemical stability**
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Possibility of hazardous reactions** Contact with water releases toxic gases.
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:** No dangerous decomposition products known.

### 11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:**

· **LD/LC50 values that are relevant for classification:**

Inhalative	LC50/4 h	2.7 mg/l (rat)
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- **Primary irritant effect:**
- **on the skin:** Strong caustic effect on skin and mucous membranes.
- **on the eye:** Strong caustic effect.
- **Sensitization:** No sensitizing effects known.
- **Additional toxicological information:**  
Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of esophagus and stomach.

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- **Carcinogenic categories**
- **IARC (International Agency for Research on Cancer)** Substance is not listed.
- **NTP (National Toxicology Program)** Substance is not listed.

**12 Ecological information**

- **Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **Persistence and degradability** No further relevant information available.
- **Bioaccumulative potential** No further relevant information available.
- **Mobility in soil** No further relevant information available.
- **Additional ecological information:**
- **General notes:**  
 Water hazard class 1 (Assessment by list): slightly hazardous for water  
 Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.  
 Must not reach bodies of water or drainage ditch undiluted or unneutralized.
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **Other adverse effects** No further relevant information available.

**13 Disposal considerations**

- **Waste treatment methods**
- **Recommendation:**  
 Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to official regulations.

**14 Transport information**

- **UN-Number**
- **DOT, ADR, IMDG, IATA** UN1836
- **UN proper shipping name**
- **DOT** Thionyl chloride
- **ADR** 1836 Thionyl chloride
- **IMDG, IATA** THIONYL CHLORIDE
- **Transport hazard class(es)**
- **DOT**
- **Class** 8 Corrosive substances.
- **Label** 8



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**Trade name: thionyl dichloride**

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**· ADR**



· **Class** 8 (C1) Corrosive substances  
· **Label** 8

**· IMDG, IATA**



· **Class** 8 Corrosive substances.  
· **Label** 8

**· Packing group**

· **DOT, ADR, IMDG, IATA** I

**· Environmental hazards:**

· **Marine pollutant:** No

**· Special precautions for user**

Warning: Corrosive substances

**· Danger code (Kemler):**

X88

**· EMS Number:**

F-A,S-B

**· Segregation groups**

Acids

**· Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code**

Not applicable.

**· UN "Model Regulation":**

UN1836, Thionyl chloride, 8, I

**15 Regulatory information**

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

**· Sara**

· **Section 355 (extremely hazardous substances):** Substance is not listed.

· **Section 313 (Specific toxic chemical listings):** Substance is not listed.

· **TSCA (Toxic Substances Control Act):** Substance is listed.

**· Proposition 65**

· **Chemicals known to cause cancer:** Substance is not listed.

· **Chemicals known to cause reproductive toxicity for females:** Substance is not listed.

· **Chemicals known to cause reproductive toxicity for males:** Substance is not listed.

· **Chemicals known to cause developmental toxicity:** Substance is not listed.

**· Carcinogenic categories**

· **EPA (Environmental Protection Agency)** Substance is not listed.

· **TLV (Threshold Limit Value established by ACGIH)** Substance is not listed.

· **NIOSH-Ca (National Institute for Occupational Safety and Health)** Substance is not listed.

· **OSHA-Ca (Occupational Safety & Health Administration)** Substance is not listed.

**· Product related hazard informations:**

The product has been classified and marked in accordance with directives on hazardous materials.

**· Hazard symbols:**



Corrosive

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**Trade name: thionyl dichloride**

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· **Risk phrases:**

*Reacts violently with water.  
Harmful by inhalation and if swallowed.  
Contact with water liberates toxic gas.  
Causes severe burns.*

· **Safety phrases:**

*Keep locked up and out of the reach of children.  
In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.  
Wear suitable protective clothing, gloves and eye/face protection.  
In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).*

· **Chemical safety assessment:** *A Chemical Safety Assessment has been carried out.*

**16 Other information**

*This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.*

· **Department issuing MSDS:** *Product safety department*

· **Contact:** *Product safety department*

· **Abbreviations and acronyms:**

*RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)*

*ICAO: International Civil Aviation Organization*

*ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)*

*IMDG: International Maritime Code for Dangerous Goods*

*DOT: US Department of Transportation*

*IATA: International Air Transport Association*

*ACGIH: American Conference of Governmental Industrial Hygienists*

*EINECS: European Inventory of Existing Commercial Chemical Substances*

*CAS: Chemical Abstracts Service (division of the American Chemical Society)*

*NFPA: National Fire Protection Association (USA)*

*HMIS: Hazardous Materials Identification System (USA)*

*LC50: Lethal concentration, 50 percent*

*LD50: Lethal dose, 50 percent*