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SDS No. Exempt, SR&D

MOEL's Public Notice No. 2023-9 (Standards for Classification and Labeling of Chemical Substances and Safety Data Sheets)

# SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

**Product Identifier** 

Product Description: Sulfuryl chloride

Cat No. : C16945

Synonyms Sulfonyl Chloride; Sulfuric Oxychloride.

CAS No 7791-25-5 Molecular Formula CI2 O2 S

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

Recommended Use Laboratory chemicals.
Uses advised against No Information available

Details of the supplier of the safety data sheet

Importer Supplier

Fisher Scientific Korea Thermo Fisher Scientific Chemicals, Inc.

D5,D6, Incheon Airport Logistics Complex 30 Bond Street

150, Gonghangdong-Ro 296 Beon-Gil Ward Hill, MA 01835-8099

Jung-Gu, Incheon Tel: +82-1661-9555 Fax: +82-2-2023-0603

E-mail address Chem.KR@thermofisher.com

Emergency Telephone Number

Emergency telephone: Medical: +(82) 070-7686-0086 or + 1-703-741-5970

CHEMTREC: 080 822 1374 (Local), CHEMTREC: 1-800-424-9300 or + 1-703-527-3887

Korea: 00-308-13-2549 (24 hours a day, 7 days a week)

# **SECTION 2: HAZARDS IDENTIFICATION**

## Classification of the substance or mixture

## Physical hazards

Based on available data, the classification criteria are not met

## **Health hazards**

Skin Corrosion/Irritation Category 1 B
Serious Eye Damage/Eye Irritation Category 1
Specific target organ toxicity - (single exposure) Category 3

## **Environmental hazards**

Based on available data, the classification criteria are not met

#### **Label Elements**



## Signal Word Danger

#### **Hazard Statements**

H314 - Causes severe skin burns and eye damage

H335 - May cause respiratory irritation

H318 - Causes serious eye damage

#### **Precautionary Statements**

#### Prevention

P260 - Do not breathe dust/fume/gas/mist/vapors/spray

P264 - Wash hands and face thoroughly after handling

P280 - Wear protective gloves/protective clothing/eye protection/face protection

P261 - Avoid breathing dust/fume/gas/mist/vapors/spray

P271 - Use only outdoors or in a well-ventilated area

#### Response

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 or shower

P363 - Wash contaminated clothing before reuse

P304 + P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing

P310 - Immediately call a POISON CENTER or doctor

P321 - Specific treatment (see supplemental first aid instructions on this label)

P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

P312 - Call a POISON CENTER or doctor if you feel unwell

#### Storage

P403 + P233 - Store in a well-ventilated place. Keep container tightly closed

P405 - Store locked up

#### **Disposal**

P501 - Dispose of contents/ container to an approved waste disposal plant

## Other Hazards

Reacts violently with water

This product does not contain any known or suspected endocrine disruptors

#### NFPA

Health Flammability Instability Physical hazards
4 0 2 W

## **SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS**

#### 3.1. Substances

Component	Common Name	CAS No	Index No	Weight %
Sulfuryl chloride	No information	7791-25-5	KE-32692	99 - 100
	available			

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## **SECTION 4: FIRST AID MEASURES**

Description of first aid measures

General Advice Immediate medical attention is required. Show this safety data sheet to the doctor in

attendance.

Eye Contact Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.

Immediate medical attention is required.

**Skin Contact** Wash off immediately with plenty of water for at least 15 minutes. Immediate medical

attention is required.

**Ingestion** Do NOT induce vomiting. Call a physician or poison control center immediately.

**Inhalation** If breathing is difficult, give oxygen. Do not use mouth-to-mouth method if victim ingested or

inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Remove to fresh air. Immediate

medical attention is required.

Self-Protection of the First Aider Ensure that medical personnel are aware of the material(s) involved, take precautions to

protect themselves and prevent spread of contamination.

Most important symptoms and effects, both acute and delayed

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 should be investigated. Ingestion causes severe swelling, severe damage to the delicate tissue

and danger of perforation.

Indication of any immediate medical attention and special treatment needed

Notes to Physician Treat symptomatically.

# **SECTION 5: FIREFIGHTING MEASURES**

## Extinguishing media

#### **Suitable Extinguishing Media**

CO<sub>2</sub>, dry chemical, dry sand, alcohol-resistant foam.

#### Extinguishing media which must not be used for safety reasons

Water.

## Special hazards arising from the substance or mixture

Thermal decomposition can lead to release of irritating gases and vapors. The product causes burns of eyes, skin and mucous membranes. Reacts violently with water. Contact with water liberates toxic gas.

#### **Hazardous Combustion Products**

Chlorine, Sulfur oxides, Thermal decomposition can lead to release of irritating gases and vapors, Hydrogen chloride gas.

#### Advice for fire-fighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Thermal decomposition can lead to release of irritating gases and vapors.

# **SECTION 6: ACCIDENTAL RELEASE MEASURES**

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#### Personal Precautions, Protective Equipment and Emergency Procedures

Use personal protective equipment as required. Evacuate personnel to safe areas. Ensure adequate ventilation. Keep people away from and upwind of spill/leak.

#### **Environmental precautions**

Should not be released into the environment. See Section 12 for additional Ecological Information.

#### Methods and Material for Containment and Cleaning Up

Soak up with inert absorbent material. Keep in suitable, closed containers for disposal. Do not expose spill to water.

#### Reference to Other Sections

Refer to protective measures listed in Sections 8 and 13.

## **SECTION 7: HANDLING AND STORAGE**

#### **Precautions for Safe Handling**

Use only under a chemical fume hood. Wear personal protective equipment/face protection. Do not breathe mist/vapors/spray. Do not get in eyes, on skin, or on clothing. Do not ingest. If swallowed then seek immediate medical assistance. Do not allow contact with water.

## Conditions for Safe Storage, Including any Incompatibilities

Keep containers tightly closed in a dry, cool and well-ventilated place. Corrosives area. Keep away from water or moist air.

#### Specific End Uses

Use in laboratories.

## **SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**

## **Control Parameters**

Component	CAS No	Korea	ACGIH TLV	OSHA PEL
Sulfuryl chloride	7791-25-5	Not listed	Not listed	Not listed

Component	CAS No	European Union	The United Kingdom	Germany
Sulfuryl chloride	7791-25-5	Not listed	Not listed	Not listed

## **ACGIH - Biological Exposure Indices**

Component	CAS No	ACGIH - Biological Exposure Indices
Sulfuryl chloride	7791-25-5	Not listed

## **Exposure Controls**

# **Engineering Measures**

Use only under a chemical fume hood. Ensure that eyewash stations and safety showers are close to the workstation location. Wherever possible, engineering control measures such as the isolation or enclosure of the process, the introduction of process or equipment changes to minimise release or contact, and the use of properly designed ventilation systems, should be adopted to control hazardous materials at source

## Personal protective equipment

**Eye Protection** Goggles

Hand Protection Protective gloves
Skin and body protection Long sleeved clothing

#### Inspect gloves before use.

Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves.

AL FA A C4 C0 4 F

(Refer to manufacturer/supplier for information)

Ensure gloves are suitable for the task: Chemical compatability, Dexterity, Operational conditions, User susceptibility, e.g. sensitisation effects, also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion.

Remove gloves with care avoiding skin contamination.

**Personal protective equipment** Use only those certified by the Korea Occupational Safety and Health Administration.

Respiratory Protection

When workers are facing concentrations above the exposure limit they must use

appropriate certified respirators

Recommended Filter type: Particulates filter conforming to EN 143 Acid gases filter Type E Yellow conforming to

EN14387

To protect the wearer, respiratory protective equipment must be the correct fit and be used

Liquid

and maintained properly

When RPE is used a face piece Fit Test should be conducted

Handle in accordance with good industrial hygiene and safety practice

Environmental exposure controls No information available

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance (Physical State, Color, Light yellow Liquid

etc.)

**Odor** pungent

Odor Threshold No data available No information available

Melting Point/Range -54.1 °C / -65.4 °F Softening Point No data available

Boiling Point/Range 69.1 °C / 156.4 °F @ 760 mmHg

Flash Point No information available Method - No information available

Evaporation Rate No data available Flammability (solid,gas) Not applicable

Explosion Limits No data available

Vapor Pressure 133 mbar @ 20 °C

 Vapor Density
 4.7 (Air = 1.0)
 (Air = 1.0)

 Specific Gravity / Density
 1.667

Bulk Density

Not applicable

Liquid

Water Solubility Reacts with water
Solubility in other solvents No information available

Partition Coefficient (n-octanol/water)

Component	CAS No	log Pow	
Sulfuryl chloride	7791-25-5	No data available	

Autoignition TemperatureNo data availableDecomposition TemperatureNo data availableViscosity0.7 cP at 24 °C

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Explosive Properties No information available Oxidizing Properties No information available

Molecular FormulaCI2 O2 SMolecular Weight134.96

# **SECTION 10: STABILITY AND REACTIVITY**

Reactivity

Yes

Chemical Stability

Moisture sensitive.

Possibility of Hazardous Reactions

Hazardous Polymerization Hazardous Reactions

Hazardous polymerization does not occur.

None under normal processing. Reacts violently with water. Contact with water liberates

toxic gas.

**Conditions to Avoid** 

Incompatible products. Excess heat. Exposure to moist air or water. Exposure to moisture.

Incompatible Materials

Bases. Alcohols. Metals.

#### **Hazardous Decomposition Products**

Chlorine. Sulfur oxides. Thermal decomposition can lead to release of irritating gases and

vapors. Hydrogen chloride gas.

## **SECTION 11: TOXICOLOGICAL INFORMATION**

## 11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

#### **Product Information**

Information on expected route of exposure

**Inhalation** Harmful by inhalation.

**Ingestion** Ingestion causes burns of the upper digestive and respiratory tracts. Can burn mouth,

throat, and stomach. Harmful if swallowed.

Eyes Causes burns. Corrosive to the eyes and may cause severe damage including blindness.

Risk of serious damage to eyes.

**Skin** Causes burns.

Information on Health Hazards

(a) acute toxicity;

OralNo data availableDermalNo data availableInhalationNo data available

Component	t CAS No		LD50 Dermal	LC50 Inhalation
Sulfuryl chloride	7791-25-5	No data available	No data available	159 ppm (Rat) 4 h

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(b) skin corrosion/irritation; Category 1

(c) serious eye damage/irritation; Category 1

(d) respiratory or skin sensitization;

Respiratory No data available
Skin No data available

Component CAS No		Test method	Test species	Study result	
	Sulfuryl chloride	7791-25-5	No data available	No data available	No data available

(e) germ cell mutagenicity; No data available

Component	CAS No	Test method	Test species	Study result
Sulfuryl chloride	7791-25-5	No data available	No data available	No data available

Not mutagenic in AMES Test

(f) carcinogenicity; No data available

Component	CAS No	Test method	Test species / Duration	Study result
Sulfuryl chloride	7791-25-5	No data available	No data available	No data available

There are no known carcinogenic chemicals in this product

Component	CAS No	IARC	NTP	ACGIH	OSHA	UK
Sulfuryl chloride	7791-25-5	Not listed				

(g) reproductive toxicity; No data available

Component	CAS No	Test method	Test species / Duration	Study result
Sulfuryl chloride	7791-25-5	No data available	No data available	No data available

(h) STOT-single exposure; Category 3

Results / Target organs Respiratory system.

(i) STOT-repeated exposure; No data available

Target Organs None known.

(j) aspiration hazard; No data available

#### **Other Adverse Effects**

Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated. Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation.

Component	CAS No	EU - Endocrine	EU - Endocrine	Japan - Endocrine
·	Disrupters Candidate Di		Disruptors - Evaluated	Disruptor Information
		List	Substances	-
Sulfuryl chloride	7791-25-5	Not applicable	Not applicable	Not applicable

# **SECTION 12: ECOLOGICAL INFORMATION**

**Ecotoxicity effects**Do not empty into drains. Reacts with water so no ecotoxicity data for the substance is

available.

Component CAS No Freshwater Fish Water Flea Freshwater Algae Microtox

Sulfuryl chloride 7791-25-5 No data available No data available No data available No data available No data available

Persistence and degradability

Persistence

Degradability
Degradation in sewage treatment plant

No information available

Persistence is unlikely, based on information available.

No information available, Reacts with water. No information available. Water reactive.

Bioaccumulative potential Bioaccumulation is unlikely

<u>Mobility in soil</u> The product contains volatile organic compounds (VOC) which will evaporate easily from all

surfaces Will likely be mobile in the environment due to its volatility. Disperses rapidly in

air.

**Ozone Depletion Potential** 

Component	CAS No	Ozone Depletion Potential
Sulfuryl chloride	7791-25-5	Not listed

Other adverse effects No information available

## **SECTION 13: DISPOSAL CONSIDERATIONS**

Waste treatment methods

Waste from Residues/Unused

**Products** 

Waste is classified as hazardous. Dispose in accordance with the Wastes Control Act

(폐기물관리법).

Contaminated Packaging Dispose of this container to hazardous or special waste collection point.

Other Information Waste codes should be assigned by the user based on the application for which the product

was used. Do not empty into drains. Do not flush to sewer. Large amounts will affect pH

and harm aquatic organisms.

# **SECTION 14: TRANSPORT INFORMATION**

Road and Rail Transport

UN-No UN1834

Proper Shipping Name Sulphuryl chloride

Hazard Class 6.1 Subsidiary Hazard Class 8 Packing Group 1

IATA FORBIDDEN FOR IATA TRANSPORT

**UN-No** UN1834

Proper Shipping Name Sulphuryl chloride, FORBIDDEN FOR IATA TRANSPORT

Hazard Class 6.1
Subsidiary Hazard Class 8
Packing Group

IMDG/IMO

UN-No UN1834

Proper Shipping Name Sulphuryl chloride

Hazard Class 6.1
Subsidiary Hazard Class 8
Packing Group

Marine Pollutant No hazards identified

Special Precautions for User No special precautions required

# **SECTION 15: REGULATORY INFORMATION**

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

Legend: X - Listed '-' - Not Listed

## **International Inventories**

Component	CAS No	KECL	TSCA	EINECS	IECSC	DSL	NDSL	PICCS	ENCS	ISHL	AICS
Sulfuryl chloride	7791-25-5	Х	Х	232-245-6	Х	Χ	-	Х	Х	Χ	Х

Component	CAS No	Seveso III Directive Seveso III Directive (2012/18/EC) - (2012/18/EC) -		Rotterdam Convention (PIC)	Basel Convention (Hazardous Waste)
		Qualifying Quantities		(Hazardous Waste)	
		for Major Accident	for Safety Report		
		Notification			
Sulfuryl chloride	7791-25-5	Not applicable	Not applicable	Not applicable	Not applicable

Component	CAS No	OECD HPV	Persistent Organic Pollutant	Ozone Depletion Potential
Sulfuryl chloride	7791-25-5	Listed	Not applicable	Not applicable

## Korean National Regulations

Component	CAS No	Act on Registration and Evaluation of Chemical Substances (K-REACH)	Authorised Chemicals	Existing Substances Subject to Registration
Sulfuryl chloride	7791-25-5	Annex 1 - KE-32692	Not applicable	Not applicable
Component	CAS No	Chemical Control Act - Toxic Chemicals	Chemical Control Act - Prohibited Chemicals	Chemical Control Act - Use Restricted Chemicals
Sulfuryl chloride	7791-25-5	Not applicable	Not applicable	Not applicable
Component	CAS No	Chemical Control Act - Accident Precaution Chemicals (% in mixtures)	Chemical Control Act - Accident Precaution Chemicals - Quantity limits Storage (% in mixtures)	Chemical Control Act - Accident Precaution Chemicals - Quantity limits Manufacture/Use (% in mixtures)
Sulfuryl chloride	7791-25-5	Not applicable	Not applicable	Not applicable
Component	CAS No	Waste Control Law	Ministry of Environment - CMR risk	Ministry of Environment Critically Controlled Substance
Sulfuryl chloride	7791-25-5	Not applicable	Not applicable	Not applicable

Component	CAS No	ISHA - Harmful Agents Subject to Work Environment Monitoring	ISHA - Prohibited substances	ISHA - Substances requiring permission
Sulfuryl chloride	7791-25-5	Not applicable	Not applicable	Not applicable

Component	CAS No	ISHA - Substances subject to control	ISHA - Harmful Agents Requiring Health Examination	ISHA - Permissible Exposure Limits
Sulfuryl chloride	7791-25-5	Not applicable	Not applicable	Not applicable

# Sulfuryl chloride

Component	CAS No	ISHA - Subject to Process Safety Reports (minimum quantity)	ISHA - Threshold Limit Values (TLVs) Chemicals	ISHA - Special management materials
Sulfuryl chloride	7791-25-5	Not applicable	Not applicable	Not applicable

#### National Fire Association - Dangerous Substances Minimum quantity requiring a permit

Component	CAS No	Class 1 - Oxidising solids	Class 2 - Flammable solid	Class 3 - Spontaneously Combustible Substances and Dangerous Substances When Wet	liquids	Class 5 - Self-reactive substances	Class 6 - Oxidising liquids
Sulfuryl chloride	7791-25-5	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable

#### **Control Parameters**

Component	CAS No	Korea	ACGIH - Biological Exposure Indices
Sulfuryl chloride	7791-25-5	Not listed	Not listed

#### **US Management Information**

**OSHA** - Occupational Safety and Health Administration

Not applicable

Component	CAS No	Specifically Regulated Chemicals	Highly Hazardous Chemicals
Sulfuryl chloride	7791-25-5	Not applicable	Not applicable

**CERCLA** Not applicable

Component	CAS No	CERCLA Extremely Hazardous Substances RQs	Hazardous Substances RQs	SARA 313 - Threshold Values %
Sulfuryl chloride	7791-25-5	Not applicable	Not applicable	Not applicable

#### GHS Classification - According to GB-CLP Regulations UK SI 2019/720 and UK SI 2020/1567

Danger.

H335 - May cause respiratory irritation. H314 - Causes severe skin burns and eye damage. H330 - Fatal if inhaled. EUH014 -Reacts violently with water.

P280 - Wear protective gloves/protective clothing/eye protection/face protection. P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P304 + P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing. P310 - Immediately call a POISON CENTER or doctor/physician. 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 or shower.

## **SECTION 16: OTHER INFORMATION**

## Legend

**CAS** - Chemical Abstracts Service

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

EINECS/ELINCS - European Inventory of Existing Commercial Chemical DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances/EU List of Notified Chemical Substances

Substances List

PICCS - Philippines Inventory of Chemicals and Chemical Substances **IECSC** - Chinese Inventory of Existing Chemical Substances

**ENCS** - Japanese Existing and New Chemical Substances AICS - Australian Inventory of Chemical Substances

**KECL** - Korean Existing and Evaluated Chemical Substances

NZIoC - New Zealand Inventory of Chemicals

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WEL - Workplace Exposure Limit

ACGIH - American Conference of Governmental Industrial Hygienists

RPE - Respiratory Protective Equipment LC50 - Lethal Concentration 50% POW - Partition coefficient Octanol:Water IARC - International Agency for Research on Cancer LD50 - Lethal Dose 50%

TWA - Time Weighted Average

EC50 - Effective Concentration 50%

ADR - European Agreement Concerning the International Carriage of Dangerous Goods by Road

IMO/IMDG - International Maritime Organization/International Maritime Dangerous Goods Code

OECD - Organisation for Economic Co-operation and Development

**BCF** - Bioconcentration factor

ICAO/IATA - International Civil Aviation Organization/International Air Transport Association

MARPOL - International Convention for the Prevention of Pollution from

Ships

ATE - Acute Toxicity Estimate VOC - (Volatile Organic Compound)

#### Key literature references and sources for data

https://echa.europa.eu/information-on-chemicals

Suppliers safety data sheet, Chemadvisor - LOLI, Merck index, RTECS

#### **Training Advice**

Chemical hazard awareness training, incorporating labelling, Safety Data Sheets (SDS), Personal Protective Equipment (PPE) and hvaiene.

Use of personal protective equipment, covering appropriate selection, compatibility, breakthrough thresholds, care, maintenance, fit and standards.

First aid for chemical exposure, including the use of eye wash and safety showers.

Chemical incident response training.

Health, Safety and Environmental Department **Prepared By** 

**Creation Date** 21-Feb-2008 **Revision Date** 12-Jun-2024

**Revision Number** 

**Revision Summary** New emergency telephone response service provider.

# MOEL's Public Notice No. 2023-9 (Standards for Classification and Labeling of Chemical **Substances and Safety Data Sheets)**

#### 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 a 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

**End of Safety Data Sheet**