Safety Data Sheet (SDS)

Antimony Metal (Powder)

1.CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Substance name:	Antimony Metal (Powder)
Product name:	METAL series (Grade name described in last page)
Company name:	NIHON SEIKO CO.,LTD.
Address	3-2 SHIMOMIYABI-CHO SHINJUKU-KU TOKYO 162-0822 JAPAN
Charge section	SALES DEPT.
Phone number	+81-3-3235-0031
Fax number	+81-3-3235-0034
E-mail address	mail@nihonseiko.co.jp
Emergency telephone number	NAKASE REFINERY QUALITY ASSURANCE SECTION +81-79-667-2121
Recommended use and restriction on use:	Industrial materials: Raw materials for semiconductor, Storage battery, alloys, etc.

2.HAZARDS IDENTIFICATION

GHS classification :	
Health hazards	Carcinogenicity
GHS label:	
Hazard pictogram	
Signal word	Warning
Hazard statements	Suspected of causing cancer
Precautionary statements	【Prevention】 Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves/protective clothing/eye protection/face protection. 【Response】 If exposed or concerned: Get medical advice/attention. 【Storage】 Store locked up. 【Disposal】 Dispose of contents/container in accordance with local/regional/national/international regulations(to be specified).
Other hazard not applicable to GHS classification hazard:	No information.
The summary of important signs and assumed emergency:	No information.

NIHON SEIKO CO., LTD.

3.COMPOSITION / INFORMATION ON INGREDIENTS	
Substance/Mixture:	Substance
General product description:	Antimony
Other name:	Antimony Metal
Chemical property (Chemical formula etc):	Sb
CAS number:	7440-36-0
Component and its content:	It has indicated to the last page for every grade.
EINECS number:	231-146-5
Impurity and stabilizing additive that contribute to GHS Classification:	It has indicated to the last page for every grade.

4.FIRST AID MEASURES	
Following inhalation:	Move affected person to fresh air. If you feel sick, seek medical attention.
Following skin contact:	Wash with water and remove clothes if necessary.
Following eye contact:	Flush eyes thoroughly with water, also under eyelids.
After ingestion:	Rinse mouth with water. If you feel sick, seek medical attention.
Most important symptoms and effects ,both acute and delayed:	Acute or delayed effects are not anticipated for antimony.
Protection of person who do first aid:	No information.
Special precaution statement for doctor:	No information.

5.Fire-fighting measure	
Extinguishing media:	Use fire-fighting measures that suit the environment. The product is not combustible and does not support the combustion.
Unsuitable extinguishing media:	No information.
Special hazards arising from the Substance or mixture:	Antimony trioxide dust.
Specific fire-fighting:	Move the product to safe place promptly when it is a fire in the surrounding. If it is non-transferable, sprinkle the container and the circle with water and cool down.
Protection for fire-fighter:	Wear suitable protective equipment in fire-fighting.

6.Accidental release measures	
Personal precautions, protective equipment and emergency procedures:	Avoid formation of dust. Ensure adequate ventilation. Keep unprotected persons away. Although the substance has no acute toxicity, it is advised to avoid contact with skin, eyes, and clothing – wear suitable protective equipment. Avoid inhalation of dust.
Environmental precautions:	It is advised that in the event of an accidental release the product should be prevented from reaching the sewage system or any water course and penetrating the soil. Dispose of spilled material in accordance with the relevant regulations.
Methods and material for containment and cleaning up:	In any case avoid dust formation. Sweep all spilled material or use an appropriate industrial vacuum cleaner. Collect spilled material in suitable containers or closed plastic bags for recovery or disposal.

Prevention of second disaster:	For more information on exposure controls/personal protection or disposal considerations, check section 8 and 13 of this safety data sheet.

7.Handling and storage

Handling:	
Technological countermeasure (local ventilation/ General Ventilation etc)	Provide a local dust collection system in the places where dust can be generated. Provide dust protective mask in the handling position.
Safety precaution	Do not handle until all safety precautions have been read and understood. Work by wearing suitable protective equipment.
Avoid contact	Check section 10.
Hygiene measure	Avoid inhalation or ingestion. General occupational hygiene measures are required to ensure a safe handling of the substance. These measures involve good personal and housekeeping practices (i.e. regular cleaning with suitable cleaning devices). No eating, drinking and smoking at the workplace. Wash hands after use. Remove contaminated clothing and protective equipment before entering eating areas. Shower and change clothes at end of work shift. Do not bring contaminated clothing at home. Do not blow dust off with compressed air.
Storage:	
Safety storage condition	Store in well ventilated dry area with low humidity and sealed state.
Safety packaging material	Establish whether the container conforms test standard on a voluntary basis.

8.EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure control limits	
Effect of over exposure:	
ACGIH(2024)	0.5mg/m^3 TLV-TWA (Antimony and compounds, as Sb)
Engineering controls:	Prevent formation of dust where possible. Ensure appropriate ventilation/exhaustion at machinery and places where dust can be generated. Any deposit of dust which cannot be avoided must be regularly removed using preferably appropriate industrial vacuum cleaners or central vacuum systems. Waste air is to be released into the atmosphere only when it has passed through suitable dust separators. Waste water generated during the production process or cleaning operations should be collected and should preferably be treated in an on-site waste water treatment plant which ensures efficient removal of antimony.
Personal protective equipment:	
Respiratory protection	Dust protective mask(As appropriate)
Hand protection	Protective gloves
Eye protection	Protective glasses
Skin and body protection	Protective high boots and cloth
Special precaution statement	Avoid environmental discharge.

9.PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	
Physical state	Solid
Figure	Powder
Color	Black

Odor:	Odorless
Melting point:	630 °C
Initial boiling point and boiling range:	1380 °C
Flammability:	Non-flammable. This substance does not contain any chemical groups that might lead to spontaneous ignition a short time after coming in contact with air at room temperature (circa 20°C). Furthermore, long-term industrial experience in handling shows that the substance does not ignite in contact with air.
Upper/lower flammability or explosive limits:	Non explosive. Antimony exhibits no chemical groups indicating explosive properties.
Flash point:	Not applicable as only relevant for liquids or low melting point solids.
Auto-ignition temperature:	No data.
Decomposition temperature:	It does not decompose.
pH:	Not applicable to solids.
kinematic viscosity:	No information.
Solubility(ies):	18.2 mg/l (20°C -ISO 6341 medium-loading 2g Sb/l-pH 4.6)
Partition coefficient n-octanol/water:	No information.
Vapor pressure:	1.66mmHg (800 °C)
Relative density:	6.7
Relative vapour density:	No information.
Particle characteristics:	No information.
Other:	No information.

10.STABILITY AND REACTIVITY

Reactivity:	No information.
Chemical stability:	Under normal conditions of use and storage, the product is stable.
Possibility of hazardous reactions:	Reaction with H^--equivalents releases antimony hydride (stibine, SbH_3). When heated in air, it burns with a blue flame and antimony trioxide is generated. Antimony pentachloride is generated and catch fire if Antimony meets chlorine. If Antimony reacts with bromine and iodine, it reacts violently at ordinary temperatures. Sulfur dioxide is generated if it meets hot sulfuric acid. The mixture of antimony powder and nitrate salt has the quality of explosiveness. Antimony reacts with salt of permanganic acid and antimonate is generated.
Conditions to avoid:	Avoid dust formation and high temperature
Incompatible materials:	Reaction with H^--equivalents releases antimony hydride (stibine, SbH_3). Hot sulfuric acid. Halogen. Nitrate salt. Salt of permanganic acid. Strong acids/bases. Reducing agents.
Hazardous decomposition products:	Not applicable.
Other:	No information.

11.TOXICOLOGICAL INFORMATION

Acute Toxicity (Oral):	Based on read-across from antimony trioxide, antimony does not require a classification. LD_{50} rat > 20,000 mg/kg bw (Antimony trioxide) (Fleming, 1938; Gross et al, 1955; Weil et al, 1978)
Acute Toxicity (Dermal):	Based on read-across from antimony trioxide, antimony does not require a classification. LD_{50} rabbit > 8,300 mg/kg bw (Gross et al, 1955) (Antimony trioxide)
Acute Toxicity (Inhalation: dust/mist):	Based on read-across from antimony trioxide, antimony does not require a classification. LC_{50} rat> 5,200 mg/m³ (Leuschner, 2006) (Antimony trioxide)
Acute Toxicity (Inhalation: fume/vapors):	Out of category to solids.
Skin corrosion/irritation:	Causes mild skin irritation. Especially can cause dermatitis on contact with sweat-damp region over again or prolonged contact. Dermatitis that known as “antimony spots” can cause rash after itchiness.
Serious eye danger/irritation:	Antimony trioxide is not irritating to eyes.(Leuschner, 2005) Based on read-across from antimony trioxide, antimony does not require a classification.
Respiratory or skin sensitization:	Not skin sensitizing (Chevalier, 2005; Moore, G.E, 1994) /no respiratory sensitizer. Based on read-across from antimony trioxide, antimony does not require a classification. Based on read-across from antimony trioxide, antimony does not require a classification.
Germ cell mutagenicity:	Antimony trioxide does not cause systemic mutagenicity in vivo after oral administration. Negative in vivo results on chromosome aberrations and micronuclei were obtained in two different species via oral application – mouse (Elliot et al., 1998) and rat (Whitwell, 2006), (Kirkland et al., 2007). Based on read-across from antimony trioxide, antimony does not require a classification.
Carcinogenicity:	Antimony trioxide is classified as inhalation carcinogen category 2. Based on read across from antimony trioxide, antimony powder gets the same carcinogen classification, and is classified as inhalation carcinogen category 2.
Japan Society for Occupational Health	Not classified as carcinogen.
ACGIH	Not classified as carcinogen.
EPA	Not classified as carcinogen.
NTP	Not classified as carcinogen.
EU	Not classified as carcinogen.
IARC	Not classified as carcinogen.
Reproductive toxicity:	Based on the available long-term toxicity studies in rodents (Omura et al, 2002) and the relevant information on the toxicokinetic behavior in rats, it is concluded that antimony trioxide does not present a reproductive toxicity hazard. Based on read-across from antimony trioxide, antimony does not require a classification.
STOT single exposure:	Antimony trioxide is not classified as STOT, single exposure. Based on read-across from antimony trioxide, antimony does not require a classification.
STOT repeated exposure:	Antimony trioxide is not classified as STOT, repeated exposure. Based on read-across from antimony trioxide, antimony does not require a classification.
Aspiration hazard:	Classification not possible, because of a lack of information.

Other:	No information.

12.ECOLOGICAL INFORMATION

Ecotoxicity:	Classification not possible, because of a lack of information.
Persistence and degradability:	No information.
Bioaccumulative potential:	No information.
Mobility in soil:	No information.
Hazardous to the ozone layer:	No information.
Other:	No information.

13.DISPOSAL CONSIDERATIONS

Waste from residues:	Dispose of contents in accordance with local/regional/national /international regulations(to be specified).
Contaminated container/packing:	Dispose of container in accordance with local/regional/national /international regulations(to be specified).

14.TRANSPOT INFORMATION

International regulation:	
UN code	2871
Proper shipping name	Antimony powder
UN Class	6.1
Packing group	Ⅲ
Marine pollutant	Not applicable.

15.REGULATORY INFORMATION

Worldwide chemical inventories:	
ENCS(Japan)	Not listed
TSCA(USA)	Listed
ECL(Korea)	KE-01834
DSL(Canada)	Listed
PICCS(Philippines)	Listed
AICS(Australia)	Listed
IECSC(China)	Listed
NECI(Taiwan)	Listed
Other regulatory information:	Follow regulation and low of each country or region.

16. OTHER INFORMATION

Treatment of stated contents:	The contents of this information sheet are based on the data, information available at moments, and may be revised by additional dat a coming up in future. The precautions mentioned in this sheet are intended for normal use of this material, when use in unusual manner, the proper safety method is required. Read this SDS before use the ingredients. Keep this SDS in your file for your timely reference. The contents of this information sheet are not warranted and the company can accept no liability to any customer or any other person.
References:	1.GHS taiou guideline Edit: Japan Chemical Industry Association Issuance: Japanese Standards Association 2.Antimony SDS form of International Antimony Association (i2a) 3.【Kaiteidai3ban】Kinkyujioukyusochishishin Issuance: Japanese Standards Association 4.National Institute of Technology and Evaluation (NITE)_ Chemical Risk Information Platform (CHRIP)_Antimony

	5.OECD-SIAM(October 14-16. 2012)SIDS Initial Assessment Profile 6.TRANSPORT OF DANGEROUS GOODS Model Regulations 7. Kagakubusshitsu Anzensei Data Book The Chemical Substance Safety Information Workshop 8.Shokubanoanzen site: GHS taiou model label・model MSDS Jouhou: Antimony Ministry of Health, Labour and Welfare (Japan) 9.Muki kagaku zensho.IV-4 MARUZEN CO., LTD. 10.Sangyouigaku vol.33 1991

Each Antimony Metal grades of purity and impurity content.

	METAL-P	METAL-H 3N (Only powder)
Sb(%)	99.8	99.9
As(%)	0.04	0.02
Pb(%)	0.06	0.04