GHS Safety Data Sheet

SDS No.: BII04PAEG Date Issued: 2019/04/05

Section 1. Identification of the substance or mixture and of the supplier

Product Information

Product name: Bi₂Se₃ Bismuth selenide

Product number:	Purity	Form	Size(mm) or Shape	
BII09PB	99.9%(3N)	powder	_	
BII10GB	3N	lumps	_	
_	3N	target	Various shapes, Various sizes	

Company Information:

Manufacturer: Kojundo Chemical Laboratory Co., Ltd.

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Recommended uses and restrictions on use: For research purposes

Section 2. Hazards identification

GHS Classification

This GHS classification utilized "CLP classification" results as reference.

CLP classification; The classification and categorization adopted in CLP(Regulation on Classification,

Labelling and Packaging of Substances and Mixtures, Regulation(EC)1272/2008)

Health Hazards	Environmental Hazards	Physical Hazards	
Acute toxicity(Oral): Category 3 Acute toxicity(Inhalation): Category 3 Specific target organ toxicity, repeated exposure: Category 2	Hazardous to the aquatic environment, Acute toxicity: Category 1 Chronic toxicity: Category 1	Flammable solids: Not classified Pyrophoric solids: Not classified Self-heating substances and mixtures: Not classified Substances and mixtures which, in contact with water, emit flammable gases: Not classified	

GHS Label: T, C, V







Pictograms or symbols:

Warning word: DANGER					
Hazard information	Description of precaution				
Toxic if swallowed Toxic if inhaled May cause damage to organs through prolonged or repeated exposure Very toxic to aquatic life Very toxic to aquatic life with long lasting effects	Avoid breathing dust/mist/gas/fume/vapors/spray. Do not eat, drink or smoke when using this product, and wash hands thoroughly after handling. Use only outdoors or in well-ventilated area. Avoid release to the environment and collect spillage. IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. Rinse mouth. Immediately call a POISON CENTER or doctor/physician. Call a POISON CENTER or doctor/physician if you feel unwell. Protect from sunlight. Store in a cool, dry and well-ventilated place. Keep container tightly closed. Store locked up. Dispose of contents/ container in accordance with local/national regulations.				



Section 3. Composition / information on ingredients

Chemical or common name: Bismuth selenide

Chemical formula: Bi₂Se₃

Single Substance or Compound: Single substance

Composition: 100%
CAS #: 12068-69-8
RTECS#: not listed
TSCA inventory: listed
EINECS: 2351047

Section 4. First aid measures

Eye contact: Promptly wash eyes with plenty of water while lifting the eye lids.

Continue to rinse for at least 15 minutes and get medical attention.

Skin contact: Promptly flush contaminated skin with soap or mild detergent and water.

Contact physician if irritation continues.

Inhalation: Remove the exposed person immediately and provide fresh air.

Get medical attention.

Ingestion: Rinse mouth and throat with water. Get medical attention immediately.

Section 5. Fire fighting measures

Extinguishing media:

Use media appropriate for surrounding fire.

Fire fighting: The product is not combustible.

In case of fire, the product may liberate toxic gases/ fume.

Self-contained breathing apparatus and full protective clothing should be used, if

the material is involved in fire

Section 6. Accidental release measures

Personal Precautions:

Workers should use protective wears to prevent contact with the spilt adhesive and inhalation of its vapor/dusts.

Environmental hazard precautions:

Shut off leak if without risk.

Prevent flow out to river, etc. so as not to badly affect.

Method for containment and cleaning up:

Avoid unnecessary contacts with spills.

Indoor leakage: Ventilate as much as possible until the cleaning is completed. Outdoor leakage: Work from the windward and evacuate the leeward crowd.

Gather up, pack in closed container as much as possible.

Carefully collect remnant and move to a safe place.

Section 7. Handling and storage

Precautions to be taken in handling:

Safe handling: Use protective wears and local ventilation equipment, if inhalation or skin

contact is foreseen.

Avoid prolonged or repeated exposure.

Precautions to be taken in storage:

General precautions: Store the material in a sealed container.

Store in a cool, dry, well ventilated and dark place away from incompatible



Section 8. Exposure controls / personal protection

Exposure guideline: ACGIH(2013): Selenium and compounds (as Se) TLV-TWA 0.5 mg/m³

OSHA(2006): Selenium and compounds (as Se) PEL-TWA 0.5 mg/m³

Facility measures: Local ventilation of closed work room or total proper ventilation to prevent

inhalation.

Protective ware: Wear appropriate NIOSH/MSHA-approved respirator, safety goggles,

protective gloves.

Section 9. Physical and chemical properties

Appearance: Black solid Chemical formula: Bi₂Se₃ Formula weight: 654.8

Melting point: 710 °C (decomposes)

Density: 7.5 g/cm³ Solubility in water: Insoluble

Flammability: Non-combustible substance

Oxidation: None

Section 10. Stability and reactivity

Stability: Stable in closed container.

Reactvity

Incompatibility: No data available.

Condition to avoid: Heat

Hazardous decomposition products:

Selenium, selenium compounds

Section 11. Toxicological information

Acute toxicity(Oral): GHS : Category 3 ; Toxic if inhaled Acute toxicity(Inhalation): GHS : Category 3 ; Toxic if inhaled

Skin corrosive / irritation:

Serious eye damage / irritation:

Respiratory sensitization:

Skin sensitization:

GHS: No data available

Carcinogenicity:

GHS: No data available

Carcinogenicity:

	ACGIH	IARC	NTP
Chemical Name	(2013)	(2018)	(2016)
Selenium and compounds	_	3	_

IARC(2018) group 3: The agent is not classifiable as to its carcinogenicity to humans.

Reproductive toxicity: GHS: No data available

Specific target organ toxicity

-single exposure: GHS: No data available-repeated exposure: GHS: Category 2;

May cause damage to organs through prolonged or repeated

exposure

Aspiration hazard: GHS: No data available



Section 12. Ecological information

Ecotoxicity:

Hazardous to the aquatic environment

-acute toxicity: GHS: GHS: Category 1; Very toxic to aquatic life

-chronic toxicity: GHS: Category 1;

Very toxic to aquatic life with long lasting effects

4/4

Hazardous to the ozone layer GHS: No data available

No Freon or Halon

Fish toxicity:

Degradability:

Bioaccumulative potential:

Mobility in soil:

No data available

No data available

No data available

Section 13. Disposal considerations

Disposal method: User of the product should contract with the local government or licensed

'Industrial Waste Haulers' for disposal of waste.

Section 14. Transport information

UN number: 3283

IATA shipping name: SELENIUM COMPOUND, SOLID, N.O.S.

IATA hazard class: Class 6.1 (Toxic substances)

IATA packing group: III
HS code: 2842.90
Marine pollution: Yes

Section 15. Regulatory information

TSCA inventory: listed.

Please refer to any other local / national measures that may be relevant.

Section 16. Other information

The information described above is believed to be correct. However, Kojundo Chemical Lab. makes no representation, warranty nor guarantee of any kind with respect to the information on this data sheet or any use of the product based upon this information.

