SAFETY DATA SHEET
ZINC SELENIDE

1. IDENTIFICATION

1.1 PRODUCT IDENTIFIERS

Product Name: Zinc Selenide

Synonyms, Trade Names: ZnSe

1.2 RELEVANT IDENTIEFIED USES OF THE SUBSTANCE OR MIXTURE

Identified Uses: Optical material for manufacturing of Optical Components

1.3 DETAILS OF SUPPLIER OF THE SAFETY DATA SHEET

Company: American Photonics, Inc.
6621 19th Street East
Sarasota, FL 34243
(941) 752-5811

1.4 EMERGENCY TELEPHONE NUMBER

Emergency Phone: (941) 752-5811

Emergency Action: In the event of a medical enquiry involving this product, please contact your doctor or local hospital accident and emergency department.

2. HAZARDOUS IDENTIFICATION

2.1 CLASSIFICATION OF THE SUBSTANCE OR MIXTURE

Toxic by ingestion and inhalation with a danger of cumulative effects. Liberates highly toxic hydrogen selenide in contact with gastric juices. Dermatitis may result from prolonged contact. Particular care must be exercised when machining and creating dust or particles. Symptoms include garlic odor on breath. Dangerous for the environment.

Health	3
Flammability	0
Physical Hazard	1
Personal Protection	B




2.2 LABEL ELEMENTS

H301 Toxic if swallowed
H331 Toxic if inhaled
H410 Very toxic to aquatic life with long lasting effects

Precautionary Statements:

P262 Do not breath dust / fumes / gas / mist / vapors / spray
P264 Wash thoroughly after handling
P270 Do not eat, drink or smoke when handling this product
P273 Avoid release to the environment
P301+P310 IF SWALLOWED: Immediately call a poison center or doctor. Rinse mouth.
P304+P312 IF INHALED: Call a poison center or doctor / physician if you feel unwell.

2.3 OTHER HAZARDS

None

3. COMPOSITION / INFORMATION ON INGREDIENTS

3.1 SUBSTANCES

Component Name	CAS Number	Percentages are by weight
Zinc Selenide	1315-09-9	>99%

4. FIRST AID MEASURES

4.1 DESCRIPTION OF FIRST AID MEASURES

GENERAL: Consult a doctor for specific advice

EYES: Irrigate thoroughly with water for at least 15 minutes.
If discomfort persists, obtain medical attention

SKIN: Wash thoroughly with soap and water. Dry area with clean towel.
Remove contaminated clothing and wash clothing before re-use.

INHALATION Move exposed to fresh air. Obtain medical attention

INGESTION: Wash out mouth thoroughly with water and give 2 cups of water to drink. In severe cases obtain medical attention.

4.2 MOST IMPORTANT SYMPTOMS AND EFFECTS, BOTH ACUTE AND DELAYED

Refer to Section 2.2 and to Section 11

4.3 INDICATION OF ANY IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT NEEDED

No data

5. FIRE FIGHTING MEASURES

5.1 EXTINGUISHING MEDIA

This product is not flammable.

5.2 SPECIAL HAZARDS ARISING FROM THE SUBSTANCE OR MIXTURE

Material may evolve toxic fumes in a fire, decomposition at temperatures greater than 400°C (752°F) in an inert atmosphere. The material sublimes into zinc & selenium fumes.

5.3 ADVICE FOR FIREFIGHTERS

Use breathing apparatus if necessary

6. ACCIDENTAL RELEASE MEASURES

6.1 PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCUDURES

Wear suitable protective clothing & equipment as listed under Section 8. Avoid making dust.

6.2 ENVIRONMENTAL PRECAUTIONS

Prevent further leakage or spillage. Do not let product enter drains. Do not discharge to the environment.

6.3 METHODS AND MATERIALS FOR CONTAINMENT AND CLEANING UP

Take up and containerize for proper disposal. Containerize any cleaning materials used for proper disposal.

6.4 REFERENCE TO OTHER SECTIONS

Dispose as in Section 13. Personal protection see Section 8.

7. HANDLING AND STORAGE

7.1 PRECAUTIONS FOR SAFE HANDLING:

Minimize dust generation and accumulation. Follow good hygiene prodcedures when handling chemical materials. Refer to Section 8. Keep away from food, drink, and animal feeding. Keep container tightly sealed when not in use.

7.2 CONDITIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATIBILITIES

Keep away from food and drinks. Keep away from acids and stong bases.

7.3 SPECIFIC END USES

The identified uses for this product are detailed in Section 1.2

8. EXPOSURE CONTROL AND PERSONAL PROTECTION

8.1 CONTROL PARAMETERS

ACGIH TLV (United States 1/2009)

OCCUPATIONAL EXPOSURE LIMITS (OEL): 0.1mg/m³ as Se 8 hour Time Weighted Average (TWA).

8.2 EXPOSURE CONTROLS

Protective gloves made of PVA are required. Use of a laboratory coat is suggested. Safety goggles or safety glasses with side shields are required if there is any possiblity of chipping or dust creation. Respirators must be worn when the threshold limit is exceeded. Provide adequate general mechanical ventilation, and local exhause ventilation. Wash hands immediately after handling the product.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 INFORMATION ON BASIC PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE:	Reddish-yellow geometric shapes
ODOR:	No Odor
BOILING POINT:	Not applicable
MELTING POINT:	1525°C (2777°F)*
AUTO/SELF-IGNITE TEMP	Not applicable
FLASH POINT:	Not applicable
FLAMMABILITY:	Not applicable
RELATIVE DENSITY:	5.27 g/mL
SOLUBILITY IN WATER:	Practically Insoluble
pH-value:	Not Determined
Explosive Properties:	Not applicable

9.2 OTHER SAFETY INFORMATION

* Oxidizes at 300°C (572°F), exhibits plastic deformation at 500°C (932°F) and dissociates at about 700°C (1292°F)

10. STABILITY AND REACTIVITY

10.1 REACTIVITY:

Reacts with strong mineral acids and strong oxidizing materials.

10.2 CHEMICAL STABILITY

Stable under normal conditions of storage and use.

10.3 POSSIBLITY OF HAZARDOUS REACTIONS

None known

10.4 CONDITIONS TO AVOID:

Can react with oxidizing agents. Avoid strong acids.

10.5 INCOMPATIBLE MATERIALS:

Strong mineral acids. Strong oxidizing agents.

10.6 HAZARDOUS DECOMPOSITION PRODUCTS:

Decomposition product is Hydrogen Selenide gas.

11. TOXICOLOGICAL INFORMATION

11.1 ACUTE TOXICTY:

ORAL:	LD50 >5 g/kg
CHRONIC TOXICTY:	No additional information
CORROSION IRRITATION:	No additional information
SENSITIZATION:	No additional information
SINGLE TARGET ORGAN:	No additional information
NUMERICAL MEASURES:	No additional information
CARCINOGENICITY:	No evidence of carcenogic properties
MUTAGENICITY:	No additional information
REPRODUCTIVE TOXICTY:	Some evidence of reproductive effects.

12. ECOLOGICAL INFORMATION

12.1 TOXICITY:	Danger to drinking water. Poisonous to fish.
12.2 PERSISTENCE AND DEGRADABILITY	No data
12.3 BIOACCUMULATIVE POTENTIAL:	No data
12.4 MOBILITY IN SOIL:	No data
12.5 RESULTS OF PBT AND vPvB ASSESSMENT	Not required or conducted.
12.6 OTHER ADVERSE EFFECTS:	Do not allow product to reach ground water, water course or sewage system. Only release to environment with proper government permit.

13. DISPOSAL CONSIDERATIONS

13.1 Chemical residues are generally classified as special waste and are covered by regulations which vary according to location. Contact your local waste disposal authority for advice, or pass to a chemical disposal company.

14. TRANSPORT INFORMATION

14.1	**UN NUMBER:**	3283
14.2	**UN PROPER SHIPPING NAME:**	Selenium Compound, Solid, N.O.S. (Zinc Selenide)
14.3	**TRANSPORT HAZARD CLASS:**	6.1
14.4	**PACKING GROUP:**	III
14.5	**ENVIRONMENTAL HAZARDS:**	Marine Pollutant
14.6	**SPECIAL PRECAUTIONS FOR USER:**	None
14.7	**TRANSPORT IN BULK:**	No data

15. REGULATORY INFORMATION

15.1 UNITED STATES (US)

SARA Section 302/304 (Specific toxic chemical listings):

None of the ingredients are listed or exempt.

SARA Section 313/312 (Specific toxic chemical listings):

Acute health hazard, Chronic health hazard.

SARA (Title 313:

Zinc Selenide

TSCA (Toxic Substances Control Act):

All ingredients are listed

CERCLA:

Not applicable

WHMIS:

This is a controlled product under the Canadian Workplace Hazardous Materials Information System.

15.2 PROPOSITION 65 (California)

Chemicals known to cause cancer:	None
Chemicals known to cause reproductive toxicity for females:	None
Chemicals known to cause reproductive toxicity for males:	None
Chemicals known to cause developmental toxicity:	None

16. OTHER INFORMATION

16.1 The above information is believed to be correct, but does not purport to be all inclusive and must be used only as a guide.

16.2 REVISION DATE: 03.23.2020