

# Praxair Material Safety Data Sheet

## 1. Chemical Product and Company Identification

<b>Product Name:</b> Antimony compounds, inorganic, solid, n.o.s. (Antimony Trifluoride) (MSDS No. P-19-6386)	<b>Trade Names:</b> Not applicable.
<b>Chemical Name:</b> Antimony Trifluoride	<b>Synonyms:</b> Antimony (III) Fluoride, Trifluoro-stibine
<b>Chemical Family:</b> Metal Fluoride	<b>Product Grades:</b> None assigned.
<b>Telephone:</b> <b>Emergencies:</b> 1-800-645-4633* <b>CHEMTREC:</b> 1-800-424-9300* <b>Routine:</b> 1-800-PRAXAIR	<b>Company Name:</b> Praxair, Inc. 39 Old Ridgebury Road Danbury, CT 06810-5113

*\*Call emergency numbers 24 hours a day only for spills, leaks, fire, exposure, or accidents involving this product. For routine information, contact your supplier, Praxair sales representative, or call 1-800-PRAXAIR (1-800-772-9247).*

## 2. Hazards Identification



### EMERGENCY OVERVIEW



**DANGER! Corrosive, toxic solid.**  
**May be fatal if inhaled.**

**Harmful if ingested or absorbed through the skin.**  
**May damage nerves, kidneys, and reproductive systems.**  
**May burn the skin, eyes, respiratory tract, and mucous membranes.**  
**May cause dizziness and drowsiness.**  
**Self-contained breathing apparatus and protective clothing**  
**must be worn by rescue workers.**

**Under ambient conditions, this is an off-white powder.**

**OSHA REGULATORY STATUS:** This material is considered hazardous by the OSHA Hazard Communications Standard (29 CFR 1910.1200).

### POTENTIAL HEALTH EFFECTS:

#### Effects of a Single (Acute) Overexposure

**Inhalation.** May be fatal if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract. Inhalation may result in spasm, inflammation, and edema of the larynx and bronchi, chemical pneumonitis, and pulmonary edema. Symptoms of exposure may include burning sensation, coughing, wheezing, laryngitis, shortness of breath, headache, nausea, and vomiting.

**Skin Contact.** Solid may burn the skin. With prolonged or repeated exposure, harmful amounts may be absorbed through the skin.

**Swallowing.** Harmful if swallowed.

**Eye Contact.** Dust may cause eye burns.

**Effects of Repeated (Chronic) Overexposure.** Repeated or prolonged exposure of the skin may cause dermatitis (inflammation of the skin).

**Other Effects of Overexposure.** None known.

**Medical Conditions Aggravated by Overexposure.** The skin irritating properties of this material may aggravate an existing dermatitis. Respiratory irritation may aggravate an existing asthma or other upper respiratory or pulmonary disease.

**CARCINOGENICITY:** This material is not listed by NTP, OSHA, or IARC.

**POTENTIAL ENVIRONMENTAL EFFECTS:** None known. For further information, see section 12, Ecological Information.

### 3. Composition/Information on Ingredients

See section 16 for important information about mixtures.

COMPONENT	CAS NUMBER	CONCENTRATION
Antimony Trifluoride	7783-56-4	>99%*

*\*The symbol > means "greater than."*

### 4. First Aid Measures

**INHALATION:** Immediately remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, qualified personnel may give oxygen. Get immediate medical attention, even if no symptoms are present. Call a physician.

**SKIN CONTACT:** In case of skin contact, flush with copious amounts of water for at least 15 minutes while removing contaminated clothing and shoes. Discard contaminated clothing, shoes, and gloves. Call a physician.

**SWALLOWING:** Keep the victim calm, and get immediate medical aid. If conscious, the victim may be given water. Do not induce vomiting unless directed to do so by medical personnel.

**EYE CONTACT:** Immediately flush eyes thoroughly with water for at least 15 minutes. Hold the eyelids open and away from the eyeballs to ensure that all surfaces are flushed thoroughly. See a physician, preferably an ophthalmologist, immediately.

Contact the Poison Control Center in your area for additional information on patient management and follow-up.

### 5. Fire Fighting Measures

**FLAMMABLE PROPERTIES:** Unknown.

**SUITABLE EXTINGUISHING MEDIA:** Use water spray, CO<sub>2</sub>, dry chemical, or the appropriate foam.

**PRODUCTS OF COMBUSTION:** Unknown. See section 10 for products of decomposition.

**PROTECTION OF FIREFIGHTERS: DANGER! Corrosive, toxic solid.** Evacuate all personnel from danger area. Do not approach area without self-contained breathing apparatus and protective clothing. Immediately deluge containers with water spray from maximum distance until cool; then move them away from fire area if without risk. On-site fire brigades must comply with OSHA 29 CFR 1910.156.

**Specific Physical and Chemical Hazards.** If involved in a fire, this product may emit irritating and potentially toxic fumes. Fumes and vapors may spread from leak. Vapors are heavier than air and may collect in low spots.

**Protective Equipment and Precautions for Firefighters.** Firefighters should wear self-contained breathing apparatus and full fire-fighting turnout gear.

## 6. Accidental Release Measures

### STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED:

**DANGER! Corrosive, toxic solid.**

**Personal Precautions.** Avoid breathing dust. Immediately evacuate all personnel from danger area. Do not approach area without self-contained breathing apparatus and protective clothing. Ventilate area or move container to a well-ventilated area and wash spill site after material pick-up is complete.

**Environmental Precautions.** Prevent waste from contaminating the surrounding environment. Keep personnel away. Discard any product, residue, disposable container, or liner in an environmentally acceptable manner, in full compliance with federal, state, and local regulations. If necessary, call your local supplier for assistance.

## 7. Handling and Storage

**PRECAUTIONS TO BE TAKEN IN HANDLING:** May burn skin, eyes, and respiratory tract. Use only with adequate ventilation or respiratory protection. Do not get dust in eyes, on skin, or on clothing. Keep away from oxidizing agents. Use only in a closed system under a dry, inert atmosphere. Have safety showers and eyewash fountains immediately available. After working with this material, wash face and hands thoroughly with soap and water before eating, drinking, smoking, applying cosmetics, or using the toilet. Protect containers from damage. For other precautions in using this product, see section 16.

**PRECAUTIONS TO BE TAKEN IN STORAGE:** Store and use with adequate ventilation. Store in a cool, dry place away from oxidizers. Keep storage containers closed. Store only where temperature will not exceed 125°F (52°C). Store full and empty containers separately. Use a first-in, first-out inventory system to prevent storing full containers for long periods.

## 8. Exposure Controls/Personal Protection

COMPONENT	OSHA PEL	ACGIH TLV-TWA (2008)
Antimony Trifluoride	0.5 mg/m <sup>3</sup> *	0.5 mg/m <sup>3</sup> *
*Antimony and compounds, as Sb		

TLV-TWAs should be used as a guide in the control of health hazards and not as fine lines between safe and dangerous concentrations.

IDLH = 50 mg/m<sup>3</sup> (Antimony)

### ENGINEERING CONTROLS:

**Local Exhaust.** See Special.

**Mechanical (General).** See Special.

**Special.** Use only in a closed system. This material is moisture-sensitive. It should be maintained under a dry, inert atmosphere and used in an enclosed device such as a glove box.

**Other.** See Special.

#### PERSONAL PROTECTIVE EQUIPMENT:

**Skin Protection.** Wear work gloves when handling containers; heavy rubber gloves where contact with product may occur. Metatarsal shoes for container handling. Protective clothing where needed. Select in accordance with OSHA 29 CFR 1910.132 and 1910.133.

**Eye/Face Protection.** Wear safety glasses when handling containers. Select eye protection in accordance with OSHA 29 CFR 1910.133.

**Respiratory Protection.** A respiratory protection program that meet OSHA 29 CFR 1910.134, ANSI Z88.2, or MSHA 30 CFR 72.710 (where applicable) requirements must be followed whenever workplace conditions warrant respirator use. Use an air-supplied or air-purifying cartridge if the action level is exceeded. Ensure the respirator has the appropriate protection factor for the exposure level. If cartridge type respirators are used, the cartridge must be appropriate for the chemical exposure (e.g., an organic vapor cartridge). For emergencies or instances with unknown exposure levels, use a self-contained breathing apparatus.

### 9. Physical and Chemical Properties

<b>APPEARANCE:</b>	Off-white solid
<b>ODOR:</b>	Not available.
<b>ODOR THRESHOLD:</b>	Not available.
<b>PHYSICAL STATE:</b>	Solid at normal temperature and pressure
<b>pH:</b>	Not applicable.
<b>MELTING POINT</b> at 1 atm:	558°F (292°C)
<b>SUBLIMATION POINT</b> at 1 atm:	606°F (319°C)
<b>FLASH POINT</b> (test method):	Not available.
<b>EVAPORATION RATE</b> (Butyl Acetate = 1):	Not applicable.
<b>FLAMMABILITY:</b>	Not available.
<b>FLAMMABLE LIMITS IN AIR</b> , % by volume:	<b>LOWER:</b> Not available. <b>UPPER:</b> Not available.
<b>VAPOR PRESSURE</b> at 68°F (20°C):	Not available.
<b>VAPOR DENSITY</b> at 70°F (21.1°C) and 1 atm:	Not available.
<b>DENSITY</b> at 68°F (20°C):	4.38 g/cm <sup>3</sup>
<b>SPECIFIC GRAVITY</b> (Air =1):	Not available.
<b>SOLUBILITY IN WATER</b> 68°F (20°C):	Reactive
<b>PARTITION COEFFICIENT: n-octanol/water:</b>	Not available.
<b>AUTOIGNITION TEMPERATURE:</b>	Not available.
<b>DECOMPOSITION TEMPERATURE:</b>	Not available.
<b>PERCENT VOLATILES BY VOLUME:</b>	Not available.
<b>MOLECULAR WEIGHT:</b>	178.75
<b>MOLECULAR FORMULA:</b>	SbF <sub>3</sub>

### 10. Stability and Reactivity

**CHEMICAL STABILITY:**  Unstable  Stable

**CONDITIONS TO AVOID:** Air, heat, and moisture

**INCOMPATIBLE MATERIALS:** Acids, oxidizing agents, perchloric acid

**HAZARDOUS DECOMPOSITION PRODUCTS:** Antimony oxide and Hydrogen fluoride.

**POSSIBILITY OF HAZARDOUS REACTIONS:**  May Occur  Will Not Occur

Reacts with heat and moisture produces Antimony oxide and Hydrogen fluoride.

### 11. Toxicological Information

**ACUTE DOSE EFFECTS:** LD<sub>50</sub>, oral, rat = 804 mg/kg

**STUDY RESULTS:** None known.

### 12. Ecological Information

**ECOTOXICITY:** No known effects.

**OTHER ADVERSE EFFECTS:** None known. This material does not contain any Class I or Class II ozone-depleting chemicals.

### 13. Disposal Considerations

**WASTE DISPOSAL METHOD:** Do not attempt to dispose of residual or unused quantities. Return cylinder to supplier.

### 14. Transport Information

**DOT/IMO SHIPPING NAME:** Antimony compounds, inorganic, solid, n.o.s. (Antimony Trifluoride)

HAZARD CLASS:	PACKING GROUP/Zone:	IDENTIFICATION NUMBER:	PRODUCT RQ:
6.1	III	UN1549	None

**SHIPPING LABEL(s):** TOXIC, CORROSIVE

**PLACARD (when required):** TOXIC, CORROSIVE

**MARINE POLLUTANTS:** This material is not listed as a marine pollutant by DOT."

### 15. Regulatory Information

The following selected regulatory requirements may apply to this product. Not all such requirements are identified. Users of this product are solely responsible for compliance with all applicable federal, state, and local regulations.

**U.S. FEDERAL REGULATIONS:**

EPA (ENVIRONMENTAL PROTECTION AGENCY)

CERCLA: COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION, AND LIABILITY ACT OF 1980 (40 CFR Parts 117 and 302):

**Reportable Quantity (RQ):** 1000 lbs (454.54 kg)

**SARA: SUPERFUND AMENDMENT AND REAUTHORIZATION ACT:**

**SECTIONS 302/304:** Require emergency planning based on Threshold Planning Quantity (TPQ) and release reporting based on Reportable Quantities (RQ) of Extremely Hazardous Substances (EHS) (40 CFR Part 355):

**TPQ:** None

**EHS RQ (40 CFR 355):** None

**SECTIONS 311/312:** Require submission of MSDSs and reporting of chemical inventories with identification of EPA hazard categories. The hazard categories for this product are as follows:

**IMMEDIATE:** Yes

**PRESSURE:** No

**DELAYED:** No

**REACTIVITY:** Yes

**FIRE:** No

**SECTION 313:** Requires submission of annual reports of release of toxic chemicals that appear in 40 CFR Part 372.

This material is subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA) and 40CFR Part 372.

**40 CFR 68: RISK MANAGEMENT PROGRAM FOR CHEMICAL ACCIDENTAL RELEASE PREVENTION:** Requires development and implementation of risk management programs at facilities that manufacture, use, store, or otherwise handle regulated substances in quantities that exceed specified thresholds.

This material is not listed as a regulated substance.

**TSCA: TOXIC SUBSTANCES CONTROL ACT:** This material is listed on the TSCA inventory.

**OSHA: OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION:**

29 CFR 1910.119: **PROCESS SAFETY MANAGEMENT OF HIGHLY HAZARDOUS CHEMICALS:** Requires facilities to develop a process safety management program based on Threshold Quantities (TQ) of highly hazardous chemicals.

This material is not listed in Appendix A as a highly hazardous chemical.

**STATE REGULATIONS:**

**CALIFORNIA:** This material is not listed by California under the SAFE DRINKING WATER AND TOXIC ENFORCEMENT ACT OF 1986 (Proposition 65).

**PENNSYLVANIA:** This material is subject to the PENNSYLVANIA WORKER AND COMMUNITY RIGHT-TO-KNOW ACT (35 P.S. Sections 7301-7320).

**16. Other Information**

Be sure to read and understand all labels and instructions supplied with all containers of this product.

**OTHER HAZARDOUS CONDITIONS OF HANDLING, STORAGE, AND USE:** *Corrosive, toxic solid.* Use only with compatible materials and equipment. Store and use with adequate ventilation at all times.

**Mixtures.** When you mix two or more chemicals, you can create additional, unexpected hazards. Obtain and evaluate the safety information for each component before you produce the mixture. Consult an industrial hygienist or other trained person when you evaluate the end product. Remember, chemicals have properties that can cause serious injury or death.

**HAZARD RATING SYSTEMS:**

**NFPA RATINGS:**

HEALTH = 3  
FLAMMABILITY = 0  
INSTABILITY = 0  
SPECIAL = None

**HMIS RATINGS:**

HEALTH = 3  
FLAMMABILITY = 0  
PHYSICAL HAZARD = 0

Praxair asks users of this product to study this MSDS and become aware of product hazards and safety information. To promote safe use of this product, a user should (1) notify employees, agents, and contractors of the information in this MSDS and of any other known product hazards and safety information, (2) furnish this information to each purchaser of the product, and (3) ask each purchaser to notify its employees and customers of the product hazards and safety information.

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The opinions expressed herein are those of qualified experts within Praxair, Inc. We believe that the information contained herein is current as of the date of this Material Safety Data Sheet. Since the use of this information and the conditions of use of the product are not within the control of Praxair, Inc., it is the user's obligation to determine the conditions of safe use of the product.

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