

SAFETY DATA SHEET (SDS)

GHS and OSHA 29 CFR §1910.1200 (eCFR) compliant

UN1080



Revision: 0
ISSUE DATE: May 22, 2015

Sulfur Hexafluoride

Sulfur Fluoride SF₆, Sulfur Fluoride, Sulfur Hexafluoride SF₆, Sulfur Hexafluoride, Liquefied Compressed Gas

SF₆

Sulfur Hexafluoride

STOODY INDUSTRIAL AND WELDING SUPPLY, INC.

3316 National Ave., San Diego, Ca. 92113

Phone: 619-234-6750

WWW.STOODYIND.COM

PHONE NUMBERS

Product Information: 619-234-6750

24-hour Emergency Response
Professional Emergency Resource Services
800-633-8253

MILITARY EMERGENCY RESPONSE
800-851-8061

NSN

6830-00-985-7283

6830-01-454-9231

SUPPLIER INFORMATION:

Safety and handling equipment, gas cylinders and refills, personal protection equipment, fire extinguishers, cylinder services, respirators, etc. are available at Stody Industrial and Welding Supply, Ind. Our main location is at 3316 National Avenue, (near the 32nd Street Naval Base) in San Diego California 92113. Call 1-619-234-6750 or visit our web site, stodyind.com for more information.

DISCLAIMER: The information contained herein is accurate to the best of our knowledge. Stody Industry and Welding Supply Inc., does not assume any responsibility or liability for user's reliance or consequences of reliance on the information provided in this SDS. **Stody industrial and Welding Supply, Inc. makes no warranty or guarantee of any kind, expressed or implied, concerning the safe use of this material in your process or in combination with other substances.**

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Sulfur Hexafluoride, Liquefied Compressed Gas

1 IDENTIFICATION

- 1(a) **Product identifier used on label:**
Sulfur Hexafluoride
- 1(b) **Other means of identification:** SF₆, Sulfur Fluoride, Sulfur Hexafluoride SF₆, Sulfur Hexafluoride, Liquefied Compressed Gas
- 1(c) **Recommended use of the chemical and restrictions on use:**
Use; Industrial, it is used as a dielectric fluid for electronic equipment; it is also used as a refrigerant
Restrictions on use; Sulfur Hexafluoride is recognized as a greenhouse gas by the Kyoto Protocol
- 1(d) **Name, address, and telephone number of the chemical manufacturer, importer, or other responsible party**
Responsible Party: STOODY INDUSTRIAL AND WELDING SUPPLY, INC
3316 National Avenue
San Diego, CA 92113
619-234-6750
- 1(e) **Emergency phone number**
Professional Emergency Resource Services: 800-633-8253
Military Emergency Resource: 800-851-8061

2 HAZARD(S) IDENTIFICATION

- 2(a) **Classification of chemical in accordance with paragraph (d) of §1910.1200**
Nonflammable Gas
- 2(b) **Signal word, hazard statement(s), symbol(s) and precautionary statement(s) in accordance with paragraph (f) of §1910.1200**

Signal Word	Hazard Statement(s)	Symbol(s)	Precautionary Statements
Warning	May displace oxygen and cause rapid suffocation. (H280) Contains Gases under Pressure; may explode if heated.	 Liquefied Gas	(P410 + P403) Protect from sunlight. Store in a well-ventilated place.

- 2(c) **Describe any hazard not otherwise classified that have been identified during the classification process**
Contains gas under pressure; may explode if heated. Large amount of potential energy resulting from compression of the gas makes the cylinder a potential rocket or fragmentation bomb.
The gas is heavier than air and may accumulate in low ceiling spaces causing deficiency of oxygen.
- 2(d) **Where an ingredient with unknown acute toxicity is used in a mixture at a concentration = 1% and the mixture is not classified based on testing of the mixture as a whole, a statement that X% of the mixture consist of ingredient(s) of unknown acute toxicity is required.**
Sulfur Hexafluoride CAS No. 2551-62-4, consists of 0% of unknown acute toxicity.

3 COMPOSITION / INFORMATION ON INGREDIENTS

- 3(a) **Chemical name;** Sulfur Hexafluoride
- 3(b) **Common name;** Sulfur Hexafluoride SF₆, Sulfur Fluoride
- 3(c) **CAS number and other unique identifiers;**
- | CAS Number | Percent | Other unique identifiers |
|------------|---------|-------------------------------------|
| 2551-62-4 | 100% | No applicable information available |
- 3(d) **Impurities and stabilizing additives which are themselves classified and which contribute to the classification of the substance.**
Sulfur Hexafluoride may contain highly toxic sulfur pentafluoride as an impurity.

4 FIRST-AID MEASURES

- 4(a) **Description of necessary measures, subdivided according to the different routes of exposure, i.e., inhalation, skin and eye contact, and ingestion:**

ROUTES OF EXPOSURE (UNDER NORMAL CONDITIONS) (yes or no)

INHALATION: Yes	SKIN: Yes	EYE CONTACT: Yes	INGESTION: No
Short Term Effects: Asphyxiation (Oxygen deficiency) Long Term Effects: None known.	Short Term Effects: Rapid evaporation of the liquid may cause frostbite. Long Term Effects: None known.	Short Term Effects: Liquid may cause frostbite. Long Term Effects: (frostbite) Possible cornea damage.	Short Term Effects: Not classified as toxic by ingestion. Long Term Effects: None known

Symptoms of oxygen deficiency include respiratory difficulty, ringing in ears, headache, dizziness, indigestion, nausea, and possible death.

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4 FIRST-AID MEASURES (4(a) continued from page 1)

IF UNCONSCIOUS PLACE IN RECOVERY POSITION AND SEEK MEDICAL ADVICE. NEVER GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON.

Inhalation: Immediately remove to fresh air. Keep person calm. If not breathing, give artificial respiration. If breathing is difficult, a qualified operator may give oxygen. If symptoms persist, call a physician. Do not give epinephrine*.

Skin contact: Take off all contaminated clothing, not stuck to skin, immediately. Flush area with luke warm water. If frostbite has occurred, DO NOT remove clothes, call a physician.

Eye contact: Hold eyelids apart and flush eyes with cool water for 15 minutes and obtain immediate medical attention.

Ingestion: Unlikely route of exposure.

* Because of possible disturbances of cardiac rhythm, catecholamine drugs, such as epinephrine (adrenaline), should be used with special caution in situations of emergency life support.

5 FIRE-FIGHTING MEASURES

5(a) Suitable (and unsuitable) extinguishing media

All known extinguishants can be used. Use extinguishing media appropriate for surrounding fire. Combat fire from a sheltered position. Keep cylinder cool by spraying with water.

5(b) Specific hazards arising from the chemical (e.g., nature of any hazardous combustion products).

- Pressure in a container can build up due to heat and it may violently rupture if pressure relief devices should fail to function.
- Gives off irritating or toxic fumes (or gases) in a fire
- Self-contained breathing apparatus (SCBA) with full face piece and protective clothing is required if cylinders rupture or contents are released under fire conditions.
- See Para. 10(b) and 10(c)

Damaged cylinders should be handled only specialists.

6 ACCIDENTAL RELEASE MEASURES

6(a) Personal precautions, protective equipment, emergency procedures.

Stop leak if possible without personal risk. Turn leaking cylinder with the leak up to prevent escape of gas in liquid state.

Ventilate enclosed area or move leaking container to a well-ventilated area.

Keep unnecessary people away, isolate hazard area and deny entry. Stay upwind and keep out of low areas.

6(b) Method and materials for containment and cleaning up.

NEVER direct water jet on liquid. This chemical should be kept from entering the environment.

Wear chemical protection suit including self-contained breathing apparatus when entering area unless atmosphere is proved to be safe.

7 HANDLING AND STORAGE

Be aware of any signs of dizziness or fatigue; exposures to fatal concentrations of Sulfur Hexafluoride could occur without any significant warning symptoms.

HOW TO DETECT THIS SUBSTANCE (warning properties): There are no unusual warning properties associated with a release of Sulfur Hexafluoride. In terms of leak detection, fittings and joints can be painted with a soap solution to detect leaks, which will be indicated by a bubble formation.

7(b) Conditions for safe storage, including any incompatibilities.

Conditions for safe storage	Incompatibilities
<ol style="list-style-type: none"> 1. Store and use with adequate ventilation. 2. Cylinders should be stored upright with valve protection cap in place and firmly secured to prevent falling or being knocked over. 3. Protect cylinders from physical damage; do not drag, roll, slide or drop. 4. Full cylinders should be segregated from empty cylinders. 5. Do not allow storage area temperature to exceed 125°F (52°C). 6. Use a first-in, first-out inventory system to prevent full containers from being stored for long periods of time. 7. Use a suitable hand truck for cylinder movement. 8. Never attempt to lift a cylinder by its valve protection cap. 9. Keep cylinders and their valves free from oil and grease. 10. Never insert an object (e.g., wrench, screwdriver, pry bar, etc.) into valve cap openings. Doing so may damage valve, causing a leak to occur. 	<p>See Para. 10(b), 10(c) and 10(d)</p>

Specific requirements are listed in NFPA 50A. Cylinder storage locations should be well-protected, well-ventilated, dry, and separated from combustible and reducing materials. Cylinders should never knowingly be allowed to reach a temperature exceeding 125°F (52°C).

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8 EXPOSURE CONTROLS / PERSONAL PROTECTION

- 8(a) OSHA permissible exposure limit (PEL), American Conference of Governments Industrial Hygienists (ACGIH) Threshold Limits Value (TLV), and any other exposure limit used or recommended by the chemical manufacturer, importer, or employer preparing the safety data sheet, where available.**
 PEL Time-Weighted Average (TWA) = 1000 ppm, 6000 mg/m³; TLV TWA = 1000 ppm; National Institute of Occupational safety and Health (NIOSH) Recommended protection. Safety Exposure Limit (REL) TWA = 1000, ppm, 6000 mg/m³
- 8(b) Appropriate engineering controls.**
 Natural or mechanical air circulation is needed to maintain a safe working environment. Oxygen detectors should be used when asphyxiating gases may be released
- 8(c) Individual protection measures, such as personal protective equipment.**
 Wear cold insulating gloves / face shield / eye shoes are recommended when handling cylinders.

9 PHYSICAL and CHEMICAL PROPERTIES

a) Appearance (physical state, color, etc.)	Colorless gas
b) Odor	Odorless
c) Odor threshold	Not applicable
d) pH	Not applicable
e) Melting point/freezing point	-59.44° F (-50.8° C) @ 32.5 psia
f) Initial boiling point	Sublimes at -82.7° F (-63.7° C) @1 atm
g) Flash point	No applicable – does not flash
h) Evaporation rate	Not applicable
i) Flammability (solid, gas)	Nonflammable (gas)
j) Upper/lower flammability or explosive limits	Nonflammable (gas)
k) Vapor pressure	334.7 psia
l) Vapor density (Air = 1.0)	5.1 @ 1 atm, 69.98° F (21.1° C)
m) Relative density	No data available
n) Solubility(ies) Vol/Vol @ 77°F (25° C), water	0.0001
o) Partition coefficient: n-octanol/water	No data available
p) Auto-ignition temperature	Nonflammable (gas)
q) Decomposition temperature	No data available
r) Viscosity	No data available
s) Molecular Weight	146.05

10 STABILITY and REACTIVITY

- 10(a) Reactivity**
 This product is normally a stable, inert gas. Also see Para. 10(c)
- 10(b) Chemical stability**
 At temperatures greater than 400° (204° C) Sulfur Hexafluoride is only stable when contained aluminum, stainless steel, copper, brass, or silver. In other metals, in the presence of oxygen, slow composition producing thionyl fluoride compounds can be generated.
- 10(c) Possibility of hazardous reactions**
 Sulfur Hexafluoride can react violently in contact with dieseline
- 10(d) Conditions to avoid (e.g., static discharge, shock, or vibration)**
 Sulfur Hexafluoride may be partially decomposed if subjected to static discharge. Some of the breakdown products are corrosive and will be enhanced by the presence of moisture or at high temperatures. Also see Para. 10(a) and 10(b)
- 10(e) Incompatible materials**
 Dieseline, See Para. 10(c)
- 10(f) Hazardous decomposition products**
 The substance decomposes on heating above 500°C producing toxic and corrosive fumes including sulfur oxides, fluorine compounds.

11 TOXICOLOGICAL INFORMATION

- 11(a) Information on likely routes of exposure (inhalation, ingestion, skin and eye contact);**
 No known toxicological effects from this product in normal use.
- 11(b) Symptoms related to the physical, chemical and toxicological characteristics;**
 None known. Not classified as a human carcinogen.

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SIWS (wrs)

11 TOXICOLOGICAL INFORMATION (continued from page 3)

- 11(c) Delayed and immediate effects and also chronic effects from short- and long-term exposure;**
See 4(a).
- 11(d) Numerical measures of toxicity (such as acute toxicity estimates)**
No identifiable acute toxicity.
- 11(e) Whether the hazardous chemical is listed in the International Toxicology Program (NTP) Report on Carcinogenic (latest edition) or has been found to be a potential carcinogenic in the International Agency for Research on Cancer (IARC) Monographs (latest edition), or by OSHA.**
Chemical is not classified as a human carcinogenic.

12 ECOLOGICAL INFORMATION

- 12(a) Ecotoxicity (aquatic and terrestrial, where available)**
Sulfur Hexafluoride has no toxic affect on the ecosystem.
- 12(b) Persistence and degradability**
It is not persistent in the aquatic environment or in soil. It can be considered as not persistent in the environment.
- 12(c) Bioaccumulative potential**
Product has a low potential to bioaccumulate
- 12(d) Mobility in soil**
Exposure to sediments and soil is unlikely.
- 12(e) Other adverse effects (such as hazardous to the ozone layer)**
This product is not a Class I or Class II ozone depleting chemicals (40 CFR Part 82). This product is not listed as a marine pollutant by DOT (49 CFR Part 171).

13 DISPOSAL CONSIDERATIONS

- 13(a) Description of waste residue and information on their safe handling and method of disposal, including the disposal of any contaminated packaging.**
Recover, reclaim or recycle subject to U.S. Environmental Protection Agency Clean Air Act Regulations Section 608 in 40 CFR Part 82 regarding refrigerant recycling.

Do not attempt to dispose of cylinder or its contents. Cylinder(s) and unused contents should be returned to supplier for disposal in accordance with appropriate Federal, State, local regulation.

14 TRANSPORTATION INFORMATION

- 14(a) UN number:** UN1080
- 14(b) UN proper shipping name:** Sulfur Hexafluoride
- 14(c) Transportation hazard class(es):** 2.2
- 14(d) Packing group, if applicable:** Not applicable
- 14(e) Environmental hazards (e.g.,) Marine pollutant (yes/No):** No
- 14(f) Transport in bulk (according to Annex II of MARPOL 73/78 and IBC Code):** Does not apply
- 14(g) Special precautions which a user needs to be aware of, or needs to comply with, in connection with transport or conveyance either within or outside of their premises:**
Cylinders should be properly separated from non-compatible gas cylinders and transported in a upright, secure position, in a well ventilated vehicle. The transportation of compressed gas cylinders in automobiles or in closed-body vehicles can present serious safety hazards and should be discouraged.
Environmental Concerns: Sulfur Hexafluoride is a greenhouse gas which may contribute to global warming.

15 REGULATORY INFORMATION

- 15(a) Safety, health and environmental regulations specific for the product in question.**
User(s) of this product are solely responsible for regulatory compliance on a federal, state, and local level.
U.S. FEDERAL REGULATIONS:
EPA - ENVIRONMENTAL PROTECTION AGENCY
40 CFR PART 68, Risk Management for Chemical Accidental Release, does not list Sulfur Hexafluoride as a regulated substance.

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15 REGULATORY INFORMATION (continued from page 4)

CERCLA: Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (40 CFR Parts 117 and 302):
Reportable Quantity (RQ): 5000 pounds

SARA: Superfund Amendment and Reauthorization Act

SECTION 302/304: Requires emergency planning on threshold planning quantities (TPQ) and release reporting based on reportable quantities (RQ) of EPA's extremely hazardous substances (40 CFR Part 355).
Extremely Hazardous Substances: None
Threshold Planning Quantity (TPQ): None

SECTIONS 311/312: Require submission of (material) safety data sheets (SDSs) and chemical inventory reporting with identification of EPA defined hazard classes (40 CFR Part 370). The hazard classes for this product are:

ACUTE HEALTH (Immediate): Yes	CHRONIC HEALTH (Delayed): No
PRESSURE: Yes	REACTIVITY: No
FIRE: No	

TSCA: Toxic Substance Control Act: On the inventory, or in compliance with the inventory.

OSHA - OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION:

29 CFR 1910.119, Appendix A, does not list this product as a highly hazardous chemical.

Sulfur Hexafluoride is not listed as a Class II ozone depleting chemical (40 CFR Part 82).

Shipment of compressed gas cylinders which have not been filled with the owner's consent is a violation of Federal law (49 CFR Part 173.301 (b)).

FDA – FOOD AND DRUG ADMINISTRATION: None

CALIFORNIA PROPOSITION 65 (Safe Drinking Water and Toxic Enforcement Act of 1986): Sulfur Hexafluoride, not listed.

CANADIAN REGULATIONS:

WHIMS Classification; A - Compressed Gas (critical temperature = 45.55° C)

Disclosure at 1.0% according to the ingredients list

Note: "The Canadian supplier / Canadian importer has the legal responsibility to assess their products against the criteria set out in the Controlled Products Regulations."

U.S. STATE REGULATORY INFORMATION: Sulfur Hexafluoride is covered under the following specific State regulations:

Alaska - Designated Toxic and Hazardous

Substances: Sulfur Hexafluoride.

California - Permissible Exposure Limits

for Chemical Contaminants: Sulfur Hexafluoride.

Florida - Substance List: Sulfur Hexafluoride.

Illinois - Toxic Substance List: Sulfur Hexafluoride.

Kansas - Section 302/313 List: No

Massachusetts - Substance List:

Hexafluoride. Sulfur

Michigan Critical Register List: No.

Minnesota - List of Hazardous Substances: Sulfur Hexafluoride.

Missouri - Employer Information/Toxic

Substance List: Sulfur Hexafluoride.

New Jersey - Right to Know Hazardous

Substance List: Sulfur Hexafluoride.

North Dakota - List of Hazardous Chemicals, Reportable Quantities:

No.

Pennsylvania - Hazardous Substance List:

No.

Rhode Island - Hazardous Substance List:

Sulfur Hexafluoride.

Texas - Hazardous Substance List: Sulfur

Hexafluoride.

West Virginia - Hazardous Substance List:

Sulfur Hexafluoride.

Wisconsin - Toxic and Hazardous Substances: Sulfur Hexafluoride.

16 OTHER INFORMATION, Including date of preparation or last revision

16(a) OTHER INFORMATION:

Never rely on the color of the cylinder for identification. (Colors may vary with suppliers.)

NFPA RATINGS:

HEALTH-Blue: = 1 FLAMMABILITY-Red: = 0 INSTABILITY-Yellow: = 1 SPECIAL HAZARDS*-White: =

LEGEND: 0-4 – 0-least hazardous; 4-most hazardous

**OX (Oxidizers), W (Water reactives), SA (Simple Asphyxiants), (blank if no special hazard)*

STANDARD VALVE CONNECTIONS FOR U.S. (AND CANADA):

THREADED: CGA 590 (LH)

PIN-INDEXED YOKE: Not applicable

ULTRA HIGH INTEGRITY: Not applicable

Use the proper CGA connections, DO NOT USE ADAPTERS

16(a) OTHER INFORMATION:

Sulfur Hexafluoride is a greenhouse gas which may contribute to global warming.

SUPPLIER INFORMATION:

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Information Sources: Data is compiled from a variety of sources, including publicly available documents, internal data and other sources.

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