

Material Safety Data Sheet

acc. to OSHA and ANSI

Printing date 06/16/2009

Reviewed on 06/16/2009

1 Identification of substance:**Product details:****Product name:** Bismuth antimonide**Stock number:** A17014**Manufacturer/Supplier:**

Alfa Aesar, A Johnson Matthey Company
 Johnson Matthey Catalog Company, Inc.
 30 Bond Street
 Ward Hill, MA 01835-8099
 Emergency Phone: (978) 521-6300
 CHEMTREC: (800) 424-9300
 Web Site: www.alfa.com

Information Department: Health, Safety and Environmental Department**Emergency information:**

During normal hours the Health, Safety and Environmental Department. After normal hours call Chemtrec at (800) 424-9300.

2 Composition/Data on components:**Chemical characterization:****Description: (CAS#)**

Bismuth antimonide (CAS# 12323-19-2): 100%

Identification number(s):**Index number:** 051-003-00-9**3 Hazards identification****Hazard description:**

Xn Harmful
 N Dangerous for the environment

Information pertaining to particular dangers for man and environment

R 20/22 Harmful by inhalation and if swallowed.

R 50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment

Classification system**HMIS ratings (scale 0-4)****(Hazardous Materials Identification System)**

HEALTH	2
FIRE	0
REACTIVITY	1

Health (acute effects) = 2

Flammability = 0

Reactivity = 1

GHS label elements**Danger**

3.1/3 - Toxic if inhaled.

3.1/4 - Harmful if swallowed.

**Warning**

4.1/1 - Very toxic to aquatic life with long lasting effects.

Prevention:

Avoid breathing dust/fume/gas/mist/vapours/spray.

Wash thoroughly after handling.

Do not eat, drink or smoke when using this product.

Use only outdoors or in a well-ventilated area.

Avoid release to the environment.

Response:

IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.

IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing.

Call a POISON CENTER or doctor/physician.

Specific treatment (see label).

Rinse mouth.

Collect spillage.

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Storage:

Store in a well-ventilated place. Keep container tightly closed.
Store locked up.

Disposal:

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

4 First aid measures**After inhalation**

Supply fresh air. If required, provide artificial respiration. Keep patient warm.
Seek immediate medical advice.

After skin contact

Immediately wash with water and soap and rinse thoroughly.
Seek immediate medical advice.

After eye contact

Rinse opened eye for several minutes under running water. Then consult a doctor.

After swallowing Seek immediate medical advice.

5 Fire fighting measures**Suitable extinguishing agents**

Product is not flammable. Use fire fighting measures that suit the surrounding fire.

Special hazards caused by the material, its products of combustion or resulting gases:

In case of fire, the following can be released:

Toxic metal oxide fume

Protective equipment:

Wear self-contained respirator.

Wear fully protective impervious suit.

6 Accidental release measures**Person-related safety precautions:**

Wear protective equipment. Keep unprotected persons away.

Ensure adequate ventilation

Measures for environmental protection:

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

Measures for cleaning/collecting:

Dispose contaminated material as waste according to item 13.

Ensure adequate ventilation.

Additional information:

See Section 7 for information on safe handling

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

7 Handling and storage**Handling****Information for safe handling:**

Keep container tightly sealed.

Store in cool, dry place in tightly closed containers.

Ensure good ventilation at the workplace.

Information about protection against explosions and fires: The product is not flammable

Storage

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

Information about storage in one common storage facility: Store away from oxidizing agents.

Further information about storage conditions:

Keep container tightly sealed.

Store in cool, dry conditions in well sealed containers.

8 Exposure controls and 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.

Components with limit values that require monitoring at the workplace:

Antimony and antimony compounds

ACGIH TLV mg/m³

Austria MAK 0.5

0.5

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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-STEEL
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-STEEL
Russia TWA	0.2; 0.5-STEEL
Sweden NGV	0.5
Switzerland MAK-W	0.5
United Nations TWA	0.5
USA PEL	0.5

Additional information: No data

Personal protective equipment**General protective and hygienic measures**

The usual precautionary measures for handling chemicals should be followed.

Keep away from foodstuffs, beverages and feed.

Remove all soiled and contaminated clothing immediately.

Wash hands before breaks and at the end of work.

Breathing equipment: Use suitable respirator when high concentrations are present.**Protection of hands:**

Impervious gloves

Check protective gloves prior to each use for their proper condition.

Material of gloves

The selection of suitable gloves not only depends on the material, but also on quality.

Quality will vary from manufacturer to manufacturer.

Eye protection: Safety glasses**Body protection:** Protective work clothing.

9 Physical and chemical properties:

General Information

Form:	Crystalline
Odor:	Not determined

Change in condition

Melting point/Melting range:	Not determined
Boiling point/Boiling range:	Not determined
Sublimation temperature / start:	Not determined

Flash point: Not applicable**Ignition temperature:** Not determined**Decomposition temperature:** Not determined**Danger of explosion:** Product does not present an explosion hazard.**Explosion limits:**

Lower:	Not determined
Upper:	Not determined

Vapor pressure: Not determined**Density:** Not determined

10 Stability and reactivity

Thermal decomposition / conditions to be avoided:

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

Materials to be avoided: Oxidizing agents**Dangerous reactions** No dangerous reactions known**Dangerous products of decomposition:** Toxic metal oxide fume

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11 Toxicological information

Acute toxicity:
Primary irritant effect:

on the skin: Irritant to skin and mucous membranes.

on the eye: Irritating effect.

Sensitization: No sensitizing effects known.

Subacute to chronic toxicity:

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. Bismuth compounds are often poorly absorbed. However exposure may cause loss of appetite, headache, skin rash, exodermatitis, kidney injury and jaundice. Repeated or prolonged exposure may cause a bismuth line or black spots on the gums, foul breath and salivation. Exposure to bismuth may cause injury to the mouth, esophagus and stomach. Symptoms may include loss of appetite, headache, skin rash, kidney damage and jaundice.

Additional toxicological information:

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

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

12 Ecological information:

Ecotoxicological effects:

Remark: Very toxic for fish

General notes:

Do not allow product to reach ground water, water course or sewage system, 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.

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

Very toxic for aquatic organisms

13 Disposal considerations

Product:

Recommendation Consult state, local or national regulations to ensure proper disposal.

Uncleaned packagings:

Recommendation: Disposal must be made according to official regulations.

14 Transport information

DOT regulations:

Hazard class:

6.1

Identification number:

UN1549

Packing group:

III

Proper shipping name (technical name): ANTIMONY COMPOUND, INORGANIC, SOLID, N.O.S. (Bismuth antimonide)

Label

6.1

Land transport ADR/RID (cross-border)

ADR/RID class:

6.1 (T5) Toxic substances

Danger code (Kemler):

60

UN-Number:

1549

Packaging group:

III

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Description of goods: 1549 ANTIMONY COMPOUND, INORGANIC, SOLID, N.O.S.
(Bismuth antimonide)

Maritime transport IMDG:

IMDG Class: 6.1
UN Number: 1549
Label 6.1
Packaging group: III
Proper shipping name: ANTIMONY COMPOUND, INORGANIC, SOLID, N.O.S. (Bismuth antimonide)

Air transport ICAO-TI and IATA-DGR:

ICAO/IATA Class: 6.1
UN/ID Number: 1549
Label 6.1
Packaging group: III
Proper shipping name: ANTIMONY COMPOUND, INORGANIC, SOLID, N.O.S. (Bismuth antimonide)

UN "Model Regulation": UN1549, ANTIMONY COMPOUND, INORGANIC, SOLID, N.O.S., 6.1, III
Environmental hazards: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID

15 Regulations

Product related hazard informations:**Hazard symbols:**

Xn Harmful

N Dangerous for the environment

Risk phrases:

20/22 Harmful by inhalation and if swallowed.

50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment

Safety phrases:

61 Avoid release to the environment. Refer to special instructions/Safety data sheets

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.

Some or all of the components of this product are not listed on the Canadian Domestic Substances List (DSL) or the Canadian Non-Domestic Substances List (NDSL).

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.

16 Other information:

Employers should use this information only as a supplement to other information gathered by them, and should make independent judgement of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Material Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.

Department issuing MSDS: Health, Safety and Environmental Department.

Contact: Zachariah Holt

Abbreviations and acronyms:

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)

IMDG: International Maritime Code for Dangerous Goods

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DOT: US Department of Transportation
IATA: International Air Transport Association
IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)
ICAO: International Civil Aviation Organization
ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO)
GHS: Globally Harmonized System of Classification and Labelling of Chemicals
CAS: Chemical Abstracts Service (division of the American Chemical Society)
HMIS: Hazardous Materials Identification System (USA)

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