



5N PLUS

This Safety Data Sheet complies with EC Directives 91/155 and 1272/2008

SECTION 1. IDENTIFICATION OF THE SUBSTANCE AND THE COMPANY

Product name Antimony
Chemical formula Sb
Synonym Antimoine (French), Antimon (German)
EC # (European Chemical Substance) 231-146-5
CAS # (Chemical Abstracts Service) 7440-36-0
Use of the substance Electronic and semiconductor application
Supplier/manufacturer Firebird Technologies Inc., a division of 5N Plus Inc.
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SECTION 2. HAZARDS IDENTIFICATION

Physical state Solid (ingots, pieces)
Colour Grey (shiny)
Risk status Harmful, may provoke skin irritation
Emergency overview May provoke skin irritation; produces toxic gases when in contact with acids.
Routes of entry Inhalation, ingestion
Potential acute health effects
Eyes Redness, pain.
Skin Dry skin, dermatitis.
Inhalation Coughing, vomiting, abdominal pain, burning sensation, diarrhea.
Ingestion Irritation of the digestive tract, abdominal pain, burning sensation, diarrhea, vomiting.
Potential chronic health effects Prolonged or repetitive contact with skin may cause dermatitis, especially when exposed to fumes. This substance can affect the eyes, the lungs and the respiratory tract, and can lead to pneumoconiosis.

For toxicological information, see Section 11

SECTION 3. COMPOSITION OF/INFORMATION REGARDING CONSTITUENTS

Table with 7 columns: Name, Symbol, CAS #, EC #, IUPAC Name, Percentage (%), Classification. Row 1: Antimony, Sb, 7440-36-0, 231-146-5, None, 100, Not classified.

SECTION 4. FIRST AID

Eye contact Check for and remove any contact lenses. In the event of contact with eyes, rinse immediately with plenty of water. Get medical attention.
Skin contact In case of contact, wash affected area with soap and large amounts of water. Remove and wash any contaminated clothing. Dust may provoke skin irritation.
Inhalation If inhaled, move to fresh air. Get immediate medical attention.
Ingestion Rare in industry. If the person is unconscious, do not give anything to drink or induce vomiting. Get immediate medical attention.
Note to attending physician There is no specific antidote. Please contact poison center.

SECTION 5. FIRE FIGHTING MEASURES

Flammability of the product This product is not flammable
Products of combustion May evolve metal oxides fumes above melting point
Extinguishing media
Suitable Use an extinguishing agent suitable for the surrounding fire.
Not suitable None known
Special exposure hazards Toxic metal or irritating/toxic gases can form in the event of fire.
Special protective equipment for firefighters Firefighters should wear self-contained breathing apparatus (SCBA).

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions

Safety glasses and impervious gloves. Wear at least a P2 type particle filter respirator if the airborne concentrations are above the exposure limit. If the airborne concentrations are unknown, wear approved self-contained breathing apparatus.

Environmental precautions

Avoid dispersal of spilled material. Prevent runoff and contact with soil, waterways, drains or sewers.

Methods for cleaning-up

Vacuum the spilled material with an appropriate Class H Vacuum and place in an appropriate container for disposal in a safe place. Avoid creating dusty conditions and prevent wind dispersal.

SECTION 7. HANDLING AND STORAGE

Handling

Avoid contact with skin. Wear protective eyewear and, in the event of insufficient ventilation, a suitable breathing apparatus. Do not eat, drink, or smoke during work. Wash hands, forearms and face thoroughly after handling this product and before eating, smoking or using the lavatory.

Storage

Keep in tightly closed containers. Keep in a dry and well ventilated area. Keep away from acids.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure limits values

Product Name	8-hour total weight average (TWA) permissible exposure limit (PEL)	Short Term Exposure Limits (STELs)
Antimony	<p>AUSTRIA : 0.5 mg/m³ inhalable aerosol (as Sb)</p> <p>CANADA-QUEBEC: 0.5 mg/m³ (as Sb)</p> <p>DENMARK : 0.5 mg/m³ (as Sb)</p> <p>FRANCE : 0.5 mg/m³ (as Sb)</p> <p>GERMANY: 0.5 mg/m³ (as Sb)</p> <p>HUNGARY: 0.5 mg/m³ (as Sb)</p> <p>The NETHERLANDS : 0.5 mg/m³ (as Sb)</p> <p>POLAND : 0.5mg/m³ (as Sb)</p> <p>SWEDEN : 0.5 mg/m³ (as Sb)</p> <p>SWITZERLAND : 0.5 mg/m³ inhalable aerosol (as Sb)</p> <p>UNITED KINGDOM : 0.5 mg/m³ inhalable aerosol (as Sb)</p> <p>USA – NIOSH : 0.5 mg/m³ inhalable aerosol (as Sb)</p> <p>USA - OSHA : 0.5 mg/m³ (as Sb)</p>	<p>AUSTRIA : 1.5 mg/m³ inhalable aerosol (as Sb)</p> <p>DENMARK : 1.0 mg/m³ (as Sb)</p> <p>HUNGARY: 1.5 mg/m³ (as Sb)</p> <p>POLAND: 2 mg/m³ (as Sb)</p>

Occupational exposure controls

Environmental exposure controls

Use only in well ventilated areas. If handling generates dust, fumes, gases, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

Eye protection

Safety glasses

Skin protection

Lab coat. The choice of skin protection gear will depend on the nature of the work to perform.

Respiratory protection

If there is a risk of exceeding exposure limits, wear at least a P2 type particle filter respirator.

Hand protection

Natural rubber (latex)

Personal safety equipment pictograms



SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Solid (ingots, pieces)

Odor

Odorless

Color

Grey (shiny)

Molecular weight

121.8 g/mol

Molecular formula

Sb

Melting point

630°C

pH

Not applicable

Boiling point

1635°C

Flash point

Not applicable

Flammability

Not flammable

Oxidizing properties

Not applicable

Vapor pressure	> 1 mm/Hg @ 25°C
Relative density	6.684 g/cm ³ (Water : 1)
Solubility	
Water solubility	Insoluble
Fat solubility	Insoluble
Partition coefficient	Not available
Viscosity	Not applicable

SECTION 10. STABILITY AND REACTIVITY

Conditions to avoid	Keep away from acids.
Materials to avoid	Acids
Hazardous decomposition products	Emits toxic fumes of antimony hydride (stibine) in contact with acids.

SECTION 11. TOXICOLOGICAL INFORMATION

Toxicological data

Product/ingredient name	Test	Result	Route/Species
Antimony	LD50	7000 mg/kg	Oral / Rat

Acute effects

Eyes	Redness, pain, conjunctivitis
Skin	Dry skin, dermatitis
Ingestion	Coughing, vomiting, abdominal pain, burning sensation, diarrhea
Inhalation	Irritation of the digestive tract, abdominal pain, burning sensation, diarrhea, vomiting

Potential chronic health effects

Carcinogenicity	Not applicable
Mutagenicity	Not applicable
Teratogenic effects	Not applicable

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity data

Product/ingredient name	Species	Period	Test (LC50)
Antimony	Cyprinodon variegates	4 days	6.2 mg/L

Environmental precautions	Observe environmental regulations in place
Breakdown products	This product is insoluble in water
Toxicity of biodegradation products	Not available

SECTION 13. DISPOSAL CONSIDERATIONS

Waste disposal	The generation of waste should be avoided or minimized wherever possible. Avoid dispersal of spilled material and prevent runoff and contact with soil, waterways, drains or sewers. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional and local authority
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SECTION 14. TRANSPORTATION INFORMATION

Regulatory information	Proper shipping name	Class	UN Number	PG	Labeling
UN/IMDG/IATA Class	Not classified	Not classified	Not classified	Not classified	Not classified
ADR/RID Class	Not classified	Not classified	Not classified	Not classified	Not classified
GGVSE	Not classified	Not classified	Not classified	Not classified	Not classified

SECTION 15. REGULATORY INFORMATION

EU Regulation	<i>This chemical substance is classified as follow according to the criteria of the EC Directive 1272/2008</i>
Hazard Statements	No classification

SECTION 16. OTHER INFORMATION

References	Directive 91/155/EEC European Commission's Joint Research Centre Databases EPA Ecotox Databases
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Glossary	IDLH: Immediately dangerous to life and health. In the event of the accidental exposure to a chemical, LD50 - Indicates the dose that is lethal to 50% of an exposed group. LC50: Indicates the concentration of the chemical that is lethal to 50% of the exposed animals.
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