



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 Sulfide, (Sb ₂ S ₃)
Identification number	215-713-4 (EC number)
Synonyms	ANTIMONOUS SULFIDE
Document number	1BQ
Materion Code	1BQ
Issue date	18-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

This substance does not meet the criteria for classification according to Regulation (EC) 1272/2008 as amended.

Hazard summary	Causes severe skin burns and eye damage. Harmful if inhaled. Causes damage to organs through prolonged or repeated exposure. Causes serious eye irritation. Exposure to powder or dusts may be irritating to eyes, nose and throat. Dangerous for the environment if discharged into watercourses.
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2.2. Label elements

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

Contains: antimony sulfide

Hazard pictograms



Signal word

Danger

Hazard statements

H302	Harmful if swallowed.
H302 + H332	Harmful if swallowed or if inhaled
H314	Causes severe skin burns and eye damage.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H372	Causes damage to organs (respiratory system) through prolonged or repeated exposure
H411	Toxic to aquatic life with long lasting effects.

Precautionary statements

Prevention

P260	Do not breathe dust.
P261	Avoid breathing dust/fume.
P264	Wash thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P271	Use only outdoors or in a well-ventilated area.
P273	Avoid release to the environment.
P280	Wear protective gloves/protective clothing/eye protection/face protection.

Response

P337 + P313	If eye irritation persists: Get medical advice/attention.
P391	Collect spillage.

Storage

P405	Store locked up.
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Disposal

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

None.

2.3. Other hazards

The Safety Information Sheet Chemicals of hazardous chemical can be obtained through phone, email or on the company website.

SECTION 3: Composition/information on ingredients

3.1. Substances

General information

Chemical name	%	CAS-No. / EC No.	REACH Registration No.	INDEX No.	Notes
antimony sulfide	100	1345-04-6 215-713-4	-	-	
Classification:	Acute Tox. 4;H302, Skin Corr. 1;H314, Eye Dam. 1;H318, STOT RE 1;H372, Aquatic Chronic 2;H411				

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.

*Designates that a specific chemical identity and/or percentage of composition has been withheld as a trade secret. #: This substance has been assigned Community workplace exposure limit(s).

SECTION 4: First aid measures

General information

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

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

Do not rub eyes. Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a physician or poison control centre immediately.

Ingestion

Call a physician or poison control centre immediately. 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. May cause temporary blindness and severe eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Dusts may irritate the respiratory tract, skin and eyes. Prolonged exposure may cause chronic effects.

4.3. Indication of any immediate medical attention and special treatment needed Provide general supportive measures and 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 Water fog. Foam. Dry chemical powder. Carbon dioxide (CO₂).

Unsuitable extinguishing media None known.

5.2. Special hazards arising from the substance or mixture During fire, gases hazardous to health may be formed.

5.3. Advice for firefighters

Special protective equipment for firefighters Wear suitable protective equipment.

Special firefighting procedures Use water spray to cool unopened containers. Water runoff can cause environmental damage.

Specific methods Use standard firefighting procedures and consider the hazards of other involved materials.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

For non-emergency personnel Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Use a NIOSH/MSHA approved respirator if there is a risk of exposure to dust/fume at levels exceeding the exposure limits. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.

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

6.3. Methods and material for containment and cleaning up Stop the flow of material, if this is without risk. Collect spillage. Collect dust using a vacuum cleaner equipped with HEPA filter.

Large Spills: Wet down with water and dike for later disposal. Shovel the material into waste container. Avoid the generation of dusts during clean-up. Prevent entry into waterways, sewer, basements or confined areas. Following product recovery, flush area with water.

Small Spills: Sweep up or vacuum up spillage and collect in suitable container for disposal.

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

7.2. Conditions for safe storage, including any incompatibilities Store locked up. Store in a cool, dry place out of direct sunlight. Store in original tightly closed container. Store in a well-ventilated place. Store away from incompatible materials (see Section 10 of the SDS).

7.3. Specific end use(s) Not available.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational exposure limits**Austria. MAK List, OEL Ordinance (GwV), BGBl. II, no. 184/2001**

Material	Type	Value	Form
antimony sulfide (CAS 1345-04-6)	MAK	0,5 mg/m ³	Inhalable fraction.
	STEL	1,5 mg/m ³	Inhalable fraction.

Belgium. Exposure Limit Values.

Material	Type	Value
antimony sulfide (CAS 1345-04-6)	TWA	0,5 mg/m ³

Bulgaria. OELs. Regulation No 13 on protection of workers against risks of exposure to chemical agents at work

Material	Type	Value
antimony sulfide (CAS 1345-04-6)	TWA	0,5 mg/m ³

Croatia. Dangerous Substance Exposure Limit Values in the Workplace (ELVs), Annexes 1 and 2, Narodne Novine, 13/09

Material	Type	Value
antimony sulfide (CAS 1345-04-6)	MAC	0,5 mg/m ³

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

Material	Type	Value
antimony sulfide (CAS 1345-04-6)	TWA	0,5 mg/m ³

Czech Republic. OELs. Government Decree 361

Material	Type	Value
antimony sulfide (CAS 1345-04-6)	Ceiling	1,5 mg/m ³
	TWA	0,5 mg/m ³

Finland. Workplace Exposure Limits

Material	Type	Value
antimony sulfide (CAS 1345-04-6)	TWA	0,5 mg/m ³

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

Material	Type	Value
antimony sulfide (CAS 1345-04-6)	VME	0,5 mg/m ³

Greece. OELs (Decree No. 90/1999, as amended)

Material	Type	Value
antimony sulfide (CAS 1345-04-6)	TWA	0,5 mg/m ³

Hungary. OELs. Joint Decree on Chemical Safety of Workplaces

Material	Type	Value
antimony sulfide (CAS 1345-04-6)	STEL	2 mg/m ³
	TWA	0,5 mg/m ³

Iceland. OELs. Regulation 154/1999 on occupational exposure limits

Material	Type	Value	Form
antimony sulfide (CAS 1345-04-6)	TWA	0,5 mg/m ³	Dust.

Ireland. Occupational Exposure Limits

Material	Type	Value
antimony sulfide (CAS 1345-04-6)	TWA	0,5 mg/m ³

Italy. Occupational Exposure Limits

Material	Type	Value
antimony sulfide (CAS 1345-04-6)	TWA	0,5 mg/m ³

Netherlands. OELs (binding)

Material	Type	Value
antimony sulfide (CAS 1345-04-6)	TWA	0,5 mg/m ³

Norway. Administrative Norms for Contaminants in the Workplace

Material	Type	Value
antimony sulfide (CAS 1345-04-6)	TLV	0,5 mg/m ³

Poland. MACs. Regulation regarding maximum permissible concentrations and intensities of harmful factors in the work environment, Annex 1

Material	Type	Value
antimony sulfide (CAS 1345-04-6)	TWA	0,5 mg/m ³

Portugal. VLEs. Norm on occupational exposure to chemical agents (NP 1796)

Material	Type	Value
antimony sulfide (CAS 1345-04-6)	TWA	0,5 mg/m ³

Slovakia. OELs. Regulation No. 300/2007 concerning protection of health in work with chemical agents

Material	Type	Value
antimony sulfide (CAS 1345-04-6)	TWA	0,5 mg/m ³

Slovenia. OELs. Regulations concerning protection of workers against risks due to exposure to chemicals while working (Official Gazette of the Republic of Slovenia)

Material	Type	Value	Form
antimony sulfide (CAS 1345-04-6)	TWA	0,5 mg/m ³	Inhalable fraction.

Spain. Occupational Exposure Limits

Material	Type	Value
antimony sulfide (CAS 1345-04-6)	TWA	0,5 mg/m ³

Sweden. OELs. Work Environment Authority (AV), Occupational Exposure Limit Values (AFS 2015:7)

Material	Type	Value	Form
antimony sulfide (CAS 1345-04-6)	TWA	0,25 mg/m ³	Inhalable dust.

UK. EH40 Workplace Exposure Limits (WELs)

Material	Type	Value
antimony sulfide (CAS 1345-04-6)	TWA	0,5 mg/m ³

Biological limit values No biological exposure limits noted for the ingredient(s).

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. If engineering measures are not sufficient to maintain concentrations of dust particulates below the OEL (occupational exposure limit), suitable respiratory protection must be worn. If material is ground, cut, or used in any operation which may generate dusts, use appropriate local exhaust ventilation to keep exposures below the recommended exposure limits. Provide eyewash station.

Individual protection measures, such as personal protective equipment

General information	Wear chemical protective equipment that is specifically recommended by the manufacturer. Personal protection equipment should be chosen according to the CEN standards and in discussion with the supplier of the personal protective equipment. Eye wash fountain is recommended.
Eye/face protection	Wear safety glasses with side shields (or goggles).
Skin protection	
- Hand protection	Wear appropriate chemical resistant gloves. Suitable gloves can be recommended by the glove supplier.
- Other	Wear appropriate chemical resistant clothing. Personal protection equipment should be chosen according to the CEN standards and in discussion with the supplier of the personal protective equipment.
Respiratory protection	Use a NIOSH/MSHA approved respirator if there is a risk of exposure to dust/fume at levels exceeding the exposure limits.
Thermal hazards	Wear appropriate thermal protective clothing, when necessary.
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. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.
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	Powder.
Physical state	Solid.
Form	Powder.
Colour	Not available.
Odour	Not available.
Odour threshold	Not available.
pH	Not available.
Melting point/freezing point	550 °C (1022 °F)
Initial boiling point and boiling range	Not available.
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	4,89 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 explosive.
Oxidising properties	Not oxidising.

9.2. Other information

Density	4,56 g/cm ³ estimated
Molecular formula	S ₃ -Sb ₂
Molecular weight	339,72 g/mol

Specific gravity 4,56

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	Contact with incompatible materials.
10.5. Incompatible materials	None known.
10.6. Hazardous decomposition products	No hazardous decomposition products are known.

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. Dusts may irritate the respiratory tract, skin and eyes. 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 partial or complete lack of data the classification is not possible.
Skin sensitisation	Due to partial or complete lack of data the classification is not possible.
Germ cell mutagenicity	Due to partial or complete lack of data the classification is not possible.
Carcinogenicity	This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.

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 sulfide (CAS 1345-04-6) 3 Not classifiable as to carcinogenicity to humans.

Reproductive toxicity	Due to partial or complete lack of data the classification is not possible.
Specific target organ toxicity - single exposure	Due to partial or complete lack of data the classification is not possible.
Specific target organ toxicity - repeated exposure	Causes damage to organs () through prolonged or repeated exposure.
Aspiration hazard	Due to partial or complete lack of data the classification is not possible.
Mixture versus substance information	No information available.
Other information	This product has no known adverse effect on human health.

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	No data available.
Partition coefficient n-octanol/water (log Kow)	Not available.
Bioconcentration factor (BCF)	Not available.
12.4. Mobility in soil	No data available.
12.5. Results of PBT and vPvB assessment	Not available.

12.6. Other adverse effects No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

12.7. Additional information

Estonia Dangerous substances in soil Data

antimony sulfide (CAS 1345-04-6)

Antimony (Sb) 10 mg/kg

Antimony (Sb) 100 mg/kg

Antimony (Sb) 20 mg/kg

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 Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

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.

Special precautions Dispose in accordance with all applicable regulations.

SECTION 14: Transport information

ADR

14.1. UN number UN1549

14.2. UN proper shipping name Antimony compound, inorganic, solid, n.o.s. (antimony sulfide)

14.3. Transport hazard class(es)

Class 6.1(PGIII)

Subsidiary risk -

Label(s) 6.1

Hazard No. (ADR) 60

Tunnel restriction code E

14.4. Packing group III

14.5. Environmental hazards No.

14.6. Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

RID

14.1. UN number UN1549

14.2. UN proper shipping name Antimony compound, inorganic, solid, n.o.s. (antimony sulfide)

14.3. Transport hazard class(es)

Class 6.1(PGIII)

Subsidiary risk -

Label(s) 6.1

14.4. Packing group III

14.5. Environmental hazards No.

14.6. Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

ADN

14.1. UN number UN1549

14.2. UN proper shipping name Antimony compound, inorganic, solid, n.o.s. (antimony sulfide)

14.3. Transport hazard class(es)

Class 6.1(PGIII)

Subsidiary risk -

Label(s) 6.1

14.4. Packing group III

- 14.5. Environmental hazards** No.
- 14.6. Special precautions for user** Read safety instructions, SDS and emergency procedures before handling.

IATA

- 14.1. UN number** UN1549
- 14.2. UN proper shipping name** Antimony compound, inorganic, solid, n.o.s. (antimony sulfide)
- 14.3. Transport hazard class(es)**
- Class** 6.1(PGIII)
- Subsidiary risk** -
- 14.4. Packing group** III
- 14.5. Environmental hazards** No.
- ERG Code** 6L
- 14.6. Special precautions for user** Read safety instructions, SDS and emergency procedures before handling.
- Other information**
- Passenger and cargo aircraft** Allowed with restrictions.
- Cargo aircraft only** Allowed with restrictions.

IMDG

- 14.1. UN number** UN1549
- 14.2. UN proper shipping name** ANTIMONY COMPOUND, INORGANIC, SOLID, N.O.S. (antimony sulfide)
- 14.3. Transport hazard class(es)**
- Class** 6.1(PGIII)
- Subsidiary risk** -
- 14.4. Packing group** III
- 14.5. Environmental hazards**
- Marine pollutant** No.
- EmS** F-A, S-A
- 14.6. Special precautions for user** Read safety instructions, SDS and emergency procedures before handling.

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

Not listed.

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. The product does not need to be labelled in accordance with EC directives or respective national laws.

National regulations

Follow national regulation for work with chemical agents.

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 applicable.

Disclaimer

Additional information is given in the Material Safety Data Sheet. Materion Advanced Chemicals Inc. cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user's responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use.

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