



[Antimony Pentafluoride / Graphite 1:1](#) [Pricing >](#)

<b>Linear Formula</b>	C:SbF <sub>5</sub>
<b>Pubchem CID</b>	45933604
<b>MDL Number</b>	MFCD00236643
<b>EC No.</b>	232-021-8
<b>IUPAC Name</b>	methane; pentafluoro-λ5-stibane
<b>Beilstein/Reaxys No.</b>	N/A
<b>SMILES</b>	C.F[Sb](F)(F)(F)F
<b>Inchl Identifier</b>	InChI=1S/CH4.5FH.Sb/h1H4;5*1H;/q;;;;;;+5/p-5
<b>Inchl Key</b>	TUKSEZAXQIVVQF-UHFFFAOYSA-I
<b>Signal Word</b>	Danger
<b>Hazard Statements</b>	H301+H311+H331-H314
<b>Hazard Codes</b>	C, T, N
<b>Precautionary Statements</b>	P260-P301+P310-P303+P361+P353-P305+P351+P338-P361-P405-P501
<b>Flash Point</b>	Not applicable
<b>Risk Codes</b>	R23/24/25,R34,R36/37/38
<b>Safety Statements</b>	S22,S24/25,S26,S27,S28,S36/37/39,S45
<b>RTECS Number</b>	N/A
<b>Transport Information</b>	UN2923 8/PG II
<b>WGK Germany</b>	2
<b>GHS Pictograms</b>	<a href="#">GHS05 Corrosive</a>  <a href="#">GHS06 Skull and Crossbones</a> 

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## SAFETY DATA SHEET

Date Accessed: 04/29/2024

Date Revised: 01/15/2022

### SECTION 1. IDENTIFICATION

**Product Identifiers:** All applicable American Elements product codes for CAS #59839-60-0

**Relevant identified uses of the substance:**  
Scientific research and development

Supplier details:

American Elements  
10884 Weyburn Ave.  
Los Angeles, CA 90024  
Tel: +1 310-208-0551  
Fax: +1 310-208-0351

Emergency telephone number:  
Domestic, North America +1 800-424-9300  
International +1 703-527-3887

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## SECTION 2. HAZARDS IDENTIFICATION

Classification of the substance or mixture in accordance with 29 CFR 1910 (OSHA HCS)  
GHS06 Skull and crossbones  
Acute Tox. 3 H301 Toxic if swallowed.  
Acute Tox. 3 H311 Toxic in contact with skin.  
Acute Tox. 3 H331 Toxic if inhaled.  
GHS05 Corrosion  
Skin Corr. 1B H314 Causes severe skin burns and eye damage.  
Eye Dam. 1 H318 Causes serious eye damage.  
Hazards not otherwise classified No data available  
GHS label elements, including precautionary statements



Hazard pictograms  
GHS05 GHS06  
Signal word Danger  
Hazard statements  
H301+H311+H331 Toxic if swallowed, in contact with skin or if inhaled.  
H314 Causes severe skin burns and eye damage.  
Precautionary statements  
P260 Do not breathe dust/fume/gas/mist/vapors/spray.  
P301+P310 IF SWALLOWED: Immediately call a POISON CENTER/ doctor  
P303+P361+P353 If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.  
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P361 Take off immediately all contaminated clothing.  
P405 Store locked up.  
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.  
WHMIS classification  
D1A - Very toxic material causing immediate and

serious toxic effects  
D2B - Toxic material causing other toxic effects  
E - Corrosive material  
Classification system  
HMIS ratings (scale 0-4)  
(Hazardous Materials Identification System)  
HEALTH  
FIRE  
REACTIVITY  
3  
1  
1  
Health (acute effects) = 3  
Flammability = 1  
Physical Hazard = 1  
Other hazards  
Results of PBT and vPvB assessment  
PBT: N/A  
vPvB: N/A

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### **SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS**

Substances  
CAS No. / Substance Name:  
59839-60-0 Antimony(V) fluoride compound with  
graphite, 1:1 mixture

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### **SECTION 4. FIRST AID MEASURES**

Description of first aid measures  
General information  
Immediately remove any clothing soiled by the  
product.  
Remove breathing apparatus only after contaminated  
clothing has been completely removed.  
In case of irregular breathing or respiratory arrest  
provide artificial respiration.  
If inhaled:  
Supply patient with fresh air. If not breathing, provide  
artificial respiration. Keep patient warm.  
Seek immediate medical advice.  
In case of skin contact:  
Immediately wash with soap and water; rinse  
thoroughly.  
Seek immediate medical advice.  
In case of eye contact:  
Rinse opened eye for several minutes under running  
water. Consult a physician.  
If swallowed:  
Do not induce vomiting; immediately call for medical

help.  
Information for doctor  
Most important symptoms and effects, both acute and delayed  
Causes severe skin burns.  
Causes serious eye damage.  
Indication of any immediate medical attention and special treatment needed:  
No data available

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## **SECTION 5. FIREFIGHTING MEASURES**

Extinguishing media  
Suitable extinguishing agents CO<sub>2</sub>, sand, extinguishing powder. Do not use water.  
Special hazards arising from the substance or mixture  
If this product is involved in a fire, the following can be released:  
Carbon monoxide and carbon dioxide  
Antimony oxides  
Hydrogen fluoride (HF)  
Advice for firefighters  
Protective equipment:  
Wear self-contained respirator.  
Wear fully protective impervious suit.

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## **SECTION 6. ACCIDENTAL RELEASE MEASURES**

Personal precautions, protective equipment and emergency procedures  
Use personal protective equipment. Keep unprotected persons away.  
Ensure adequate ventilation  
Environmental precautions: Do not allow material to be released to the environment without official permits.  
Methods and materials for containment and cleanup:  
Use neutralizing agent.  
Dispose of contaminated material as waste according to section 13.  
Ensure adequate ventilation.  
Prevention of secondary hazards: No special measures required.  
Reference to other sections  
See Section 7 for information on safe handling  
See Section 8 for information on personal protection equipment.  
See Section 13 for disposal information.

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## **SECTION 7. HANDLING AND STORAGE**

### Handling

Precautions for safe handling

Handle under dry protective gas.

Keep container tightly sealed.

Store in cool, dry place in tightly closed containers.

Ensure good ventilation at the workplace.

Open and handle container with care.

Information about protection against explosions and fires: No data available

Conditions for safe storage, including any incompatibilities

Requirements to be met by storerooms and receptacles: No special requirements.

Information about storage in one common storage facility:

Store away from strong bases.

Store away from oxidizing agents.

Store away from water/moisture.

Further information about storage conditions:

Store under dry inert gas.

This product is moisture sensitive.

Keep container tightly sealed.

Store in cool, dry conditions in well-sealed containers.

Protect from humidity and water.

Specific end use(s) No data available

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## **SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

Additional information about design of technical systems:

Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute.

Control parameters

Components with limit values that require monitoring at the workplace:

Fluorides (as F)

mg/m<sup>3</sup>

ACGIH TLV 2.5

Austria MAK 2.5

Belgium TWA 2.5

Finland TWA 2.5

France TWA 2.5

Germany MAK 2.5

Hungary TWA 1; 2-STEL

Netherlands MAC-K 3.5

Norway TWA 0.6

Poland TWA 1; 3-STEL

Sweden NGV 2  
Switzerland MAK-W 1.5; 3-KZG-W  
United Kingdom TWA 2.5  
Russia TWA 2  
Denmark TWA 2.5  
USA PEL 2.5  
Antimony and antimony compounds  
mg/m<sup>3</sup>  
ACGIH TLV 0.5  
Austria MAK 0.5  
Belgium TWA 0.5  
Denmark TWA 0.5  
Finland TWA 0.5  
France VME 0.5  
Germany MAK 0.5 (total dust)  
Hungary TWA 0.5-STEL  
Japan OEL 0.1; 2B Carcinogen  
Korea TLV 0.5  
Ireland TWA 0.5  
Netherlands MAC-TGG 0.5  
Norway TWA 0.5  
Poland TWA 0.5; 1.5-STEL  
Russia TWA 0.2; 0.5-STEL  
Sweden NGV 0.5  
Switzerland MAK-W 0.5  
United Nations TWA 0.5  
USA PEL 0.5

Additional information: No data

Exposure controls

Personal protective equipment

Follow typical protective and hygienic practices for handling chemicals.

Keep away from foodstuffs, beverages and feed.

Remove all soiled and contaminated clothing immediately.

Wash hands before breaks and at the end of work.

Store protective clothing separately.

Avoid contact with the eyes and skin.

Maintain an ergonomically appropriate working environment.

Breathing equipment: Use self-contained respiratory protective device in emergency situations.

Protection of hands:

Impervious gloves

Inspect gloves prior to use.

The selection of suitable gloves not only depends on the material, but also on quality. Quality will vary from manufacturer to manufacturer.

Penetration time of glove material (in minutes) No data available

Eye protection:

Tightly sealed goggles

Full face protection

Body protection: Protective work clothing.

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## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance:

Form: Powder

Color: Black

Odor: No data available

Odor threshold: No data available.

pH: N/A

Melting point/Melting range: No data available

Boiling point/Boiling range: No data available

Sublimation temperature / start: No data available

Flammability (solid, gas) No data available.

Ignition temperature: No data available

Decomposition temperature: No data available

Autoignition: No data available.

Danger of explosion: Product does not present an explosion hazard.

Explosion limits:

Lower: No data available

Upper: No data available

Vapor pressure: N/A

Density: No data available

Relative density No data available.

Vapor density N/A

Evaporation rate N/A

Solubility in / Miscibility with

Water: Reacts

Partition coefficient (n-octanol/water): No data available.

Viscosity:

Dynamic: N/A

Kinematic: N/A

Other information No data available

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## SECTION 10. STABILITY AND REACTIVITY

Reactivity No data available

Chemical stability Stable under recommended storage conditions.

Thermal decomposition / conditions to be avoided:

Decomposition will not occur if used and stored according to specifications.

Possibility of hazardous reactions No dangerous reactions known

Conditions to avoid No data available

Incompatible materials:

Bases

Oxidizing agents

Water/moisture

Hazardous decomposition products:  
Carbon monoxide and carbon dioxide  
Antimony oxides  
Hydrogen fluoride

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## **SECTION 11. TOXICOLOGICAL INFORMATION**

Information on toxicological effects

Acute toxicity:

Toxic in contact with skin.

Toxic if inhaled.

Toxic if swallowed.

Danger through skin absorption.

Swallowing will lead to a strong corrosive effect on mouth and throat and to the danger of perforation of esophagus and stomach.

LD/LC50 values that are relevant for classification: No data

Skin irritation or corrosion: Causes severe skin burns.

Eye irritation or corrosion: Causes serious eye damage.

Sensitization: No sensitizing effects known.

Germ cell mutagenicity: No effects known.

Carcinogenicity: No classification data on carcinogenic properties of this material is available from the EPA, IARC, NTP, OSHA or ACGIH.

Reproductive toxicity: No effects known.

Specific target organ system toxicity - repeated exposure: No effects known.

Specific target organ system toxicity - single exposure: No effects known.

Aspiration hazard: No effects known.

Subacute to chronic toxicity:

Fluorides may cause salivation, nausea, vomiting, diarrhea and abdominal pain, followed by weakness, tremors, shallow respiration, convulsions and coma.

May

cause brain and kidney damage. Chronic fluoride poisoning can cause severe bone changes, loss of weight, anorexia, anemia and dental defects.

Antimony compounds may cause metallic taste, gastrointestinal disturbances, vomiting, diarrhea, dizziness and systemic poisoning. Chronic exposure may cause

liver and kidney damage. Dermatitis and eczematous skin eruptions may result from skin contact.

Subacute to chronic toxicity: No effects known.

Additional toxicological information: To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.

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## **SECTION 12. ECOLOGICAL INFORMATION**

Toxicity

Aquatic toxicity: No data available

Persistence and degradability No data available

Bioaccumulative potential No data available

Mobility in soil No data available

Ecotoxicological effects:

Remark: Toxic for aquatic organisms

Additional ecological information:

Do not allow material to be released to the environment without official permits.

Toxic for aquatic organisms

Do not allow product to reach groundwater, water courses, or sewage systems, even in small quantities.

Danger to drinking water if even extremely small quantities leak into the ground.

Also poisonous for fish and plankton in water bodies.

Toxic to aquatic life.

May cause long lasting harmful effects to aquatic life.

Avoid transfer into the environment.

Results of PBT and vPvB assessment

PBT: N/A

vPvB: N/A

Other adverse effects No data available

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## **SECTION 13. DISPOSAL CONSIDERATIONS**

Waste treatment methods

Recommendation Consult official regulations to ensure proper disposal.

Uncleaned packagings:

Recommendation: Disposal must be made according to official regulations.

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## **SECTION 14. TRANSPORT INFORMATION**

UN-Number

DOT, IMDG, IATA UN2923

UN proper shipping name

DOT Corrosive solids, toxic, n.o.s. (Antimony(V) fluoride compound with graphite, 1:1 mixture)

IMDG CORROSIVE SOLID, TOXIC, N.O.S.

(Antimony(V) fluoride compound with graphite, 1:1 mixture), MARINE POLLUTANT

IATA CORROSIVE SOLID, TOXIC, N.O.S.

(Antimony(V) fluoride compound with graphite, 1:1 mixture)

Transport hazard class(es)  
DOT  
Class 8 Corrosive substances.  
Label 8+6.1  
Class 8 (CT2) Corrosive substances  
Label 8+6.1  
IMDG  
Class 8 Corrosive substances.  
Label 8+6.1  
IATA  
Class 8 Corrosive substances.  
Label 8+6.1  
Packing group  
DOT, IMDG, IATA II  
Environmental hazards: Environmentally hazardous  
substance, solid; Marine Pollutant  
Marine pollutant (IMDG): Symbol (fish and tree)  
Special precautions for user Warning: Corrosive  
substances  
EMS Number: F-A,S-B  
Transport in bulk according to Annex II of  
MARPOL73/78 and the IBC Code N/A  
Transport/Additional information:  
DOT  
Marine Pollutant (DOT): No  
Remarks: Special marking with the symbol (fish and  
tree).  
UN "Model Regulation": UN2923, Corrosive solids,  
toxic, n.o.s. (Antimony(V) fluoride compound with  
graphite, 1:1 mixture), 8 (6.1), II

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## **SECTION 15. REGULATORY INFORMATION**

Safety, health and environmental  
regulations/legislation specific for the substance or  
mixture  
GHS label elements, including precautionary  
statements  
Hazard pictograms  
GHS05 GHS06  
Signal word Danger  
Hazard statements  
H301+H311+H331 Toxic if swallowed, in contact with  
skin or if inhaled.  
H314 Causes severe skin burns and eye damage.  
Precautionary statements  
P260 Do not breathe  
dust/fume/gas/mist/vapors/spray.  
P301+P310 IF SWALLOWED: Immediately call a  
POISON CENTER/ doctor  
P303+P361+P353 If on skin (or hair): Take off  
immediately all contaminated clothing. Rinse skin with

water/shower.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P361 Take off immediately all contaminated clothing.

P405 Store locked up.

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

National regulations

This product is not listed in the U.S. Environmental Protection Agency Toxic Substances Control Act Chemical Substance Inventory. Use of this product is restricted

to research and development only. This product must be used by or directly under the supervision of a technically qualified individual as defined by TSCA.

This

product must not be used for commercial purposes or in formulations for commercial purposes.

SARA Section 313 (specific toxic chemical listings)

59839-60-0 Antimony(V) fluoride compound with graphite, 1:1 mixture

California Proposition 65

Prop 65 - Chemicals known to cause cancer

Substance is not listed.

Prop 65 - Developmental toxicity Substance is not listed.

Prop 65 - Developmental toxicity, female Substance is not listed.

Prop 65 - Developmental toxicity, male Substance is not listed.

Information about limitation of use:

For use only by technically qualified individuals.

This product contains antimony and is subject to the reporting requirements of section 313 of the Emergency Planning and Community Right to know Act of 1986

and 40CFR372.

Other regulations, limitations and prohibitive regulations

Substance of Very High Concern (SVHC) according to the REACH Regulations (EC) No. 1907/2006.

Substance is not listed.

The conditions of restrictions according to Article 67 and Annex XVII of the Regulation (EC) No 1907/2006 (REACH) for the manufacturing, placing on the market and use must be observed.

Substance is not listed.

Annex XIV of the REACH Regulations (requiring Authorisation for use) Substance is not listed.

Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

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## 16. OTHER INFORMATION

Safety Data Sheet according to Regulation (EC) No. 1907/2006 (REACH). The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. American Elements shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale. COPYRIGHT 1997-2022 AMERICAN ELEMENTS. LICENSED GRANTED TO MAKE UNLIMITED PAPER COPIES FOR INTERNAL USE ONLY.

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