

## SECTION 1: CHEMICAL PRODUCT and COMPANY IDENTIFICATION

Catalog No.  
L17377

**Product Name:** Sulphur tetrafluoride  
**Manufacturer/Supplier Name:** Alfa Aesar - A Johnson Matthey Company  
**Address:** 30 Bond St.  
Ward Hill, MA 01835  
**Business Phone:** 978-521-6300  
**Business Fax:** 978-521-6350  
**For information**  
**in North America, call:** 978-521-6300

**CHEMTREC Numbers:**

**For emergencies in the US, call CHEMTREC: 800-424-9300**  
**For emergencies outside US, call INTERNATIONAL: (703)527-3887**  
**For Nonemergency, call: (800)262-8200**

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## SECTION 2 : COMPOSITION, INFORMATION ON INGREDIENTS

Catalog No. L17377

**Chemical Name** Sulphur tetrafluoride  
**CAS#** 7783-60-0

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## SECTION 3 : HAZARDS IDENTIFICATION

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**Emergency Overview:** Highly toxic. Corrosive. Water reactive.

**Sulphur tetrafluoride:**

**Route of Exposure:** Eyes. Skin. Inhalation. Ingestion.

**Potential Health Effects:**

**Eye Contact:** Corrosive, contact causes severe eye burns which may result in permanent tissue and corneal damage.

**Skin Contact:** Corrosive causes skin burns and severe irritation.

**Inhalation:** Corrosive, causes severe respiratory tract and mucous membrane irritation.

**Ingestion:** Corrosive and may cause severe and permanent damage to mouth, throat, and stomach.

**Target Organs:** Eyes. Skin. Respiratory system. G.I. Tract.

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**SECTION 4 : FIRST AID MEASURES**Catalog No. L17377

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<b>Eye Contact:</b>	Immediately flush eyes with plenty of water for at least 20 minutes. Assure adequate flushing of the eyes by separating the eyelids with fingers. Get immediate medical attention if irritation persists, or symptoms of overexposure become apparent.
<b>Skin Contact:</b>	Immediately wash skin with plenty of water for at least 20 minutes, while removing contaminated clothing and shoes. Get medical attention especially, if irritation develops, persists, or symptoms of overexposure become apparent.
<b>Inhalation:</b>	Remove to fresh air. If not breathing, give artificial respiration or give oxygen by trained personnel. Keep warm. Get immediate medical attention.
<b>Ingestion:</b>	If swallowed, call a physician or poison control center immediately. Never give anything by mouth to an unconscious person. Do not induce vomiting unless instructed by medical personnel. Get medical attention.
<b>Other First Aid:</b>	Exposures require specialized first aid with contact and medical follow-up. Symptoms of exposures may be delayed.

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**SECTION 5 : FIRE FIGHTING MEASURES**Catalog No. L17377

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<b>Flash Point:</b>	No data
<b>Extinguishing Media:</b>	Use dry powder or carbon dioxide when fighting a fire involving this material.
<b>Unsuitable Media:</b>	Water extinguishers are not recommended.
<b>Protective Equipment:</b>	As in any fire, wear self-contained breathing apparatus pressure-demand, NIOSH (approved or equivalent) and full protective gear.

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**SECTION 6 : ACCIDENTAL RELEASE MEASURES**Catalog No. L17377

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<b>Personal Precautions:</b>	Shut off source of leak if it is safe to do so. Keep upwind of leak. Evacuate area until gas has dispersed. See also section 8.
<b>Spill Cleanup Measures:</b>	Clean up spills immediately, observing precautions in the Protective Equipment section. Shut off leak if it is safe to do so. Ventilate spill area and allow to evaporate. Evacuate area until gas has dispersed. Eliminate all sources of ignition. Do not expose spill to moisture or water. Refer to section 13 for disposal or reporting requirements.
<b>Environmental Precautions:</b>	Do not allow material to enter drains or streams.

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**SECTION 7 : HANDLING and STORAGE**Catalog No. L17377

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<b>Handling:</b>	This product should be handled only by, or under the close supervision of, those properly qualified in the handling and use of potentially hazardous chemicals, who should take into account the fire, health and chemical hazard data. It should always be handled in an efficient fume hood or equivalent system. The user should consider that the toxicological and physiological properties of many compounds are not yet well determined and that new hazardous products may arise from reactions between chemicals. Care should be taken to prevent any chemical from coming into contact with the skin or eyes and from contaminating personal clothing.
<b>Storage:</b>	Store in a cool, dry, well ventilated area away from sources of heat, combustible materials, and incompatible substances. Keep container tightly closed when not in use. Product is moisture sensitive.
<b>Hygiene Practices:</b>	Wash thoroughly after handling. Avoid contact with eyes and skin. Avoid inhaling vapor or mist.

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**SECTION 8 : EXPOSURE CONTROLS, PERSONAL PROTECTION**Catalog No. L17377

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Guideline Type:	NIOSH REL-STEL
Guideline Information:	0.1 ppm 0.4 mg/m <sup>3</sup> Ceiling.
Guideline Type:	ACGIH TLV-STEL
Guideline Information:	0.1 ppm 0.44 mg/m <sup>3</sup> Ceiling

**Engineering Controls:** Use appropriate engineering control such as process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits. Where such systems are not effective wear suitable personal protective equipment, which performs satisfactorily and meets OSHA or other recognized standards. Consult with local procedures for selection, training, inspection and maintenance of the personal protective equipment.

**Skin Protection Description:** Wear suitable protective clothing to prevent contact with skin.

**Hand Protection Description:** Wear appropriate protective gloves. Consult glove manufacturers for glove permeability data.

**Eye/Face Protection:** Wear appropriate protective glasses or splash goggles as described by 29 CFR 1910.133, OSHA eye and face protection regulation, or the European standard EN 166.

**Respiratory Protection:** A NIOSH approved air-purifying respirator with an appropriate cartridge or canister may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits. Protection provided by air purifying respirators is limited to airborne concentrations that are typically within 10 times the exposure limit. Use a positive pressure air supplied respirator if there is any potential for an uncontrolled release, exposure levels are not known, or any other circumstances where air-purifying respirators may not provide adequate protection. A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant a respirators use.

**Other Protective:** Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.

**Ingredient Guidelines**

Ingredient: Sulphur tetrafluoride

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**SECTION 9 : PHYSICAL and CHEMICAL PROPERTIES**Catalog No. L17377

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Physical State/Appearance:	Gas
Color:	Colorless
Flash Point:	No data
Boiling Point:	-40°C (-40°F)
Melting Point:	-124°C (-191.2°F)
Solubility in Water:	Reacts
Density:	1.95°C @ -78°C (Ref:Sax)
Molecular Formula:	F <sub>4</sub> S
Molecular Weight:	108.06

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**SECTION 10 : STABILITY and REACTIVITY**Catalog No. L17377

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**Conditions to Avoid:** Heat, flames and sparks.

**Incompatibilities with Other Materials:** Oxidizing agents. Avoid exposure to moist air or water.

**Possible Decomposition Product:** Hydrogen fluoride. Sulphur dioxide.

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**SECTION 11 : TOXICOLOGICAL INFORMATION**Catalog No. L17377

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**Sulphur tetrafluoride :**

RTECS Number: WT4800000  
Eye Effect: No data reported in the cited references as of the revision date.  
Skin Effects: No data reported in the cited references as of the revision date.  
Ingestion Effects: No data reported in the cited references as of the revision date.  
Inhalation Effects: Inhalation - rat LCLo: 19 ppm/4H (RTECS)

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**SECTION 12 : ECOLOGICAL INFORMATION**Catalog No. L17377

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Ecotoxicity: No information provided.  
Bioaccumulation: No information provided.  
Biodegradation: No information provided.  
Environmental Stability: No information provided.

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**SECTION 13 : DISPOSAL CONSIDERATIONS**Catalog No. L17377

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Waste Disposal: Consult with the US EPA Guidelines listed in 40 CFR Part 261.3 for the classifications of hazardous waste prior to disposal. Furthermore, consult with your state and local waste requirements or guidelines, if applicable, to ensure compliance. Arrange disposal in accordance to the EPA and/or state and local guidelines, by a licensed disposal company.

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**SECTION 14 : TRANSPORT INFORMATION**Catalog No. L17377

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DOT Shipping Name: Sulfur tetrafluoride  
DOT Hazard Class: 2.3  
DOT Identification Number: UN2418  
DOT Subpart E Labeling Requirement: 2.3,8

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**SECTION 15 : REGULATORY INFORMATION**Catalog No. L17377

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**Sulphur tetrafluoride :**

TSCA 8(b): Inventory Status: Listed on the TSCA inventory.

Risk Phrases: R14 Reacts violently with water.  
R26 Very toxic by inhalation.  
R34 Causes burns.  
R37 Irritating to respiratory system.

Safety Phrase: S9 Keep container in a well ventilated place.  
S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.  
S36/37/39 Wear suitable protective clothing, gloves and eye/face protection.  
S45 In case of accident or if you feel unwell, seek medical advice immediately

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MSDS Preparation Date: January 1, 2002, Version 1

MSDS Revision Date: April 14, 2003.

MSDS Author: Actio Corporation.

**Disclaimer:**

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**References:**

1. American Chemical Society, STN Easy Online Database
2. Brethericks Reactive Chemical Hazards Database. Version 2.
3. Gassarett and Doulls Toxicology, The Basic Science of Poisons.
4. Hawleys Condensed Chemical Dictionary, Thirteenth Edition
5. IARC monographs on the Evaluation of the Carcinogenic Risk of Chemicals to Man, WHO International Research on Cancer.
6. Industrial Hygiene and Toxicology, by F.A. Patty.
7. National Library of Medicine, Department of Health and Human Services, Hazardous Substances Data Bank (HSDB).
8. National Toxicology Program (NTP) Eighth Report on Carcinogens, 1997.
9. NIOSH Registry of Toxic Effects of Chemical Substances (RTECS) and Pocket Guide to Chemical Hazards.
10. OSHA Hazard Communication Standard, 1910.1200 and Z Tables.
11. Sax Dangerous Properties of Industrial Materials. Tenth Edition.
12. The Merck Index: An Encyclopedia of Chemicals and Drugs. Merck and Company. Twelfth Edition 1998.
13. Threshold Limit Values for Chemical Substances and Physical Agents in the Work Environment and Biological Exposure Indices. TLV Booklet, 2001.

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