

SAFETY DATA SHEET

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SECTION 1. IDENTIFICATION

Product Name: Manganese-Doped Zinc Selenide Quantum Dots

Product Number: All applicable American Elements product codes, e.g. ZNSE-MN-01-QD.600E , ZNSE-MN-01-QD.620E

CAS #:

Relevant identified uses of the substance: Scientific research and development

Supplier details:

American Elements
10884 Weyburn Ave.
Los Angeles, CA 90024
Tel: +1 310-208-0551
Fax: +1 310-208-0351

Emergency telephone number:

+1 800-424-9300

SECTION 2. HAZARDS IDENTIFICATION

Classification

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Acute oral toxicity: Category 3

Specific target organ toxicity - (repeated exposure): Category 2

Label Elements

Signal Word:

Danger

Hazard Statements:

Toxic if swallowed

May cause damage to organs through prolonged or repeated exposure



Precautionary Statements

Prevention:

Wash face, hands and any exposed skin thoroughly after handling
Do not eat, drink or smoke when using this product
Do not breathe dust/fume/gas/mist/vapors/spray

Response:

Get medical attention/advice if you feel unwell

Ingestion:

IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician

Rinse mouth

Storage:

Store locked up

Disposal:

Dispose of contents/container to an approved waste disposal plant

Hazards not otherwise classified (HNOC)

Very toxic to aquatic life with long lasting effects

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Component/CAS-No:

Zinc selenide/1315-09-9

Manganese/7439-96-5

Water/7732-18-5

SECTION 4. FIRST AID MEASURES

Eye Contact:

Immediate medical attention is required. Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.

Skin Contact:

Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Immediate medical attention is required.

Inhalation:

Remove from exposure, lie down. Move to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Immediate medical attention is required.

Ingestion:

Call a physician immediately. Clean mouth with water.

Most important symptoms and effects:

No information available.

Notes to Physician:

Treat symptomatically

SECTION 5. FIREFIGHTING MEASURES

Suitable Extinguishing Media:

Water spray. Carbon dioxide (CO₂). Dry chemical. Chemical foam.

Unsuitable Extinguishing Media: No information available

Flash Point: No information available

Method - No information available

Autoignition Temperature

Explosion Limits

Upper: No data available

Lower: No data available

Sensitivity to Mechanical Impact: No information available

Sensitivity to Static Discharge: No information available

Specific Hazards Arising from the Chemical:

Do not allow run-off from fire fighting to enter drains or water courses.

Hazardous Combustion Products:

None known

Protective Equipment and Precautions for Firefighters:

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

NFPA

Health

3

Flammability

Instability

Physical hazards

N/A

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal Precautions:

Ensure adequate ventilation. Use personal protective equipment.

Environmental Precautions:

Do not flush into surface water or sanitary sewer system. Do not allow material to contaminate ground water system. Prevent product from entering drains. Local authorities should be advised if significant spillages cannot be contained. See Section 12 for additional ecological information. Avoid release to the environment. Collect spillage.

Methods for Containment and Clean Up:

Avoid dust formation. Sweep up or vacuum up spillage and collect in suitable container for disposal.

SECTION 7. HANDLING AND STORAGE

Handling:

Do not breathe dust. Do not get in eyes, on skin, or on clothing. Use only in area provided with appropriate exhaust ventilation.

Storage:

Keep in a dry, cool and well-ventilated place. Keep container tightly closed. Keep under nitrogen.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines

Component: Zinc selenide (ZnSe)

ACGIH TLV: TWA: 0.2 mg/m³

OSHA PEL: (Vacated) TWA: 0.2 mg/m³

NIOSH IDLH: IDLH: 1 mg/m³ TWA: 0.2 mg/m³

Mexico OEL (TWA): TWA: 0.2 mg/m³

Engineering Measures: Ensure adequate ventilation, especially in confined areas

Personal Protective Equipment

Eye/face Protection:

Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin and body protection:

Wear appropriate protective gloves and clothing to prevent skin exposure.

Respiratory Protection:

Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149.

Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Hygiene Measures:

Handle in accordance with good industrial hygiene and safety practice.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State: Dispersion

Odor: N/A

Odor Threshold: N/A

pH: N/A

Melting Point/Range: N/A

Boiling Point/Range: N/A

Flash Point: N/A

Evaporation Rate: N/A

Flammability (solid,gas): N/A

Flammability or explosive limits

Upper: N/A

Lower: N/A

Vapor Pressure: N/A

Vapor Density: N/A

Specific Gravity: N/A

Solubility insoluble

Partition coefficient; n-octanol/water: N/A

Autoignition Temperature
Decomposition Temperature: N/A
Viscosity: N/A
Molecular Formula: N/A
Molecular Weight: N/A

SECTION 10. STABILITY AND REACTIVITY

Reactive Hazard: None known, based on information available
Stability: Moisture sensitive. Air sensitive.
Conditions to Avoid: Exposure to air. Incompatible products. Exposure to moist air or water.
Incompatible Materials: Strong oxidizing agents, Strong acids
Hazardous Decomposition Products: None under normal use conditions
Hazardous Polymerization: No information available.
Hazardous Reactions: None under normal processing.

SECTION 11. TOXICOLOGICAL INFORMATION

Acute Toxicity
Product Information:
Component Information:
Toxicologically Synergistic Products: No information available
Delayed and immediate effects as well as chronic effects from short and long-term exposure

Irritation: No information available
Sensitization: No information available

Carcinogenicity:
Component: Zinc selenide (ZnSe)
CAS-No: 1315-09-9
IARC: Not listed
NTP: Not listed
ACGIH: Not listed
OSHA: Not listed
Mexico: Not listed

Reproductive Effects: No information available.
Developmental Effects: No information available.
Teratogenicity: No information available.
STOT - single exposure None known
STOT - repeated exposure None known
Aspiration hazard: No information available
Symptoms / effects, both acute and delayed: No information available
Endocrine Disruptor Information: No information available
Other Adverse Effects: The toxicological properties have not been fully investigated.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity
Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Persistence and Degradability:
Insoluble in water

Bioaccumulation/ Accumulation:
No information available.

Mobility:
Is not likely mobile in the environment due its low water solubility.

SECTION 13. DISPOSAL CONSIDERATIONS

Waste Disposal Methods:
Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

SECTION 14. TRANSPORT INFORMATION

DOT (US)
UN number: 3082
Class:9
Packing group:III
IMDG
UN number: 3082
Class:9
Packing group:III
EMS-No:
F-A, S-F
Proper shipping name:
ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.(Zinc selenide dispersion)
Marine pollutant:
Marine pollutant
IATA
UN number: 3082
Class: 9
Packing group: III
Proper shipping name:
Environmentally hazardous substance, liquid, n.o.s.(Zinc selenide dispersion)
Further information
EHS-Mark required (ADR 2.2.9.1.10, IMDG code 2.10.3) for single packagings and combination packagings containing inner packagings with Dangerous Goods > 5L for liquids or > 5kg for solids

SECTION 15. REGULATORY INFORMATION

International Inventories
Component: Zinc Selenide
TSCA: X
DSL: -
NDSL: X
EINECS: 215-259-7

ELINCS: -
NLP:
PICCS: -
ENCS: X
AICS: -
IECSC: X
KECL: X

U.S. Federal Regulations
TSCA 12(b): Not applicable
SARA 313: Not applicable
Component: Zinc Selenide
CAS-No: 1315-09-9
Weight: 99.99%
SARA 313 - Threshold Values: 1.0%
SARA 311/312 Hazard Categories: See section 2 for more information

CWA (Clean Water Act)
Component: Zinc Selenide
CWA - Hazardous SubstancesP: -
CWA - Reportable Quantities: -
CWA - Toxic Pollutants: X
CWA - Priority Pollutants: -

Clean Air Act
Component: Zinc Selenide
HAPS Data: X
Class 1 Ozone Depletors
Class 2 Ozone Depletors: -

OSHA: Not applicable
CERCLA: Not applicable
California Proposition 65: This product does not contain any Proposition 65 chemicals

U.S. State Right-to-Know Regulations:
Component: Zinc Selenide
Massachusetts: -
New Jersey: X
Pennsylvania: X
Illinois: X
Rhode Island: X

U.S. Department of Transportation:
Reportable Quantity (RQ): N
DOT Marine Pollutant N
DOT Severe Marine Pollutant N

U.S. Department of Homeland Security:
This product does not contain any DHS chemicals.

Other International Regulations
Mexico-Grade: No information available

SECTION 16. OTHER INFORMATION

Safety Data Sheet according to Regulation (EC) No. 1907/2006 (REACH). The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. American Elements shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale. COPYRIGHT 1997-2022 AMERICAN ELEMENTS. LICENSED GRANTED TO MAKE UNLIMITED PAPER COPIES FOR INTERNAL USE ONLY.