



## Safety Data Sheet

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

#### Product identifier:

Product name: Thionyl chloride

Product code (SDS NO): 7778E-3

#### Details of the supplier of the safety data sheet

Manufacturer/Supplier: KISHIDA CHEMICAL CO., LTD.

Address: 3-1, Honmachibashi, Chuo-ku, Osaka, JAPAN

Division: Safety Management Dept. of Chemicals

Telephone number: +81-6-6946-8061

FAX: +81-6-6946-1607

e-mail address: kagakuhinanzenkanri@kishida.co.jp

### 2. Hazards identification

#### GHS classification and label elements of the product

#### Classification of the substance or mixture

##### HEALTH HAZARDS

Acute toxicity (Oral): Category 3

Acute toxicity (Inhalation): Category 2

Skin corrosion/irritation: Category 1A

Serious eye damage/eye irritation: Category 1

Specific target organ toxicity – single exposure: Category 1 (respiratory apparatus/system)

(Note) GHS classification without description: Not classified/Classification not possible

#### Label elements



Signal word: Danger

#### HAZARD STATEMENT

Toxic if swallowed

Fatal if inhaled

Causes severe skin burns and eye damage

Causes serious eye damage

Causes damage to organs after single exposure

#### PRECAUTIONARY STATEMENT

##### Prevention

Do not breathe dust/fume/gas/mist/vapors/spray.

In case of inadequate ventilation wear respiratory protection. (as specified by the manufacturer/supplier or the competent authority.)

Use only outdoors or in a well-ventilated area.

Wash contaminated parts thoroughly after handling.

Wear protective gloves, protective clothing or face protection.

Wear eye protection/face protection.

Do not eat, drink or smoke when using this product.

##### Response

IF INHALED: Remove person to fresh air and keep comfortable for breathing.

IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.



Wash contaminated clothing before reuse.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.

IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

#### Storage

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

#### Disposal

Dispose of contents/container in accordance with local/national regulation.

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### 3. Composition/information on ingredients

#### Mixture/Substance selection:

##### Substance

Ingredient name:Thionyl chloride

Content (%):90(min)

Chemical formula:Cl<sub>2</sub>OS

Chemicals No, Japan:1-818

CAS No.:7719-09-7

MW:118.97

ECNO:231-748-8

Note : The figures shown above are not the specifications of the product.

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### 4. First-aid measures

#### Descriptions of first-aid measures

##### IF INHALED

Remove person to fresh air and keep comfortable for breathing.

Call a POISON CENTER or doctor/physician if you feel unwell.

##### IF ON SKIN (or hair)

Take off immediately all contaminated clothing. Rinse skin with water/shower.

If skin irritation or rash occurs: Get medical advice/attention.

##### 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.

##### IF SWALLOWED

Rinse mouth. Do NOT induce vomiting.

Immediately call a POISON CENTER or doctor/physician.

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### 5. Fire-fighting measures

#### Extinguishing media

##### Suitable extinguishing media

Use appropriate extinguishing media suitable for surrounding facilities.

##### Unsuitable extinguishing media data is not available.

#### Specific hazards arising from the substance or mixture

Containers may explode when heated.

Fire may produce irritating, corrosive and/or toxic gases.

#### Advice for firefighters

##### Specific fire-fighting measures

Evacuate non-essential personnel to safe area.

##### Special protective equipment and precautions for fire-fighters

Wear fire/flame resistant/retardant clothing.



Wear protective gloves/protective clothing/eye protection/face protection.  
Firefighters should wear self-contained breathing apparatus with full face piece operated positive pressure mode.

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#### 6. Accidental release measures

Personnel precautions, protective equipment and emergency procedures

Ventilate area until material pick up is complete.

Wear proper protective equipment.

Environmental precautions

Prevent spills from entering sewers, watercourses or low areas.

Methods and materials for containment and cleaning up

Absorb spill with inert material (dry sand, earth, et al), then place in a chemical waste container.

Preventive measures for secondary accident

Collect spillage.

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#### 7. Handling and storage

Precautions for safe handling

Preventive measures

(Exposure Control for handling personnel)

Do not breathe dust/fume/gas/mist/vapors/spray.

(Protective measures against fire and explosion)

Keep away from heat/sparks/open flames/hot surfaces. – No smoking.

(Exhaust/ventilator)

Exhaust/ventilator should be available.

(Safety treatments)

Avoid contact with skin.

Avoid contact with eyes.

Safety Measures

Use only outdoors or in a well-ventilated area.

Wear protective gloves, protective clothing or face protection.

Wear eye protection/face protection.

When using do not eat, drink or smoke.

Any incompatibilities

See "10.Stability and Reactivity"

Advice on general occupational hygiene

Wash contaminated parts thoroughly after handling.

Do not eat, drink or smoke when using this product.

Wash contaminated clothing before reuse.

Storage

Conditions for safe storage

Keep container tightly closed.

Store in a cool, dry place. Do not store in direct sunlight.

Keep under lock and key.

Container and packaging materials for safe handling

Glass



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## 8. Exposure controls/personal protection

### Control parameters

#### Adopted value

(Thionyl chloride)

ACGIH(2009) STEL: C 0.2ppm (URT irr)

### Exposure controls

#### Appropriate engineering controls

Do not use in areas without adequate ventilation.

Eye wash station should be available.

Washing facilities should be available.

#### Individual protection measures

##### Respiratory protection

Wear respiratory protection.

##### Hand protection

Wear protective gloves.

##### Eye protection

Wear eye/face protection.

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## 9. Physical and Chemical Properties

### Information on basic physical and chemical properties

Physical state: Liquid

Color: Colorless to light brown

Odor: Pungent odor

pH data is not available.

Boiling point or initial boiling point: 76°C

Boiling range data is not available.

Melting point/Freezing point: -104.5°C

Decomposition temperature data is not available.

Flammability (gases, liquids and solids) data is not available.

Flash point data is not available.

Auto-ignition temperature data is not available.

Lower and upper explosion limit/flammability limit data is not available.

Vapor pressure: 16 kPa (25°C)

Relative vapor density (Air=1): 4.1

Relative density of the Vapor/air - mixture at 20°C (Air = 1): 1.49

Density and/or relative density: 1.64

Kinematic viscosity data is not available.

### Solubility:

Solubility in water: Reaction

n-Octanol/water partition coefficient data is not available.

No Particle characteristics data is not available.

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## 10. Stability and Reactivity

### Reactivity

Not available.

### Chemical stability

Stable under normal storage/handling conditions.

### Possibility of hazardous reactions

Decomposes above 140° C . This produces toxic and corrosive fumes. Reacts violently with water. This produces toxic fumes of sulfur dioxide and hydrogen chloride. Reacts with many substances such as combustible substances, amines, bases and metals. This generates fire



and explosion hazard. (ICSC 1409)

Conditions to avoid

Contact with incompatible materials.

Contact with fire source.

Incompatible materials

Bases, Water, Combustible substances, Amines, Metals

Hazardous decomposition products

Sulfur oxides, Hydrogen chloride

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## 11. Toxicological Information

### Information on toxicological effects

#### Acute toxicity

##### Acute toxicity (Oral)

[GHS Cat. Japan, base data]

(Thionyl chloride)

rat LD50=270mg/kg (IUCLID, 2000)

##### Acute toxicity (Inhalation)

[GHS Cat. Japan, base data]

(Thionyl chloride)

vapor: rat LC50=249ppm/4hr (ACGIH 7th, 2001)

#### Irritant properties

##### Skin corrosion/irritation

[GHS Cat. Japan, base data]

(Thionyl chloride)

animal corrosive (IUCLID, 2000)

##### Serious eye damage/irritation

[GHS Cat. Japan, base data]

(Thionyl chloride)

animal/human severe irritation (IUCLID, 2000)

Allergenic and sensitizing effects data is not available.

Mutagenic effects data is not available.

Carcinogenic effects data is not available.

Reproductive toxicity data is not available.

#### STOT

##### STOT-single exposure

[cat.1]

[GHS Cat. Japan, base data]

(Thionyl chloride)

respiratory apparatus/system (ACGIH 7th, 2001; HSDB, 2005)

STOT-repeated exposure data is not available.

Aspiration hazard data is not available.

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## 12. Ecological Information

### Ecotoxicity

Ecotoxicity data is not available.

### Water solubility

(Thionyl chloride)

reaction (ICSC, 2001)

### Persistence and degradability

Persistence and degradability data is not available.

### Bioaccumulative potential

Bioaccumulative potential data is not available.

**Mobility in soil**

Mobility in soil data is not available.

**Other adverse effects**

Ozone depleting chemical data is not available.

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**13. Disposal considerations****Waste treatment methods**

Dispose of contents/container in accordance with local/national regulation.

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**14. Transport Information**

UN No.: 1836

Proper Shipping Name :

THIONYL CHLORIDE

Class or division : 8

Packing group : I

ERG GUIDE No.: 137

**IMDG Code (International Maritime Dangerous Goods Regulations)**

UN No.: 1836

Proper Shipping Name :

THIONYL CHLORIDE

Class or division : 8

Packing group : I

**IATA Dangerous Goods Regulations**

UN No.: 1836

Proper Shipping Name :

THIONYL CHLORIDE

Class or division : 8

Special provisions No.: A2

**Environmental hazards**

MARPOL Annex III – Prevention of pollution by harmful substances

Marine pollutants (yes/no) : no

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**15. Regulatory Information**

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

**US major regulations****TSCA**

Thionyl chloride

**Other regulatory information**

Ensure this material in compliance with federal requirements and ensure conformity to local regulations.

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**16. Other information****GHS classification and labelling**

Acute Tox. 3: H301 Toxic if swallowed

Acute Tox. 2: H330 Fatal if inhaled

Skin Corr. 1A: H314 Causes severe skin burns and eye damage

Eye Dam. 1: H318 Causes serious eye damage

STOT SE 1: H370 Causes damage to organs after single exposure

**Reference Book**

Globally Harmonized System of classification and labelling of chemicals, (6th ed., 2015), UN



Recommendations on the TRANSPORT OF DANGEROUS GOODS 20th edit., 2017 UN  
IMDG Code, 2018 Edition (Incorporating Amendment 39-18)  
IATA Dangerous Goods Regulations (60th Edition) 2019  
Classification, labelling and packaging of substances and mixtures (table 3-1 ECNO6182012)  
2016 EMERGENCY RESPONSE GUIDEBOOK (US DOT)  
2019 TLVs and BEIs. (ACGIH)  
<http://monographs.iarc.fr/ENG/Classification/index.php>  
Supplier's data/information

**General Disclaimer**

This data sheet was created based on the information we currently have and may be revised according to new information. In addition, the precautions apply only to normal handling, and in the case of special handling, please make adequate countermeasure to maintain your safety.

The data given here is based on current knowledge and experience. The purpose of this Safety Data Sheet is to describe the products in terms of their safety requirements. The data does not signify any warranty with regard to the products' properties.

The GHS classification data given here is based on current Japan official data (NITE published in 2018).