

MATERIAL SAFETY DATA SHEET

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

MATHESON TRI-GAS, INC.
150 Allen Road Suite 302
Basking Ridge, New Jersey 07920
Information: 1-800-416-2505

Emergency Contact:
CHEMTREC 1-800-424-9300
Calls Originating Outside the US:
703-527-3887 (Collect Calls Accepted)

SUBSTANCE: SDS® 2 SILICON TETRAFLUORIDE

TRADE NAMES/SYNONYMS:

UN 1859; STCC 4904280; SDS(TM) GAS SOURCE (SUB-ATM. PRESSURE SILICON TETRAFLUORIDE); SDS SILICON TETRAFLUORIDE; SDS(TM) GAS SOURCE (SUB-ATM. PRESSURE SILICON); MATNE523

CHEMICAL FAMILY: halides, silicon

PRODUCT USE: For Use with Gas: Sulfur Hexafluoride (SF6).

CREATION DATE: Mar 31 1998

REVISION DATE: Mar 06 2009

2. COMPOSITION, INFORMATION ON INGREDIENTS

COMPONENT: SILICON TETRAFLUORIDE

CAS NUMBER: 7783-61-1

PERCENTAGE: >99

OTHER CONTAMINANTS:

This gas is packaged in a SDS®(Safe Delivery Source Technology Cylinder). This cylinder contains an adsorbent material (carbon) that allows gas contents to be at sub-atmospheric pressures. There is no possibility of contact or exposure to the adsorbent material and so this MSDS addresses only the hazards of the gas.

Maximum Impurities less than or equal to 1%.

None of the trace impurities of this gas contribute significantly to the hazards associated with the product. All hazard information pertinent to this product has been provided in this Material Safety Data Sheet, per the requirements of the Federal Occupational Safety and Health Administration Standard (29 CFR 1910.1200), U.S. State equivalent standards and Canadian Workplace Hazardous Materials Identification System Standards (CPR 4).

3. HAZARDS IDENTIFICATION

NFPA RATINGS (SCALE 0-4): HEALTH=3 FIRE=0 REACTIVITY=2



EMERGENCY OVERVIEW:

COLOR: colorless

PHYSICAL FORM: gas

ODOR: irritating odor

MAJOR HEALTH HAZARDS: respiratory tract burns, skin burns, eye burns, mucous membrane burns

PHYSICAL HAZARDS: Containers may rupture or explode if exposed to heat. Reacts violently with water, releasing toxic gases.

POTENTIAL HEALTH EFFECTS:

INHALATION:

SHORT TERM EXPOSURE: burns

LONG TERM EXPOSURE: same as effects reported in short term exposure

SKIN CONTACT:

SHORT TERM EXPOSURE: burns

LONG TERM EXPOSURE: same as effects reported in short term exposure

EYE CONTACT:

SHORT TERM EXPOSURE: burns

LONG TERM EXPOSURE: same as effects reported in short term exposure

INGESTION:

SHORT TERM EXPOSURE: ingestion of harmful amounts is unlikely

LONG TERM EXPOSURE: ingestion of harmful amounts is unlikely

4. FIRST AID MEASURES

INHALATION: If adverse effects occur, remove to uncontaminated area. Give artificial respiration if not breathing. If breathing is difficult, oxygen should be administered by qualified personnel. Get immediate medical attention.

SKIN CONTACT: Wash skin with soap and water for at least 15 minutes while removing contaminated clothing and shoes. Get immediate medical attention. Thoroughly clean and dry contaminated clothing before reuse. Destroy contaminated shoes.

EYE CONTACT: Immediately flush eyes with plenty of water for at least 15 minutes. Then get immediate medical attention.

INGESTION: If a large amount is swallowed, get medical attention.

5. FIRE FIGHTING MEASURES

FIRE AND EXPLOSION HAZARDS: Negligible fire hazard.

EXTINGUISHING MEDIA: carbon dioxide, regular dry chemical

Large fires: Use regular foam or flood with fine water spray.

FIRE FIGHTING: Move container from fire area if it can be done without risk. Cool containers with water spray until well after the fire is out. Stay away from the ends of tanks. Keep unnecessary people away, isolate hazard area and deny entry.

FIRE FIGHTING PROTECTIVE EQUIPMENT: Wear full protective fire fighting gear including self contained breathing apparatus (SCBA) for protection against possible exposure.

FLASH POINT: not flammable

LOWER FLAMMABLE LIMIT: Not available

UPPER FLAMMABLE LIMIT: Not available

AUTOIGNITION: Not available

6. ACCIDENTAL RELEASE MEASURES

OCCUPATIONAL RELEASE:

Stop leak if possible without personal risk. Reduce vapors with water spray. Do not get water directly on material. Keep unnecessary people away, isolate hazard area and deny entry. Stay upwind and keep out of low areas. Ventilate closed spaces before entering. Evacuation radius: 150 feet.

7. HANDLING AND STORAGE

STORAGE: Store and handle in accordance with all current regulations and standards. Store below 52 C. Store in a cool, dry place. Store in a well-ventilated area. Protect from sunlight. Subject to storage regulations: U.S. OSHA 29 CFR 1910.101. See original container for storage recommendations. Keep separated from incompatible substances.

HANDLING: Do not breathe gas, fumes, vapor, or spray. When using, do not eat, drink or smoke.

8. EXPOSURE CONTROLS, PERSONAL PROTECTION

EXPOSURE LIMITS:

SILICON TETRAFLUORIDE:

INORGANIC FLUORIDES (as F):

2.5 mg/m³ OSHA TWA

2.5 mg/m³ ACGIH TWA

2.5 mg/m³ NIOSH recommended TWA 10 hour(s) (solid fluorides)

VENTILATION: Provide local exhaust or process enclosure ventilation system. Ensure compliance with applicable exposure limits.

EYE PROTECTION: Wear splash resistant safety goggles with a faceshield. Provide an emergency eye wash fountain and quick drench shower in the immediate work area.

CLOTHING: Wear appropriate chemical resistant clothing.

GLOVES: Wear appropriate chemical resistant gloves.

RESPIRATOR: No respirator is required under normal conditions of use. Under conditions of frequent use or heavy exposure, respiratory protection may be needed.

For Unknown Concentrations or Immediately Dangerous to Life or Health -

Any supplied-air respirator with a full facepiece that is operated in a pressure-demand or other positive-pressure mode in combination with an auxiliary self-contained breathing apparatus operated in pressure-demand or other positive-pressure mode.

Any self-contained breathing apparatus that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode.

9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE: gas

COLOR: colorless

ODOR: irritating odor

MOLECULAR WEIGHT: 104.09

MOLECULAR FORMULA: F4-SI

BOILING POINT: -123 F (-86 C)

FREEZING POINT: -130 F (-90 C)

DECOMPOSITION POINT: Not available

VAPOR PRESSURE: Not available

VAPOR DENSITY (air=1): 3.63

SPECIFIC GRAVITY (water=1): 1.7 @ -95 C

WATER SOLUBILITY: decomposes

PH: acidic in solution

VOLATILITY: Not applicable

ODOR THRESHOLD: Not available

EVAPORATION RATE: Not applicable

VISCOSITY: Not available

COEFFICIENT OF WATER/OIL DISTRIBUTION: Not applicable

SOLVENT SOLUBILITY:

Soluble: absolute alcohol, hydrofluoric acid

Insoluble: ether

10. STABILITY AND REACTIVITY

REACTIVITY: Reacts violently with water, releasing toxic gases. Releases corrosive gases.

CONDITIONS TO AVOID: Minimize contact with material. Containers may rupture or explode if exposed to heat.

INCOMPATIBILITIES: metal salts, metals

HAZARDOUS DECOMPOSITION:

Decomposition products on contact with water or moisture: hydrogen fluoride

Thermal decomposition products: acid halides

POLYMERIZATION: Will not polymerize.

11. TOXICOLOGICAL INFORMATION

SDS® 2 SILICON TETRAFLUORIDE:

TARGET ORGANS: respiratory system, skin, eyes, skeletal system, kidneys

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: central nervous system disorders, bone, joint or tooth disorders, eye disorders, kidney disorders, respiratory disorders, skin disorders and allergies

SILICON TETRAFLUORIDE:

TOXICITY DATA: 2272 ppm inhalation-rat LC50

CARCINOGEN STATUS: ACGIH: A4 -Not Classifiable as a Human Carcinogen (Fluorides)

LOCAL EFFECTS:

Corrosive: inhalation, skin, eye, ingestion

ACUTE TOXICITY LEVEL:

Moderately Toxic: inhalation

TARGET ORGANS: respiratory system, skin, eyes, skeletal system, teeth

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: central nervous system disorders, bone, joint or tooth disorders, eye disorders, kidney disorders, respiratory disorders, skin disorders and allergies

ADDITIONAL DATA: May cross the placenta. May be excreted in breast milk.

12. ECOLOGICAL INFORMATION

ECOTOXICITY DATA:

FISH TOXICITY: No data available.

INVERTEBRATE TOXICITY: No data available.

ALGAL TOXICITY: No data available.

FATE AND TRANSPORT:

BIODEGRADATION: No data available.

ABIOTIC DEGRADATION: Will decompose on contact with water to form hydrogen fluoride.

13. DISPOSAL CONSIDERATIONS

Dispose in accordance with all applicable regulations. Subject to disposal regulations: U.S. EPA 40 CFR 262. Hazardous Waste Number(s): D003.

14. TRANSPORT INFORMATION

U.S. DOT 49 CFR 172.101:

PROPER SHIPPING NAME: Silicon tetrafluoride

ID NUMBER: UN1859

HAZARD CLASS OR DIVISION: 2.3

LABELING REQUIREMENTS: 2.3; 8

QUANTITY LIMITATIONS:

PASSENGER AIRCRAFT OR RAILCAR: Forbidden

CARGO AIRCRAFT ONLY: Forbidden

ADDITIONAL SHIPPING DESCRIPTION: Toxic-Inhalation Hazard Zone B



CANADIAN TRANSPORTATION OF DANGEROUS GOODS:

SHIPPING NAME: Silicon tetrafluoride, compressed

UN NUMBER: UN1859

CLASS: 2.3; 8

15. REGULATORY INFORMATION

U.S. REGULATIONS:

CERCLA SECTIONS 102a/103 HAZARDOUS SUBSTANCES (40 CFR 302.4): Not regulated.

SARA TITLE III SECTION 302 EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355 Subpart B): Not regulated.

SARA TITLE III SECTION 304 EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355 Subpart C): Not regulated.

SARA TITLE III SARA SECTIONS 311/312 HAZARDOUS CATEGORIES (40 CFR 370 Subparts B and C):

ACUTE: Yes

CHRONIC: Yes

FIRE: No

REACTIVE: Yes
SUDDEN RELEASE: Yes

SARA TITLE III SECTION 313 (40 CFR 372.65): Not regulated.

OSHA PROCESS SAFETY (29 CFR 1910.119): Not regulated.

STATE REGULATIONS:

California Proposition 65: Not regulated.

CANADIAN REGULATIONS:

WHMIS CLASSIFICATION: Not determined.

NATIONAL INVENTORY STATUS:

U.S. INVENTORY (TSCA): Listed on inventory.

TSCA 12(b) EXPORT NOTIFICATION: Not listed.

CANADA INVENTORY (DSL/NDSL): Not determined.

16. OTHER INFORMATION

MSDS SUMMARY OF CHANGES

11. TOXICOLOGICAL INFORMATION

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