

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

1.1. Product Identifier

Product Form: Substance

Product Name: Ethanesulfonyl chloride

CAS No: 594-44-5

Product Code: VOLO10033

Standard InChI: InChI=1S/C2H5ClO2S/c1-2-6(3,4)5/h2H2,1H3

1.2. Intended Use of the Product

Use of the substance/mixture: For laboratory research purposes

1.3. Name, Address, and Telephone of the Responsible Party

Manufacturer

Volochem, Inc.

2600 Hilltop Dr.

Bldg B #C211

Richmond, CA 94806

T 510.748.0159

www.volochem.com

1.4. Emergency Telephone Number

Emergency Number : 510-748-0159 (9a-5p M-F)

SECTION 2: HAZARDS IDENTIFICATION

2.1. Classification of the Substance or Mixture

Classification (GHS-US)

Flammable liquids (Category 4)

Acute toxicity, Oral (Category 4)

Acute toxicity, Inhalation (Category 1)

Acute toxicity, Dermal (Category 2)

Skin corrosion (Category 1B)

Serious eye damage (Category 1)

2.2. Label Elements

GHS-US Labeling

Pictogram(s): GHS06, GHS08



Signal word: Danger

Hazard statement(s)

H227 Combustible liquid.

H302 Harmful if swallowed.

H310 + H330 Fatal in contact with skin or if inhaled.

H314 Causes severe skin burns and eye damage.

Precautionary statement(s)

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P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P260	Do not breathe dust/ fume/ gas/ mist/ vapors/ spray.
P262	Do not get in eyes, on skin, or on clothing.
P264	Wash skin thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P280	Wear protective gloves/ protective clothing/ eye protection/ face protection
P301+P330+P331	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P310	Immediately call a POISON CENTER/doctor.
P303+P361+P353	IF ON SKIN: Take off immediately all contaminated clothing. Rinse skin with water or shower.
P310	Immediately call a POISON CENTER/doctor.
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/doctor.
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/doctor.
P370+P378	In case of fire: Use alcohol-resistant foam, dry chemical, or carbon dioxide to extinguish.
P403	Store in a well-ventilated place.
P405	Store locked up.
P501	Dispose of contents/container in accordance with local/regional/national/international regulations.

2.3. Hazards not otherwise classified (HNOC) or not covered by GHS

Lachrymator

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Substance

Name	Synonym(s)	Product Identifiers
Ethanesulfonyl chloride	None	VOLO10033 CAS No. 594-44-5

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SECTION 4: FIRST AID MEASURES

4.1. Description of First Aid Measures

General advice

Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact

Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.

In case of eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician. Continue rinsing eyes during transport to hospital.

If swallowed

Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2. Most important symptoms and effects, both acute and delayed¹

Symptoms/Injuries After Inhalation: Burning sensation. Cough. Sore throat.

Symptoms/Injuries After Skin Contact: Redness. Pain. Blisters.

Symptoms/Injuries After Eye Contact: Redness. Pain. Severe deep burns.

Symptoms/Injuries After Ingestion: Abdominal cramps. Burning sensation.

Chronic Symptoms: The chronic effects of this substance are unknown.

4.3. Indication of Any Immediate Medical Attention and Special Treatment Needed

Prolonged or repeated exposure can cause: nausea, dizziness, headache, and narcosis. To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

SECTION 5: FIREFIGHTING MEASURES

5.1. Extinguishing Media

Suitable Extinguishing Media: For small fires, use media such as alcohol-resistant foam, dry chemical, or carbon dioxide. For large fires, apply water from as far as possible. Use very large quantities (flooding) of water applied as a mist or spray; solid streams of water may be ineffective. Cool all affected containers with flooding quantities of water. .

5.2. Special Hazards Arising From the Substance or Mixture

Fire Hazard: Product is a combustible liquid per GHS classification. May release toxic gases during combustion.

Explosion Hazard: Product is not explosive.

Hazardous Combustion Products: Carbon oxides, sulfur oxides, hydrogen chloride gas.

5.3. Advice for Firefighters

Firefighting Instructions: Exercise caution when fighting any chemical fire.

Protection During Firefighting: Do not enter fire area without proper protective equipment, including respiratory protection. Wear self contained breathing apparatus for fire fighting if necessary.

5.4. NFPA Rating

Health hazard: 4

Fire: 2

Reactivity Hazard: 2

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SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal Precautions, Protective Equipment and Emergency Procedures

6.1.1. For Non-emergency Personnel

Protective Equipment: Use appropriate personal protection equipment (PPE).

Emergency Procedures: Evacuate unnecessary personnel.

6.1.2. For Emergency Responders

Protective Equipment: Equip cleanup crew with proper protection.

Emergency Procedures: Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas.

6.2. Environmental Precautions

Prevent entry to sewers and public waters.

6.3. Methods and Material for Containment and Cleaning Up

For Containment: Contain and collect as any solid.

Methods for Cleaning Up: Collect spillage. Avoid generation of dust during clean-up of spills. Clear up spills immediately and dispose of waste safely.

6.4. Reference to Other Sections

See heading 8, Exposure Controls and Personal Protection.

SECTION 7: HANDLING AND STORAGE

7.1. Precautions for Safe Handling

Avoid contact with skin and eyes. Avoid inhalation of vapor or mist. Keep away from sources of ignition - No smoking. Take measures to prevent the buildup of electrostatic charge.

7.2. Conditions for Safe Storage, Including Any Incompatibilities

Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

7.3. Specific End Use(s) For laboratory research purposes

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control Parameters

No Occupational Exposure Limits (OELs) have been established for this product or its chemical components.

8.2. Exposure Controls

Appropriate Engineering Controls:

Emergency eye wash fountains should be available in the immediate vicinity of any potential exposure. Avoid high vapor concentration. Ensure adequate ventilation, especially in confined areas.

Personal Protective Equipment:



Gloves. Protective goggles. Insufficient ventilation: wear respiratory protection.

Hand Protection:

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands

Eye Protection:

Tightly fitting safety goggles. Faceshield (8-inch minimum). Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

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Respiratory Protection:	Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).
Skin and body protection:	Complete suit protecting against chemicals. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.
Hygiene measures:	Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product

This recommendation is advisory only and must be evaluated by an Industrial Hygienist familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on Basic Physical and Chemical Properties

Physical State:	Liquid
Appearance:	Clear, colorless
Odor:	No data available
Odor Threshold:	No data available
pH:	No data available
Relative Evaporation Rate (butylacetate=1):	No data available
Melting Point:	No data available
Boiling Point:	177 °C (351 °F) - lit.
Flash Point:	83 °C (181 °F) - closed cup
Auto-ignition Temperature:	No data available
Decomposition Temperature:	No data available
Flammability (solid, gas):	No data available
Vapor Pressure:	17 hPa (13 mmHg) at 65 °C (149 °F)
Relative Vapor Density at 20 °C:	4.44 - (Air = 1.0)
Relative Density:	1.357 g/cm ³ at 25 °C (77 °F)
Specific Gravity:	No data available
Solubility:	No data available
Log Pow:	No data available
Log Kow:	No data available
Viscosity, Kinematic:	No data available
Viscosity, Dynamic:	No data available
Explosive Properties:	No data available
Oxidizing Properties:	No data available
Explosive Limits:	No data available

9.2. Other Information No additional information available

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SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity:	Compound will react with strong bases, alcohols, water, and amines, releasing hydrogen chloride.
10.2. Chemical Stability:	Product is stable under recommended storage conditions.
10.3. Possibility of Hazardous Reactions:	Water can react, releasing hydrogen chloride gas and causing a build-up of pressure in a closed container. Handle under dry conditions.
10.4. Conditions to Avoid:	Direct sunlight, extremely high temperatures, moisture
10.5. Incompatible Materials:	Water, strong bases, oxidizing agents, alcohols, amines
10.6. Hazardous Decomposition Products:	Sulfur oxides, carbon oxides (CO, CO ₂), hydrogen chloride

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Information on Toxicological Effects

Acute Toxicity:	Oral LD50 LD50 Oral - rat - 360 mg/kg Inhalation LC50 LC50 Inhalation - rat - 4 h -> 86 ppm Dermal LD50 LD50 Dermal - rabbit - 200 - 2,000 mg/kg Other information on acute toxicity No data available	
Skin Corrosion/Irritation:	Skin - rabbit - Corrosive - 4 h	
Serious Eye Damage/Irritation:	Eyes - rabbit - Corrosive to eyea	
Respiratory or Skin Sensitization:	No data available	
Germ Cell Mutagenicity:	No data available	
Carcinogenicity:	Not classified	
Reproductive Toxicity:	No data available	
Specific Target Organ Toxicity (Single Exposure):	No data available	
Specific Target Organ Toxicity (Repeated Exposure):	No data available	
Aspiration Hazard:	No data available	
Potential Health Effects		

SECTION 12: ECOLOGICAL INFORMATION

12.1. Toxicity	No data available
12.2. Persistence and Degradability	No data available
12.3. Bioaccumulative Potential	No data available
12.4. Mobility in Soil	No data available
12.5. Other Adverse Effects	No data available

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SECTION 13: DISPOSAL CONSIDERATIONS

13.1. Waste Treatment Methods

Waste Disposal Recommendations: Contact a licensed professional waste disposal service to dispose of this material. Dispose of waste material in accordance with all local, regional, national, and international regulations.

SECTION 14: TRANSPORT INFORMATION

In Accordance With ICAO/IATA/IMDG/DOT

14.1. UN Number:	2927
14.2. UN Proper Shipping Name:	Toxic liquids, corrosive, organic, n.o.s. (Ethanesulfonyl chloride)
14.3. Transport Hazard Class(es):	6.1 (8)
14.4. Packing Group:	II
14.5.1. Marine Pollutant:	No
14.5.2. Reportable Quantity:	No
14.6.1. Toxic Inhalation Hazard:	No
14.6.2. Mode Specific Comments:	None
14.6.2.1. Ground Transportation - DOT (US):	No comments
14.6.2.2. Marine Transportation – IMDG:	No comments
14.6.2.3. Air Transportation - IATA/ICAO:	No comments

SECTION 15: REGULATORY INFORMATION

15.1. US Federal Regulations

EPA TSCA Inventory

Listed

SARA 302 Components

SARA 302. No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components

SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold reporting levels established by SARA Title III, Section 313.

SARA 311/312 Components

Fire Hazard, Acute Health Hazard

15.2. US State Regulations

California Proposition 65 List 2014

Not listed

Maine Chemicals of High Concern List 2012

Not listed

Massachusetts Right to Know Hazardous Substance List 2014

Not listed

New Jersey Right to Know Hazardous Substance List 2010

Not listed

Pennsylvania Right to Know Hazardous Substance List 2010

Not listed

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SECTION 16: OTHER INFORMATION

16.1. Other Classifications

HMIS

Health Hazard: 4

Flammability: 2

Physical hazards: 0

16.2. References

- 1) Symptoms based on data found for analogous compound, methylsulfonyl chloride (CAS 124-63-0), in International Chemical Safety Card 1163 (Validated October 23, 1995).

Revision date : 1/3/2015

Other Information : This document has been prepared in accordance with the SDS requirements of the OSHA Hazard Communication Standard 29 CFR 1910.1200.

Volochem chemicals are for research purposes only and are NOT intended for use as drugs, food additives, household goods, or pesticides. The information herein is believed to be correct, but does not claim to be all inclusive and should be used only as a guide. Neither the above named supplier nor any of its affiliates or subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All chemical reagents must be handled with the recognition that their chemical, physiological, toxicological, and hazardous properties have not been fully investigated or determined. All chemical reagents should be handled only by individuals who are familiar with their potential hazards and who have been fully trained in proper safety, laboratory, and chemical handling procedures. Although certain hazards are described herein, we cannot guarantee that these are the only hazards which exist. Our SDS are based only on data available at the time of shipping and are subject to change without notice as new information is obtained. Avoid long storage periods since the product is subject to degradation with age and may become more dangerous or hazardous. It is the responsibility of the user to request updated SDS for products that are stored for extended periods. Disposal of unused product must be undertaken by qualified personnel who are knowledgeable in all applicable regulations and follow all pertinent safety precautions including the use of appropriate protective equipment (e.g. protective goggles, protective clothing, breathing equipment, face mask, fume hood). For proper handling and disposal, always comply with federal, state and local regulations.

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