



SAFETY DATA SHEET

MATERION

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Name of the substance Antimony Fluoride Liquid
Identification number 051-003-00-9 (Index number)
Synonyms ANTIMONY(V) PENTAFLUORIDE * Antimony pentafluoride * Antimony fluoride (SbF5)
Document number 1BN
Materion Code 1BN
Issue date 09-January-2018
Version number 01

1.2. Relevant identified uses of the substance or mixture and uses advised against

Identified uses Not available.
Uses advised against None known.

1.3. Details of the supplier of the safety data sheet

Supplier

Company name Materion Advanced Chemicals Inc.
Address 407 N. 13th Street
1316 W. St. Paul Avenue
Milwaukee, WI 53233
United States
Division Milwaukee
Telephone 414.212.0257
e-mail advancedmaterials@materion.com
Contact person Noreen Atkinson

1.4. Emergency telephone number

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

The substance has been assessed and/or tested for its physical, health and environmental hazards and the following classification applies.

Classification according to Regulation (EC) No 1272/2008 as amended

Health hazards

Acute toxicity, oral	Category 4	H302 - Harmful if swallowed.
Acute toxicity, inhalation	Category 4	H332 - Harmful if inhaled.
Skin corrosion/irritation	Category 1B	H314 - Causes severe skin burns and eye damage.

Environmental hazards

Hazardous to the aquatic environment, long-term aquatic hazard	Category 2	H411 - Toxic to aquatic life with long lasting effects.
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Hazard summary Causes severe skin burns and eye damage. Causes serious eye damage. Harmful if inhaled. Harmful if swallowed. Dangerous for the environment if discharged into watercourses.

2.2. Label elements

Label according to Regulation (EC) No. 1272/2008 as amended

Contains: Antimony Fluoride

Hazard pictograms



Signal word Danger

Hazard statements

H302	Harmful if swallowed.
H314	Causes severe skin burns and eye damage.

H318 Causes serious eye damage.
H332 Harmful if inhaled.
H411 Toxic to aquatic life with long lasting effects.

Precautionary statements

Prevention

P271 Use only outdoors or in a well-ventilated area.
P260 Do not breathe mist or vapour.
P264 Wash thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P273 Avoid release to the environment.
P280 Wear protective gloves/protective clothing/eye protection/face protection.

Response

P301 + P312 IF SWALLOWED: Call a POISON CENTRE or doctor/physician if you feel unwell.
P301 + P330 + P331 IF SWALLOWED: rinse mouth. Do NOT induce vomiting.
P303 + P361 + P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304 + P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310 Immediately call a POISON CENTRE or doctor/physician.
P321 Specific treatment (see this label).
P363 Wash contaminated clothing before reuse.
P391 Collect spillage.

Storage

P405 Store locked up.

Disposal

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

Supplemental label information

Corrosive to the respiratory tract.

2.3. Other hazards

None known.

SECTION 3: Composition/information on ingredients

3.1. Substances

General information

Chemical name	%	CAS-No. / EC No.	REACH Registration No.	INDEX No.	Notes
Antimony Fluoride	90 - 100	7783-70-2 232-021-8	-	051-003-00-9	#
Classification:	Acute Tox. 4;H302, Skin Corr. 1B;H314, Eye Dam. 1;H318, Acute Tox. 4;H332, Aquatic Chronic 2;H411				1,A

List of abbreviations and symbols that may be used above

CLP: Regulation No. 1272/2008.
DSD: Directive 67/548/EEC.
M: M-factor
vPvB: very persistent and very bioaccumulative substance.
PBT: persistent, bioaccumulative and toxic substance.
#: This substance has been assigned Community workplace exposure limit(s).

Composition comments

The full text for all R- and H-phrases is displayed in section 16.

SECTION 4: First aid measures

General information

Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. In the case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). Wash contaminated clothing before reuse.

4.1. Description of first aid measures

Inhalation

Remove victim to fresh air and keep at rest in a position comfortable for breathing. Oxygen or artificial respiration if needed. Do not use mouth-to-mouth method if victim inhaled the substance. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Call a physician or poison control centre immediately.

Skin contact

Take off immediately all contaminated clothing. Rinse skin with water/shower. Call a physician or poison control centre immediately. For minor skin contact, avoid spreading material on unaffected skin.

Eye contact Rinse cautiously with water for several minutes. Rinse with water. Remove contact lenses, if present and easy to do. Continue rinsing. Call a physician or poison control centre immediately. Get medical attention if irritation develops and persists.

Ingestion Call a physician or poison control centre immediately. IF SWALLOWED: Call a POISON CENTRE or doctor/physician if you feel unwell. Rinse mouth. Do not induce vomiting. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.

4.2. Most important symptoms and effects, both acute and delayed Corrosive effects. Irritation of eyes and mucous membranes. May cause temporary blindness and severe eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision.

4.3. Indication of any immediate medical attention and special treatment needed Provide general supportive measures and treat symptomatically. Treat symptomatically. In case of shortness of breath, give oxygen. Keep victim warm. Keep victim under observation. Symptoms may be delayed.

SECTION 5: Firefighting measures

General fire hazards No unusual fire or explosion hazards noted.

5.1. Extinguishing media

Suitable extinguishing media Powder. Carbon dioxide (CO₂).

Unsuitable extinguishing media Water. Do not use water jet as an extinguisher, as this will spread the fire.

5.2. Special hazards arising from the substance or mixture Not available.

5.3. Advice for firefighters

Special protective equipment for firefighters Wear suitable protective equipment.

Special firefighting procedures Water runoff can cause environmental damage.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

For non-emergency personnel Local authorities should be advised if significant spillages cannot be contained. Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate personal protective equipment. Fully encapsulating, vapour protective clothing should be worn for spills and leaks with no fire. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate closed spaces before entering them.

For emergency responders Keep unnecessary personnel away. Use personal protection recommended in Section 8 of the SDS.

6.2. Environmental precautions

Avoid release to the environment. Contact local authorities in case of spillage to drain/aquatic environment. Prevent further leakage or spillage if safe to do so. Do not contaminate water. Avoid discharge into drains, water courses or onto the ground.

6.3. Methods and material for containment and cleaning up

Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Cover with plastic sheet to prevent spreading. Absorb in vermiculite, dry sand or earth and place into containers. Prevent product from entering drains.

Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.

Never return spills in original containers for re-use.

6.4. Reference to other sections

For personal protection, see section 8 of the SDS. For waste disposal, see section 13 of the SDS.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Do not breathe mist or vapour. Do not get this material in contact with eyes. Do not get this material in contact with skin. Do not taste or swallow. Avoid prolonged exposure. Do not get this material on clothing. Use only outdoors or in a well-ventilated area. When using, do not eat, drink or smoke. Wash hands thoroughly after handling. Avoid release to the environment. Do not empty into drains.

7.2. Conditions for safe storage, including any incompatibilities

Store locked up. Keep container tightly closed. Store in a cool, dry place out of direct sunlight. Store in a well-ventilated place. Keep out of the reach of children.

7.3. Specific end use(s) Not available.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational exposure limits

Cyprus. OELs. Control of factory atmosphere and dangerous substances in factories regulation, PI 311/73, as amended.

Material	Type	Value
Antimony Fluoride (CAS 7783-70-2)	TWA	0,5 mg/m ³

Denmark. Exposure Limit Values

Material	Type	Value
Antimony Fluoride (CAS 7783-70-2)	TLV	2,5 mg/m ³

Estonia. OELs. Occupational Exposure Limits of Hazardous Substances. (Annex of Regulation No. 293 of 18 September 2001)

Material	Type	Value
Antimony Fluoride (CAS 7783-70-2)	TWA	2,5 mg/m ³

France. Threshold Limit Values (VLEP) for Occupational Exposure to Chemicals in France, INRS ED 984

Material	Type	Value
Antimony Fluoride (CAS 7783-70-2)	VME	2,5 mg/m ³ 0,5 mg/m ³

Latvia. OELs. Occupational exposure limit values of chemical substances in work environment

Material	Type	Value
Antimony Fluoride (CAS 7783-70-2)	TWA	2,5 mg/m ³

Lithuania. OELs. Limit Values for Chemical Substances, General Requirements

Material	Type	Value
Antimony Fluoride (CAS 7783-70-2)	TWA	2,5 mg/m ³

Luxembourg. Binding Occupational exposure limit values (Annex I), Memorial A

Material	Type	Value
Antimony Fluoride (CAS 7783-70-2)	TWA	2,5 mg/m ³

Malta. OELs. Occupational Exposure Limit Values (L.N. 227. of Occupational Health and Safety Authority Act (CAP. 424), Schedules I and V)

Material	Type	Value
Antimony Fluoride (CAS 7783-70-2)	TWA	2,5 mg/m ³

Netherlands. OELs (binding)

Material	Type	Value
Antimony Fluoride (CAS 7783-70-2)	STEL	2 mg/m ³
	TWA	0,5 mg/m ³

Portugal. OELs. Decree-Law n. 290/2001 (Journal of the Republic - 1 Series A, n.266)

Material	Type	Value
Antimony Fluoride (CAS 7783-70-2)	TWA	2,5 mg/m ³

Romania. OELs. Protection of workers from exposure to chemical agents at the workplace

Material	Type	Value
Antimony Fluoride (CAS 7783-70-2)	TWA	2,5 mg/m ³

Switzerland. SUVA Grenzwerte am Arbeitsplatz

Material	Type	Value	Form
Antimony Fluoride (CAS 7783-70-2)	STEL	4 mg/m ³	Inhalable dust.
	TWA	1 mg/m ³	Inhalable dust.

EU. Indicative Exposure Limit Values in Directives 91/322/EEC, 2000/39/EC, 2006/15/EC, 2009/161/EU

Material	Type	Value
Antimony Fluoride (CAS 7783-70-2)	TWA	2,5 mg/m ³

Biological limit values**Czech Republic. Limit Values for Indicators of Biological Exposure Tests in Urine and Blood, Annex 2, Tables 1 and 2, Government Decree 432/2003 Sb.**

Material	Value	Determinant	Specimen	Sampling time
Antimony Fluoride (CAS 7783-70-2)	60 µmol/mmol	Fluoride	Creatinine in urine	*
	10 mg/g	Fluoride	Creatinine in urine	*

* - For sampling details, please see the source document.

France. Biological indicators of exposure (IBE) (National Institute for Research and Security (INRS, ND 2065)

Material	Value	Determinant	Specimen	Sampling time
Antimony Fluoride (CAS 7783-70-2)	3 mg/g	Fluorures	Creatinine in urine	*
	10 mg/g	Fluorures	Creatinine in urine	*

* - For sampling details, please see the source document.

Germany. TRGS 903, BAT List (Biological Limit Values)

Material	Value	Determinant	Specimen	Sampling time
Antimony Fluoride (CAS 7783-70-2)	7 mg/g	Fluorid	Creatinine in urine	*
	4 mg/g	Fluorid	Creatinine in urine	*

* - For sampling details, please see the source document.

Hungary. Chemical Safety at Workplace Ordinance Joint Decree No. 25/2000 (Annex 2): Permissible limit values of biological exposure (effect) indices

Material	Value	Determinant	Specimen	Sampling time
Antimony Fluoride (CAS 7783-70-2)	7 mg/g	fluoride	Creatinine in urine	*
	4 mg/g	fluoride	Creatinine in urine	*
	42 µmol/mmol	fluoride	Creatinine in urine	*
	24 µmol/mmol	fluoride	Creatinine in urine	*

* - For sampling details, please see the source document.

Slovakia. BLVs (Biological Limit Value). Regulation no. 355/2006 concerning protection of workers exposed to chemical agents, Annex 2

Material	Value	Determinant	Specimen	Sampling time
Antimony Fluoride (CAS 7783-70-2)	7 mg/g	Fluorides	Creatinine in urine	*
	4 mg/g	Fluorides	Creatinine in urine	*

* - For sampling details, please see the source document.

Spain. Biological Limit Values (VLBs), Occupational Exposure Limits for Chemical Agents, Table 4

Material	Value	Determinant	Specimen	Sampling time
Antimony Fluoride (CAS 7783-70-2)	8 mg/l	Fluoruros	Urine	*

* - For sampling details, please see the source document.

Recommended monitoring procedures Follow standard monitoring procedures.

Derived no effect levels (DNELs) Not available.

Predicted no effect concentrations (PNECs) Not available.

8.2. Exposure controls

Appropriate engineering controls	Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Provide eyewash station.
Individual protection measures, such as personal protective equipment	
General information	Wear chemical protective equipment that is specifically recommended by the manufacturer. Eye wash fountain is recommended.
Eye/face protection	Wear eye/face protection.
Skin protection	
- Hand protection	Wear protective gloves. Not normally needed.
- Other	Wear appropriate chemical resistant clothing. Wear protective gloves. It may provide little or no thermal protection. Personal protection equipment should be chosen according to the CEN standards and in discussion with the supplier of the personal protective equipment.
Respiratory protection	In case of insufficient ventilation, wear suitable respiratory equipment.
Thermal hazards	Not available.
Hygiene measures	When using, do not eat, drink or smoke. Do not get in eyes. Do not get this material in contact with skin. Do not get this material on clothing. Wash hands before breaks and immediately after handling the product. Handle in accordance with good industrial hygiene and safety practices.
Environmental exposure controls	Contain spills and prevent releases and observe national regulations on emissions. Environmental manager must be informed of all major releases.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance

Physical state	Liquid.
Form	Liquid.
Colour	Not available.
Odour	Not available.
Odour threshold	Not available.
pH	Not available.
Melting point/freezing point	8,3 °C (46,94 °F)
Initial boiling point and boiling range	141 °C (285,8 °F)
Flash point	Not available.
Evaporation rate	Not available.
Flammability (solid, gas)	Not available.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	Not available.
Flammability limit - upper (%)	Not available.
Vapour pressure	88,93 kPa at 25 °C
Vapour density	Not available.
Relative density	Not available.
Solubility(ies)	
Solubility (water)	Not available.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	Not available.
Explosive properties	Not available.
Oxidising properties	Not available.

9.2. Other information

Density	3,10 g/cm ³ estimated
Dynamic viscosity	0,77 mPa.s

Dynamic viscosity temperature	24,4 °C (75,92 °F)
Kinematic viscosity	0,248005 mm ² /s estimated
Molecular formula	F5-Sb
Molecular weight	216,76 g/mol
Specific gravity	3,1 at 25,8 °C

SECTION 10: Stability and reactivity

10.1. Reactivity	Not available.
10.2. Chemical stability	Material is stable under normal conditions.
10.3. Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
10.4. Conditions to avoid	None under normal conditions.
10.5. Incompatible materials	None known.
10.6. Hazardous decomposition products	Antimony. Hydrogen fluoride.

SECTION 11: Toxicological information

General information Occupational exposure to the substance or mixture may cause adverse effects.

Information on likely routes of exposure

Inhalation	Harmful if inhaled.
Skin contact	Causes severe skin burns.
Eye contact	Causes severe eye burns. Causes serious eye damage.
Ingestion	Causes digestive tract burns. Harmful if swallowed.

Symptoms Burning pain and severe corrosive skin damage. Permanent eye damage including blindness could result.

11.1. Information on toxicological effects

Acute toxicity	Causes severe skin burns and eye damage. Harmful if inhaled. Harmful if swallowed.
Skin corrosion/irritation	Causes severe skin burns and eye damage.
Serious eye damage/eye irritation	Causes severe eye burns. Causes serious eye damage.
Respiratory sensitisation	Due to lack of data the classification is not possible.
Skin sensitisation	Due to lack of data the classification is not possible.
Germ cell mutagenicity	Due to lack of data the classification is not possible.
Carcinogenicity	Due to lack of data the classification is not possible.

Hungary. 26/2000 EüM Ordinance on protection against and preventing risk relating to exposure to carcinogens at work (as amended)

Not listed.

IARC Monographs. Overall Evaluation of Carcinogenicity

Antimony Fluoride (CAS 7783-70-2) 3 Not classifiable as to carcinogenicity to humans.

Reproductive toxicity	Due to lack of data the classification is not possible.
Specific target organ toxicity - single exposure	Due to lack of data the classification is not possible.
Specific target organ toxicity - repeated exposure	Due to lack of data the classification is not possible.
Aspiration hazard	Due to lack of data the classification is not possible.
Mixture versus substance information	Not available.
Other information	Not available.

SECTION 12: Ecological information

12.1. Toxicity	Toxic to aquatic life with long lasting effects. Accumulation in aquatic organisms is expected.
12.2. Persistence and degradability	No data is available on the degradability of this product.
12.3. Bioaccumulative potential	Not available.

Partition coefficient n-octanol/water (log Kow)	Not available.
Bioconcentration factor (BCF)	Not available.
12.4. Mobility in soil	Not available.
12.5. Results of PBT and vPvB assessment	Not a PBT or vPvB substance or mixture.
12.6. Other adverse effects	Not available.
12.7. Additional information	

Estonia Dangerous substances in groundwater Data

Antimony Fluoride (CAS 7783-70-2)	Fluoride (as F-ion, total) 1500 UG/L
	Fluoride (as F-ion, total) 4000 UG/L

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Residual waste	Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).
Contaminated packaging	Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.
EU waste code	The Waste code should be assigned in discussion between the user, the producer and the waste disposal company.
Disposal methods/information	Collect and reclaim or dispose in sealed containers at licensed waste disposal site. This material and its container must be disposed of as hazardous waste. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations.

SECTION 14: Transport information

ADR

14.1. UN number	UN1732
14.2. UN proper shipping name	Antimony pentafluoride
14.3. Transport hazard class(es)	
Class	8
Subsidiary risk	6.1(PGI, II)
Label(s)	8
	+6.1
Hazard No. (ADR)	86
Tunnel restriction code	E
14.4. Packing group	II
14.5. Environmental hazards	No.
14.6. Special precautions for user	Not available.

RID

14.1. UN number	UN1732
14.2. UN proper shipping name	Antimony pentafluoride
14.3. Transport hazard class(es)	
Class	8
Subsidiary risk	6.1(PGI, II)
Label(s)	8+6.1
14.4. Packing group	II
14.5. Environmental hazards	No.
14.6. Special precautions for user	Not available.

ADN

14.1. UN number	UN1732
14.2. UN proper shipping name	Antimony pentafluoride

14.3. Transport hazard class(es)

Class 8
Subsidiary risk 6.1(PGI, II)
Label(s) 8+6.1

14.4. Packing group II

14.5. Environmental hazards No.

14.6. Special precautions for user Not available.

IATA

14.1. UN number UN1732

14.2. UN proper shipping name Antimony pentafluoride

14.3. Transport hazard class(es)

Class 8
Subsidiary risk 6.1(PGI, II)

14.4. Packing group II

14.5. Environmental hazards No.

ERG Code 8P

14.6. Special precautions for user Not available.

Other information

Passenger and cargo aircraft Forbidden

Cargo aircraft only Allowed with restrictions.

IMDG

14.1. UN number UN1732

14.2. UN proper shipping name ANTIMONY PENTAFLUORIDE

14.3. Transport hazard class(es)

Class 8
Subsidiary risk 6.1(PGI, II)

14.4. Packing group II

14.5. Environmental hazards

Marine pollutant No.

EmS F-A, S-B

14.6. Special precautions for user Not available.

ADN; ADR; IATA; IMDG; RID



SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

EU regulations

Regulation (EC) No. 1005/2009 on substances that deplete the ozone layer, Annex I and II, as amended

Not listed.

Regulation (EC) No. 850/2004 On persistent organic pollutants, Annex I as amended

Not listed.

Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 1 as amended

Not listed.

Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 2 as amended

Not listed.

Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 3 as amended

Not listed.

Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex V as amended

Not listed.

Regulation (EC) No. 166/2006 Annex II Pollutant Release and Transfer Registry, as amended

Not listed.

Regulation (EC) No. 1907/2006, REACH Article 59(10) Candidate List as currently published by ECHA

Not listed.

Authorisations

Regulation (EC) No. 1907/2006, REACH Annex XIV Substances subject to authorization, as amended

Not listed.

Restrictions on use

Regulation (EC) No. 1907/2006, REACH Annex XVII Substances subject to restriction on marketing and use as amended

Not listed.

Directive 2004/37/EC: on the protection of workers from the risks related to exposure to carcinogens and mutagens at work, as amended.

Not listed.

Other EU regulations

Directive 2012/18/EU on major accident hazards involving dangerous substances, as amended

Antimony Fluoride (CAS 7783-70-2)

Other regulations

The product is classified and labelled in accordance with EC directives or respective national laws. This Safety Data Sheet complies with the requirements of Regulation (EC) No 1907/2006.

National regulations

Not available.

15.2. Chemical safety assessment

No Chemical Safety Assessment has been carried out.

SECTION 16: Other information

List of abbreviations

Not available.

Information on evaluation method leading to the classification of mixture

Not available.

Disclaimer

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