

Material Safety Data Sheet

Sulfur trioxide, stabilized, 99%

ACC# 37575

Section 1 - Chemical Product and Company Identification

MSDS Name: Sulfur trioxide, stabilized, 99%

Catalog Numbers: AC211100000, AC211104000

Synonyms: Sulfan(R); Sulfuric anhydride. Stabilizer is <0.3% dimethyl sulfate. Powerful sulfonating agent. May contain low-melting solid polymer, the formation of which is unavoidable.

Company Identification:

Acros Organics N.V.
One Reagent Lane
Fair Lawn, NJ 07410

For information in North America, call: 800-ACROS-01

For emergencies in the US, call CHEMTREC: 800-424-9300

Section 2 - Composition, Information on Ingredients

CAS#	Chemical Name	Percent	EINECS/ELINCS
7446-11-9	Sulfur trioxide	99	231-197-3

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Appearance: clear, colorless to pale yellow liquid.

Danger! Sulfur trioxide reacts violently with water forming sulfuric acid. Causes eye and skin burns. Causes digestive and respiratory tract burns. May be fatal if inhaled. Do not freeze. Hygroscopic (absorbs moisture from the air).

Target Organs: Eyes, skin, mucous membranes.

Potential Health Effects

Eye: Causes eye burns.

Skin: Causes skin burns.

Ingestion: Causes gastrointestinal tract burns.

Inhalation: May be fatal if inhaled. Causes chemical burns to the respiratory tract.

Chronic: Workers chronically exposed to sulfuric acid mists may show various lesions of the skin, tracheobronchitis, stomatitis, conjunctivitis, or gastritis. Occupational exposure to strong inorganic acid mists containing sulfuric acid is carcinogenic to humans.

Section 4 - First Aid Measures

Eyes: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical aid immediately.

Skin: In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical aid immediately. Wash clothing before reuse.

Ingestion: If swallowed, do NOT induce vomiting. Get medical aid immediately. If victim is fully conscious, give a cupful of water. Never give anything by mouth to an unconscious person.

Inhalation: POISON material. If inhaled, get medical aid immediately. Remove victim to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.

Notes to Physician: Treat symptomatically and supportively.

Section 5 - Fire Fighting Measures

General Information: As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Reacts with most metals in the presence of moisture, liberating extremely flammable hydrogen gas. Reacts with steam to form corrosive, toxic fumes of sulfuric acid. Approach fire from upwind to avoid hazardous vapors and toxic decomposition products. Strong dehydrating agent, which may cause ignition of finely divided materials on contact. Oxides of sulfur may be produced in fire. SO₃ chars many organic substances due to its avidity for water. On contact with wood shavings, the heat produced by dehydration is sufficient to cause fire.

Extinguishing Media: Do NOT use water directly on fire. Use carbon dioxide or dry chemical. Do NOT get water inside containers.

Flash Point: Not available.

Autoignition Temperature: Not available.

Explosion Limits, Lower: Not available.

Upper: Not available.

NFPA Rating: (estimated) Health: 3; Flammability: 0; Instability: 2; Special Hazard: -W-

Section 6 - Accidental Release Measures

General Information: Use proper personal protective equipment as indicated in Section 8.

Spills/Leaks: Avoid runoff into storm sewers and ditches which lead to waterways. Clean up spills immediately, observing precautions in

the Protective Equipment section. Absorb spill using an absorbent, non-combustible material such as earth, sand, or vermiculite. Do not use combustible materials such as sawdust. Provide ventilation. Do not get water inside containers. Evacuate unnecessary personnel. Approach spill from upwind.

Section 7 - Handling and Storage

Handling: Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Do not get in eyes, on skin, or on clothing. Keep container tightly closed. Do not allow contact with water. Discard contaminated shoes. Do not breathe vapor. Store absolutely dry. Do not use with metal spatula or other metal items. Use only with adequate ventilation or respiratory protection.

Storage: Keep from freezing. Keep container closed when not in use. Store in a cool, dry, well-ventilated area away from incompatible substances. Store at around 20°C. Store in a suitable container in a dry area above the substance's freezing point. Do NOT freeze.

Section 8 - Exposure Controls, Personal Protection

Engineering Controls: Use explosion-proof ventilation equipment. Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate ventilation to keep airborne concentrations low. Use a corrosion-resistant ventilation system.

Exposure Limits

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
Sulfur trioxide	none listed	none listed	none listed
Sulfuric acid	0.2 mg/m ³ TWA (thoracic fraction)	1 mg/m ³ TWA 15 mg/m ³ IDLH	1 mg/m ³ TWA

OSHA Vacated PELs: Sulfur trioxide: No OSHA Vacated PELs are listed for this chemical. Sulfuric acid: 1 mg/m³ TWA

Personal Protective Equipment

Eyes: Wear chemical splash goggles and face shield.

Skin: Wear appropriate protective gloves to prevent skin exposure.

Clothing: Wear appropriate protective clothing to prevent skin exposure.

Respirators: A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements or European Standard EN 149 must be followed whenever workplace conditions warrant respirator use.

Section 9 - Physical and Chemical Properties

Physical State: Liquid

Appearance: clear, colorless to pale yellow

Odor: None reported.

pH: Not available.

Vapor Pressure: 433 mm Hg @ 25 deg C

Vapor Density: 2.7

Evaporation Rate: Not available.

Viscosity: 1.59 cP 30 deg C

Boiling Point: 44.8 deg C @ 760 mm Hg

Freezing/Melting Point: 16.8 deg C

Decomposition Temperature: Not available.

Solubility: reacts violently with water

Specific Gravity/Density: 1.9224 g/cm³

Molecular Formula: O₃S

Molecular Weight: 80.06

Section 10 - Stability and Reactivity

Chemical Stability: Sulfuric acid reacts vigorously, violently or explosively with many organic and inorganic chemicals and with water. Moisture sensitive. Readily hydrolyzed by moisture. Decomposes in the presence of water or acids to form sulfuric acid.

Conditions to Avoid: Excess heat, exposure to moist air or water, freezing temperatures, confined spaces.

Incompatibilities with Other Materials: Water, metals, bases, organic materials.

Hazardous Decomposition Products: Oxides of sulfur.

Hazardous Polymerization: May occur.

Section 11 - Toxicological Information

RTECS#:

CAS# 7446-11-9: WT4830000

CAS# 7664-93-9: WS5600000

LD50/LC50:

Not available.

CAS# 7664-93-9:

Draize test, rabbit, eye: 250 ug Severe;

Inhalation, mouse: LC50 = 320 mg/m³/2H;

Inhalation, mouse: LC50 = 320 mg/m³;

Inhalation, rat: LC50 = 510 mg/m³/2H;

Inhalation, rat: LC50 = 510 mg/m³;

Oral, rat: LD50 = 2140 mg/kg;

Carcinogenicity:

CAS# 7446-11-9: Not listed by ACGIH, IARC, NTP, or CA Prop 65.

CAS# 7664-93-9:

- **ACGIH:** A2 - Suspected Human Carcinogen (contained in strong inorganic acid mists)
- **California:** carcinogen, initial date 3/14/03 (listed as Strong inorganic acid mists containing sulfuric acid).
- **NTP:** Known carcinogen (listed as Strong inorganic acid mists containing s).
- **IARC:** Group 1 carcinogen

Epidemiology: Workers exposed to industrial sulfuric acid mist showed a statistical increase in laryngeal cancer. This suggests a possible relationship between carcinogenesis and inhalation of sulfuric acid mist.

Teratogenicity: No information available.

Reproductive Effects: No information available.

Mutagenicity: No information available.

Neurotoxicity: No information available.

Other Studies:

Section 12 - Ecological Information

No information available.

Section 13 - Disposal Considerations

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.

RCRA P-Series: None listed.

RCRA U-Series: None listed.

Section 14 - Transport Information

	US DOT	Canada TDG
Shipping Name:	SULFUR TRIOXIDE, STABILIZED	SULFUR TRIOXIDE, STABILIZED
Hazard Class:	8	8
UN Number:	UN1829	UN1829
Packing Group:	I	I

Section 15 - Regulatory Information

US FEDERAL

TSCA

CAS# 7446-11-9 is listed on the TSCA inventory.

CAS# 7664-93-9 is listed on the TSCA inventory.

Health & Safety Reporting List

None of the chemicals are on the Health & Safety Reporting List.

Chemical Test Rules

None of the chemicals in this product are under a Chemical Test Rule.

Section 12b

None of the chemicals are listed under TSCA Section 12b.

TSCA Significant New Use Rule

None of the chemicals in this material have a SNUR under TSCA.

CERCLA Hazardous Substances and corresponding RQs

CAS# 7664-93-9: 1000 lb final RQ; 454 kg final RQ

SARA Section 302 Extremely Hazardous Substances

CAS# 7446-11-9: 100 lb TPQ (This material is a reactive solid. The TPQ does not default to 10000 pounds for non-powder, non-molten, non-solvent form) CAS# 7664-93-9: 1000 lb TPQ

SARA Codes

CAS # 7446-11-9: immediate, reactive.

CAS # 7664-93-9: immediate, delayed, reactive.

Section 313

This material contains Sulfuric acid (CAS# 7664-93-9, -%), which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR Part 373.

Clean Air Act:

This material does not contain any hazardous air pollutants.

This material does not contain any Class 1 Ozone depleters.

This material does not contain any Class 2 Ozone depleters.

Clean Water Act:

CAS# 7664-93-9 is listed as a Hazardous Substance under the CWA.

None of the chemicals in this product are listed as Priority Pollutants under the CWA.

None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

OSHA:

CAS# 7446-11-9 is considered highly hazardous by OSHA.

STATE

CAS# 7446-11-9 can be found on the following state right to know lists: New Jersey, Pennsylvania, Massachusetts.

CAS# 7664-93-9 can be found on the following state right to know lists: California, New Jersey, Pennsylvania, Minnesota, Massachusetts.

California Prop 65

WARNING: This product contains Sulfuric acid, listed as 'Strong inorganic acid mists contain', a chemical known to the state of California to cause cancer.

California No Significant Risk Level: None of the chemicals in this product are listed.

European/International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols:

C

Risk Phrases:

R 14 Reacts violently with water.

R 26 Very toxic by inhalation.

R 34 Causes burns.

Safety Phrases:

S 25 Avoid contact with eyes.

S 36/37/39 Wear suitable protective clothing, gloves and eye/face protection.

S 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

S 8 Keep container dry.

WGK (Water Danger/Protection)

CAS# 7446-11-9: 2

CAS# 7664-93-9: 2

Canada - DSL/NDSL

CAS# 7446-11-9 is listed on Canada's DSL List.

CAS# 7664-93-9 is listed on Canada's DSL List.

Canada - WHMIS

This product has a WHMIS classification of E, D1A, F.

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by those regulations.

Canadian Ingredient Disclosure List

CAS# 7446-11-9 is listed on the Canadian Ingredient Disclosure List.

CAS# 7664-93-9 is listed on the Canadian Ingredient Disclosure List.

Section 16 - Additional Information

MSDS Creation Date: 11/23/1998

Revision #3 Date: 3/04/2004

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall Fisher be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if Fisher has been advised of the possibility of such damages.