



# MATERIAL SAFETY DATA SHEET

## PRODUCT INFORMATION

**PRODUCT:** Sulfur Hexafluoride  
**TRADE NAME:** Sulfur Hexafluoride  
**CHEMICAL NAME:** Sulfur Hexafluoride  
**SYNONYMS:** Sulfur Fluoride; Sulphur Hexafluoride  
**FORMULA:** SF<sub>6</sub>  
**CHEMICAL FAMILY:** Inorganic Fluoride  
**MANUFACTURER'S NAME:** Air Liquide Canada Inc.  
**MANUFACTURER'S ADDRESS:** 1250, Blvd René-Lévesque West Suite 1700  
Montréal, Québec, Canada H3B 5E6  
**SUPPLIER'S NAME:** Air Liquide Canada Inc.  
**SUPPLIER'S ADDRESS:** 1250 René-Lévesque Blvd. West Suite 1700  
Montréal (Québec) Canada H3B 5E6  
**EMERGENCY PHONE NUMBER:** (514) 878-1667  
**MOLECULAR WEIGHT:** 146.06  
**PRODUCT USE:** Various  
**PRODUCT IDENTIFICATION UN 1080  
NUMBER:**

## HAZARDOUS INGREDIENTS

CHEMICAL ID	CONCENTRATION	CAS #	LD(50)	LC(50)
Sulfur Hexafluoride	100%	2551-62-4	l <sub>vn</sub> -R <sub>bt</sub> 5790 mg/kg	None published

MSDS for: Sulfur Hexafluoride / FaxBack Doc. # : 1140

## PHYSICAL DATA

**PHYSICAL STATE:** Gas and liquid under pressure  
**APPEARANCE:** Colorless gas and liquid  
**ODOR:** Odorless  
**ODOR THRESHOLD:** Not applicable  
**SPECIFIC GRAVITY (H<sub>2</sub>O = 1):** See Vapor Density (air = 1)  
**VAPOR PRESSURE:** 1838 kPa @ 15°C  
**VAPOR DENSITY (air = 1):** 5.1  
**EVAPORATION RATE:** Not applicable (gas)

**BOILING POINT:** Sublimation Point = -63.8°C

**FREEZING POINT:** -50.8°C

**pH:** Unknown

**GAS DENSITY:** 6.177 kg/m<sup>3</sup> @ 15°C, 101.3 kPa

**COEFFICIENT OF WATER/OIL @ 15°C,** Bunsen Coefficient = 0.0064

**DISTRIBUTION:**

<b>FIRE OR EXPLOSION HAZARD</b>
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**CONDITIONS OF** Nonflammable gas

**FLAMMABILITY:**

**MEANS OF EXTINCTION:** Nonflammable gas

**FLASHPOINT AND METHOD** Nonflammable gas

**OF DETERMINATION:**

**UPPER EXPLOSION LIMIT (% Nonflammable gas**  
**BY VOL):**

**LOWER EXPLOSION LIMIT (% Nonflammable gas**  
**BY VOL):**

**AUTO-IGNITION** Nonflammable gas

**TEMPERATURE:**

**FLAMMABILITY** Nonflammable gas

**CLASSIFICATION:**

**HAZARDOUS COMBUSTION** Nonflammable gas

**PRODUCTS:**

**EXPLOSION DATA:** Nonflammable gas

**SENSITIVITY TO STATIC** None

**DISCHARGE:**

MSDS for: Sulfur Hexafluoride / FaxBack Doc. # : 1140

<b>REACTIVITY DATA</b>
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**CHEMICAL STABILITY:** Stable

**INCOMPATIBLE MATERIALS:** Sulfur hexafluoride is stable at elevated temperatures (>200°C) only if contained in aluminum, stainless steel, copper and brasses or silver. Other metals can cause slow decomposition to SF<sub>2</sub>, S<sub>2</sub>F<sub>2</sub>, SF<sub>4</sub> and S<sub>2</sub>F<sub>10</sub>. If oxygen is present, thionyl fluoride compounds such as SOF<sub>2</sub>, SO<sub>2</sub>F<sub>2</sub> will be formed as well as other toxic fluoride compounds.

**CONDITIONS OF REACTIVITY:** Unknown

**HAZARDOUS DECOMPOSITION** See Incompatible Materials, above.

**PRODUCTS:**

<b>TOXICOLOGICAL PROPERTIES</b>
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**ROUTES OF ENTRY:**

**SKIN CONTACT:** Contact with liquid can result in frostbite.

**SKIN ABSORPTION:** None

**EYE:** Contact with liquid can result in frostbite.

**INHALATION:** Effects of exposure to high concentrations so as to displace the oxygen in the air necessary for life are headache, dizziness, labored breathing and eventual unconsciousness.

**INGESTION:** None

**ACUTE OVER EXPOSURE EFFECTS:** Sulfur Hexafluoride is nontoxic, but the liberation of a large amount in a confined area could displace the amount of oxygen in air necessary to support life.

**CHRONIC OVER EXPOSURE EFFECTS:** None

**EXPOSURE LIMITS:** TWA = 1,000 molar ppm (ACGIH 1995-1996)

**IRRITANCY OF PRODUCT:** None

**SENSITIZATION TO MATERIAL:** None

**CARCINOGENICITY, REPRODUCTIVE EFFECTS:** None

**TERATOGENICITY, MUTAGENICITY:** None

**TOXICOLOGICALLY SYNERGISTIC PRODUCTS:** None

MSDS for: Sulfur Hexafluoride / FaxBack Doc. # : 1140

<b>PREVENTIVE MEASURES</b>
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**PERSONAL PROTECTIVE EQUIPMENT:** Protective gloves. Safety goggles or glasses. Safety shoes.

**SPECIFIC ENGINEERING CONTROLS:** At normal temperatures, sulfur hexafluoride is noncorrosive and may be used with any common structural material. At elevated temp, sulfur hexafluoride is stable in the presence of aluminum, stainless steel, copper, brasses or silver.

**LEAK AND SPILL PROCEDURES:** EVACUATE ALL PERSONNEL FROM AFFECTED AREA.

Use appropriate protective equipment. If leak is in user's equipment, be certain to purge piping with an inert gas prior to attempting repairs. If leak is on container or container valve, contact the closest Air Liquide Canada location.

**WASTE DISPOSAL:** Do not attempt to dispose of waste or unused quantities. Return in the shipping container properly labeled, with any valve outlet plugs or caps secured and valve protection cap in place to Air Liquide Canada for proper disposal. For emergency disposal, contact the closest Air Liquide Canada location.

**HANDLING PROCEDURES AND EQUIPMENT:** USE ONLY IN WELL-VENTILATED AREAS.

Valve protection caps must remain in place unless container is secured with valve outlet piped to the point of use. Do not drag, slide or roll cylinders. Use a suitable hand truck for cylinder movement. Use a pressure reducing regulator when connecting to lower pressure piping or systems. Do not heat cylinder by any means to increase the discharge rate of product from the cylinder. Use a check valve or trap in the discharge line to prevent hazardous back flow into the cylinder. Do not tamper with (valve) safety device. Close valve after each use and when empty.

**STORAGE REQUIREMENTS:** Protect cylinders from physical damage. Store in cool, dry, well-ventilated area of non combustible construction away from heavily trafficked areas and emergency exits. Do not allow the temperature where cylinders are stored to exceed 52°C. Cylinders must be stored upright and firmly secured to prevent falling or being knocked over. Full and empty cylinders should be segregated. Use a "first in - first out" inventory system to prevent full cylinders being stored for excessive periods of time.

**TDG CLASSIFICATION:** 2.2

**WHMIS CLASSIFICATION:** A

**SPECIAL SHIPPING INFORMATION:** Always secure cylinders in an upright position before transporting them. NEVER transport cylinders in trunks of vehicles, enclosed vans, truck cabs or in passenger compartments. Transport cylinders secured in open flatbed or in open pick-up type vehicles.

MSDS for: Sulfur Hexafluoride / FaxBack Doc. # : 1140

<b>FIRST AID MEASURES</b>
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**SPECIFIC FIRST AID PROCEDURES:** PROMPT MEDICAL ATTENTION IS MANDATORY IN ALL CASES OF OVEREXPOSURE TO SULFUR HEXAFLUORIDE. RESCUE PERSONNEL SHOULD BE EQUIPPED WITH SELF-CONTAINED BREATHING APPARATUS.

**INHALATION:** Conscious persons should be assisted to an uncontaminated area and inhale fresh air. Quick removal from the contaminated area is most important.

Unconscious persons should be moved to an uncontaminated area, given assisted resuscitation and supplemental oxygen. Further treatment should be symptomatic and supportive.

**EYE CONTACT:** Flush contaminated eye(s) with copious quantities of water. Part eyelids to assure complete flushing. Continue for a minimum of 15 minutes.

**SKIN CONTACT:** Frostbite: FLUSH AFFECTED AREAS WITH LUKEWARM WATER. DO NOT USE HOT WATER. A physician should see the patient promptly if the cryogenic "burn" has resulted in blistering of the dermal surface or deep tissue freezing.

MSDS for: Sulfur Hexafluoride / FaxBack Doc. # : 1140

<b>PREPARATION INFORMATION</b>
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**PREPARED BY:** Safety Department

**DATE PREPARED:** 09/01/88

**LAST REVISION DATE:** 03/29/2004

**FOR INFORMATION OR MSDS, CONTACT YOUR LOCAL A.L.C. OFFICE OR DISTRIBUTOR.**

**MAIN ALC SALES LOCATIONS:**

<b>Newfoundland</b>	St.John's	Tel : 709 758-2765	Fax : 709 758-2800
<b>Nova Scotia</b>	Dartmouth	Tel : 902 468-5152	Fax : 902 468-5782
<b>New Brunswick</b>	Moncton	Tel : 506 857-3280	Fax : 506 857-9734
<b>New Brunswick</b>	Saint John	Tel : 506 634-8960	Fax : 506-646-1021
<b>Quebec</b>	Vanier	Tel : 418 683-1917	Fax : 418 683-7088
<b>Montreal</b>	Anjou	Tel : 514 356-7600	Fax : 514 351-0531
<b>Toronto</b>	Bramalea	Tel : 905 793-2000	Fax : 905 793-9257
<b>Eastern Ontario</b>	Oshawa	Tel : 905 576-1860	Fax : 905 571-3779
<b>Lake Ontario</b>	Burlington	Tel : 905 335-4877	Fax : 905 335-0301
<b>South West Ontario</b>	London	Tel : 519 455-3990	Fax : 519 455-3828
<b>Northern Ontario</b>	Sudbury	Tel : 705 674-7777	Fax : 705 674-0517
<b>Manitoba &amp; N.W. Ont.</b>	Winnipeg	Tel : 204 989-9353	Fax : 204 779-1047
<b>Saskatchewan</b>	Saskatoon	Tel : 306 933-2722	Fax : 306 931-6641
<b>Calgary</b>	Calgary	Tel : 403 777-4700	Fax : 403 777-4727
<b>Edmonton</b>	Edmonton	Tel : 780 438-5600	Fax : 780 438-2801
<b>Vancouver</b>	Vancouver	Tel : 604 606-4300	Fax : 604 606-4246
<b>Vancouver Island</b>	Nanaimo	Tel : 250 758-1761	Fax : 250 758-1911
<b>Okanagan</b>	Kelowna	Tel : 250 769-4222	Fax : 250 769-7224

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