

ALFAAA13383

Methanesulfonyl chloride

SECTION 1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

| | |
|---|--|
| 产品说明: Product Description: | 甲磺酰氯 Methanesulfonyl chloride |
| Cat No. : | A13383 |
| Synonyms | MsCl; Mesyl chloride |
| CAS No | 124-63-0 |
| Molecular Formula | C H3 Cl O2 S |
| Supplier | Avocado Research Chemicals Ltd. (Part of Thermo Fisher Scientific) Shore Road, Heysham Lancashire, LA3 2XY, United Kingdom Office Tel: +44 (0) 1524 850506 Office Fax: +44 (0) 1524 850608 |
| Emergency Telephone Number | For information US call: 001-800-227-6701 / Europe call: +32 14 57 52 11 Emergency Number US :001-201-796-7100 / Europe : +32 14 57 52 99 CHEMTREC Tel. No. US :001-800-424-9300 / Europe :001-703-527-3887 |
| E-mail address | begel.sdsdesk@thermofisher.com |
| Recommended Use | Laboratory chemicals. |
| Uses advised against | No Information available |

SECTION 2. HAZARD IDENTIFICATION

| Physical State | Appearance | Odor |
|--|--------------|---------|
| Liquid | Light yellow | pungent |
| Emergency Overview | | |
| Lachrymator (substance which increases the flow of tears). Toxic if swallowed. Toxic in contact with skin. Fatal if inhaled. Causes severe skin burns and eye damage. Causes damage to organs. Harmful to aquatic life with long lasting effects. May be corrosive to metals. May cause an allergic skin reaction. May cause respiratory irritation. | | |

Classification of the substance or mixture

| | |
|--|-----------------------|
| Substances/mixtures corrosive to metal | Category 1 |
| Acute Oral Toxicity | Category 3 |
| Acute Dermal Toxicity | Category 3 |
| Acute Inhalation Toxicity - Vapors | Category 1 |
| Skin Corrosion/Irritation | Category 1 B |
| Serious Eye Damage/Eye Irritation | Category 1 |
| Skin Sensitization | Category 1 |
| Specific target organ toxicity - (single exposure) | Category 1 Category 3 |
| Chronic aquatic toxicity | Category 3 |

Label Elements

Methanesulfonyl chloride



Signal Word

Danger

Hazard Statements

H290 - May be corrosive to metals
H330 - Fatal if inhaled
H314 - Causes severe skin burns and eye damage
H370 - Causes damage to organs
H412 - Harmful to aquatic life with long lasting effects
H317 - May cause an allergic skin reaction
H335 - May cause respiratory irritation
H301 + H311 - Toxic if swallowed or in contact with skin

Precautionary Statements

Prevention

P234 - Keep only in original packaging
P264 - Wash face, hands and any exposed skin thoroughly after handling
P270 - Do not eat, drink or smoke when using this product
P271 - Use only outdoors or in a well-ventilated area
P272 - Contaminated work clothing should not be allowed out of the workplace
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P284 - Wear respiratory protection

Response

P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower
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
P310 - Immediately call a POISON CENTER or doctor
P330 - Rinse mouth
P331 - Do NOT induce vomiting
P363 - Wash contaminated clothing before reuse
P390 - Absorb spillage to prevent material damage

Storage

P402 - Store in a dry place
P403 + P233 - Store in a well-ventilated place. Keep container tightly closed
P406 - Store in corrosion resistant polypropylene container with a resistant inliner
P405 - Store locked up

Disposal

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

Physical and Chemical Hazards

Water reactive. May be corrosive to metals.

Health Hazards

Toxic if swallowed. Toxic in contact with skin. Fatal if inhaled. Corrosive. Causes skin and eye burns. Causes serious eye damage. Causes damage to organs. May cause an allergic skin reaction. May cause respiratory irritation. Lachrymator (substance which increases the flow of tears).

Environmental hazards

Harmful to aquatic life with long lasting effects. . Will likely be mobile in the environment due to its water solubility. The product is water soluble, and may spread in water systems.

Other Hazards

Lachrymator (substance which increases the flow of tears)
Toxic to terrestrial vertebrates. This product does not contain any known or suspected endocrine disruptors.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Methanesulfonyl chloride

| Component | CAS No | Weight % |
|--------------------------|----------|----------|
| Methanesulfonyl chloride | 124-63-0 | <=100 |

SECTION 4. FIRST AID MEASURES**General Advice**

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

Eye Contact

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

Skin Contact

Wash off immediately with plenty of water for at least 15 minutes. Immediate medical attention is required.

Inhalation

If not breathing, give artificial respiration. 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.

Ingestion

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

Most important symptoms and effects

Causes burns by all exposure routes. May cause allergic skin reaction. 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: Symptoms of allergic reaction may include rash, itching, swelling, trouble breathing, tingling of the hands and feet, dizziness, lightheadedness, chest pain, muscle pain or flushing

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.

Notes to Physician

Treat symptomatically.

SECTION 5. FIRE-FIGHTING MEASURES**Suitable Extinguishing Media**

CO₂, dry chemical, dry sand, alcohol-resistant foam.

Extinguishing media which must not be used for safety reasons

No information available.

Specific Hazards Arising from the Chemical

Thermal decomposition can lead to release of irritating gases and vapors. The product causes burns of eyes, skin and mucous membranes.

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. Thermal decomposition can lead to release of irritating gases and vapors.

SECTION 6. ACCIDENTAL RELEASE MEASURES**Personal Precautions**

Use personal protective equipment as required. Ensure adequate ventilation. Evacuate personnel to safe areas. Keep people away

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from and upwind of spill/leak.

Environmental Precautions

Should not be released into the environment. Do not flush into surface water or sanitary sewer system.

Methods for Containment and Clean Up

Keep in suitable, closed containers for disposal. Soak up with inert absorbent material.

Refer to protective measures listed in Sections 8 and 13.

SECTION 7. HANDLING AND STORAGE

Handling

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

Storage

Keep containers tightly closed in a dry, cool and well-ventilated place. Corrosives area.

Specific Use(s)

Use in laboratories

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control Parameters**Exposure Controls****Engineering Measures**

Ensure adequate ventilation, especially in confined areas. 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 (European standard - EN 166)

Hand Protection Protective gloves

| Glove material | Breakthrough time | Glove thickness | EU standard | Glove comments |
|----------------|-----------------------------------|-----------------|-------------|-----------------------|
| Natural rubber | See manufacturers recommendations | - | EN 374 | (minimum requirement) |
| Butyl rubber | | | | |
| Nitrile rubber | | | | |
| Neoprene | | | | |
| PVC | | | | |

Inspect gloves before use.

Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. (Refer to manufacturer/supplier for information)

Ensure gloves are suitable for the task: Chemical compatibility, 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.

Skin and body protection Long sleeved clothing

Respiratory Protection When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.

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| | To protect the wearer, respiratory protective equipment must be the correct fit and be used and maintained properly |
| Large scale/emergency use | Use a NIOSH/MSHA or European Standard EN 136 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced Recommended Filter type: Particulates filter conforming to EN 143 Acid gases filter Type E Yellow conforming to EN14387 |
| Small scale/Laboratory use | Use a NIOSH/MSHA or European Standard EN 149:2001 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced. Recommended half mask:- Valve filtering: EN405; or; Half mask: EN140; plus filter, EN 141 When RPE is used a face piece Fit Test should be conducted |
| Hygiene Measures | Handle in accordance with good industrial hygiene and safety practice. |
| Environmental exposure controls | Prevent product from entering drains. |

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

| | | |
|--|-------------------------------|--|
| Appearance | Light yellow | |
| Physical State | Liquid | |
| Odor | pungent | |
| Odor Threshold | No data available | |
| pH | No information available | |
| Melting Point/Range | -33 °C / -27.4 °F | |
| Softening Point | No data available | |
| Boiling Point/Range | 161 °C / 321.8 °F | @ 760 mmHg |
| Flash Point | 110 °C / 230 °F | Method - No information available |
| Evaporation Rate | No data available | |
| Flammability (solid,gas) | Not applicable | Liquid |
| Explosion Limits | No data available | |
| Vapor Pressure | 2.6 mbar @ 20 °C | |
| Vapor Density | 4 (Air = 1.0) | (Air = 1.0) |
| Specific Gravity / Density | 1.480 | |
| Bulk Density | Not applicable | Liquid |
| Water Solubility | insoluble (reacts with water) | |
| Solubility in other solvents | No information available | |
| Partition Coefficient (n-octanol/water) | | |
| Component | log Pow | |
| Methanesulfonyl chloride | 4.98 | |
| Autoignition Temperature | No data available | |
| Decomposition Temperature | No data available | |
| Viscosity | 1.97 mPa.s at 25 °C | |
| Explosive Properties | No information available | |
| Oxidizing Properties | No information available | |
| Molecular Formula | C H3 Cl O2 S | |
| Molecular Weight | 114.55 | |

SECTION 10. STABILITY AND REACTIVITY

| | |
|---------------------------------|--|
| Stability | Water reactive. |
| Hazardous Reactions | None under normal processing. |
| Hazardous Polymerization | Hazardous polymerization does not occur. |

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Conditions to Avoid Incompatible products. Excess heat.

Materials to avoid Acids. Strong oxidizing agents. Strong bases. Alcohols.

Hazardous Decomposition Products Carbon monoxide (CO). Carbon dioxide (CO₂). Sulfur oxides. Thermal decomposition can lead to release of irritating gases and vapors. Hydrogen chloride gas.

SECTION 11. TOXICOLOGICAL INFORMATION

Product Information

(a) acute toxicity;

| Component | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|--------------------------|-------------------|----------------------------------|--|
| Methanesulfonyl chloride | 250 mg/kg (Rat) | LD50 200 - 2000 mg/kg (Rabbit) | LC50 = 111.7 mg/m ³ (Rat) 4 h |

(b) skin corrosion/irritation; Category 1 B Based on available data, the classification criteria are not met

(c) serious eye damage/irritation; Category 1 Based on available data, the classification criteria are not met

(d) respiratory or skin sensitization;

Respiratory
Skin

Based on available data, the classification criteria are not met
Category 1

Based on available data, the classification criteria are not met
May cause sensitization by skin contact

(e) germ cell mutagenicity; Based on available data, the classification criteria are not met

(f) carcinogenicity; Based on available data, the classification criteria are not met
There are no known carcinogenic chemicals in this product

(g) reproductive toxicity; Based on available data, the classification criteria are not met

(h) STOT-single exposure; Category 3
Based on available data, the classification criteria are not met

Results / Target organs

Respiratory system

(i) STOT-repeated exposure; Based on available data, the classification criteria are not met

Target Organs

None known.

(j) aspiration hazard; Based on available data, the classification criteria are not met

Other Adverse Effects

The toxicological properties have not been fully investigated.

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 causes severe swelling, severe damage to the delicate tissue and danger of perforation: Symptoms of allergic reaction may include rash, itching, swelling, trouble breathing, tingling of the hands and feet, dizziness, lightheadedness, chest pain, muscle pain or flushing

SECTION 12. ECOLOGICAL INFORMATION

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Ecotoxicity effects Do not empty into drains. Contains a substance which is: Harmful to aquatic organisms. The product contains following substances which are hazardous for the environment.

| Component | Freshwater Fish | Water Flea | Freshwater Algae | Microtox |
|--------------------------|---|------------|------------------|----------|
| Methanesulfonyl chloride | LC50: = 11 mg/L, 96h static (Lepomis macrochirus) | | | |

Persistence and Degradability Readily biodegradable
Persistence May persist.
Degradation in sewage treatment plant Contains substances known to be hazardous to the environment or not degradable in waste water treatment plants.

Bioaccumulative Potential Product has a high potential to bioconcentrate

| Component | log Pow | Bioconcentration factor (BCF) |
|--------------------------|---------|-------------------------------|
| Methanesulfonyl chloride | 4.98 | No data available |

Mobility in soil The product is water soluble, and may spread in water systems Will likely be mobile in the environment due to its water solubility Is not likely mobile in the environment due its low water solubility and propensity to bind to soil particles

Endocrine Disruptor Information This product does not contain any known or suspected endocrine disruptors
Persistent Organic Pollutant This product does not contain any known or suspected substance
Ozone Depletion Potential This product does not contain any known or suspected substance

SECTION 13. DISPOSAL CONSIDERATIONS

Waste from Residues/Unused Products Waste is classified as hazardous. Dispose of in accordance with the European Directives on waste and hazardous waste. Dispose of in accordance with local regulations.

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

Other Information Do not flush to sewer. Waste codes should be assigned by the user based on the application for which the product was used. Do not empty into drains. Large amounts will affect pH and harm aquatic organisms.

SECTION 14. TRANSPORT INFORMATION

Road and Rail Transport

UN-No UN3246
Proper Shipping Name METHANESULPHONYL CHLORIDE
Hazard Class 6.1
Subsidiary Hazard Class 8
Packing Group I

IMDG/IMO

UN-No UN3246
Proper Shipping Name METHANESULPHONYL CHLORIDE
Hazard Class 6.1
Subsidiary Hazard Class 8
Packing Group I

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IATA FORBIDDEN FOR IATA TRANSPORT**Special Precautions for User** No special precautions required**SECTION 15. REGULATORY INFORMATION****International Inventories**

China, X = listed, Australia, U.S.A. (TSCA), Canada (DSL/NDSL), Europe (EINECS/ELINCS/NLP), Australia (AICS), Korea (KECL), China (IECSC), Japan (ENCS), Philippines (PICCS), Taiwan (TCSI), Japan (ISHL), New Zealand (NZIoC), Japan (ISHL).

| Component | The Inventory of Hazardous Chemicals (2015 Edition) | List of dangerous goods GB 12268 - 2012 | TCSI | IECSC | EINECS | TSCA | DSL | PICCS | ENCS | ISHL | AICS | KECL |
|--------------------------|---|---|------|-------|-----------|------|-----|-------|------|------|------|----------|
| Methanesulfonyl chloride | X | X | X | X | 204-706-1 | X | X | X | X | X | X | KE-23189 |

National Regulations**SECTION 16. OTHER INFORMATION**

Prepared By Health, Safety and Environmental Department
Creation Date 22-Sep-2009
Revision Date 17-Feb-2026
Revision Summary SDS sections updated.

Training Advice

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

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.

Legend**CAS** - Chemical Abstracts Service**EINECS/ELINCS** - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances**PICCS** - Philippines Inventory of Chemicals and Chemical Substances**IECSC** - Chinese Inventory of Existing Chemical Substances**KECL** - Korean Existing and Evaluated Chemical Substances**TSCA** - United States Toxic Substances Control Act Section 8(b) Inventory**DSL/NDSL** - Canadian Domestic Substances List/Non-Domestic Substances List**ENCS** - Japanese Existing and New Chemical Substances**AICS** - Australian Inventory of Chemical Substances**NZIoC** - New Zealand Inventory of Chemicals**WEL** - Workplace Exposure Limit**ACGIH** - American Conference of Governmental Industrial Hygienists**DNEL** - Derived No Effect Level**RPE** - Respiratory Protective Equipment**LC50** - Lethal Concentration 50%**NOEC** - No Observed Effect Concentration**PBT** - Persistent, Bioaccumulative, Toxic**TWA** - Time Weighted Average**IARC** - International Agency for Research on Cancer**PNEC** - Predicted No Effect Concentration**LD50** - Lethal Dose 50%**EC50** - Effective Concentration 50%**POW** - Partition coefficient Octanol:Water**vPvB** - very Persistent, very Bioaccumulative

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

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

OECD - Organisation for Economic Co-operation and Development

BCF - Bioconcentration factor

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

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

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