SAFETY DATA SHEET

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SECTION 1. IDENTIFICATION

Product Name: Zinc Tin Phosphide Granule

Product Number: All applicable American Elements product codes, e.g. ZN-SNP-02-GR , ZN-SNP-03-GR , ZN-SNP-04-GR , ZN-SNP-05-GR

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

Hazardous Components (Chemical Name): Tin Phosphide
CAS No. 25324-56-5
Concentration: 0.0 -100.0 %
OSHA PEL: 2 mg(Sn)/m3
ACGIH TLV: 2 mg(Sn)/m3
Other Limits: NE



Hazard statement
In contact with water releases flammable gases which may ignite spontaneously. Toxic if swallowed. Causes severe skin burns and eye damage. Causes serious eye damage. Toxic if inhaled. May cause drowsiness or dizziness. Harmful to aquatic life with long lasting effects.
Precautionary statement
Prevention: Do not allow contact with water. Handle under inert gas. Protect from moisture. Avoid breathing dust. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Avoid release to the environment. Wear protective gloves/protective clothing/eye protection/face protection.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Zinc Tin Phosphide Powder
Formula: ZnSnP2

SECTION 4. FIRST AID MEASURES

INHALATION: Remove victim to fresh air; keep warm and quiet; give oxygen if breathing is difficult and seek medical attention immediatley.
INGESTION: Give 1-2 glasses of milk or water and induce vomiting; seek medical attention immediatley. Never induce vomiting or give anything by mouth to an unconscious person.
SKIN: Remove contaminated clothing; brush material off skin; wash affected area with mild soap and water; seek medical attention.
EYE: Flush eyes with lukewarm water, lifting upper and lower eyelids, for at least 15 minutes. Seek medical attention.

SECTION 5. FIREFIGHTING MEASURES

FLASH PT: N.A.
Method Used: Unknown
LEL: NE
UEL: NE
EXPLOSIVE LIMITS:
EXTINGUISHING MEDIA
USE: Class D or other extinguishing agent for metal fires.
SPECIAL FIRE FIGHTING PROCEDURES
Firefighters must wear full face, self-contained breathing apparatus with full protective clothing to prevent contact with skin and eyes. Fumes from fire are hazardous. Isolate runoff to prevent environmental pollution.
UNUSUAL FIRE AND EXPLOSION HAZARDS
DANGEROUS WHEN WET.
When heated to decomposition, tin phosphide may emit toxic oxides of phosphorus.
On contact with water, steam, moisture or alkali, it may yield spontaneously flammable, phosphine gas.
HAZARDOUS COMBUSTION PRODUCTS: N.A.

SECTION 6. ACCIDENTAL RELEASE MEASURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED
Wear appropriate respiratory and protective equipment specified in section VIII-control measures. Isolate spill area, provide ventilation and extinguish sources of ignition. Vacuum up spill using a high efficiency particulate absolute (HEPA) air filter and place in a closed container for proper disposal. Take care not to raise dust. Use non-sparking tools.

SECTION 7. HANDLING AND STORAGE

PRECAUTIONS TO BE TAKEN IN HANDLING
May react with water, steam and moisture. Handle in a controlled environment and under an inert gas such as argon.
HAZARD LABEL INFORMATION:
Store in cool, dry area. Store in tightly sealed container. Wash thoroughly after handling

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SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

PROTECTIVE EQUIPMENT SUMMARY - HAZARD LABEL INFORMATION:
NIOSH approved respirator Impervious gloves Safety goggles Clothes to prevent skin contact
RESPIRATORY EQUIPMENT (SPECIFY TYPE)
NIOSH - approved respirator
EYE PROTECTION
Safety goggles
PROTECTIVE GLOVES
Impervious gloves
OTHER PROTECTIVE CLOTHING
Protective gear suitable to prevent contamination
VENTILATION
Local Exhaust: Local exhaust ventilation may be necessary to control any air contaminants to within their PELs or TLVs during the use of this product.
Special: Handle in a controlled environment
Mechanical (Gen): Not recommended
Other: Handle and store in an inert gas such as argon
WORK/HYGIENIC/MAINTENANCE PRACTICES
Implement engineering and work practice controls to reduce and maintain concentration of exposure at low levels. Use good housekeeping and sanitation practices. Do not use tobacco or food in work area. Wash thoroughly before eating and smoking. Do not blow dust off clothing or skin with compressed air.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATES: Solid
MELTING POINT: N.A.
BOILING POINT: N.A.
SPECIFIC GRAVITY (WATER = 1): N.A.
VAPOR PRESSURE (VS. AIR OR MM HG): N.A.
VAPOR DENSITY (VS. AIR = 1): N.A.
EVAPORATION RATE (VS BUTYL ACETATE=1): N.A.
SOLUBILITY IN WATER: N.A.
SOLUBILITY NOTES: N.A.
PERCENT VOLATILE: N.A.

SECTION 10. STABILITY AND REACTIVITY

STABILITY: Unstable
CONDITIONS TO AVOID - INSTABILITY
Protect from moisture

INCOMPATIBILITY - MATERIALS TO AVOID
Water, steam, moisture and alkalis
HAZARDOUS DECOMPOSITION OR BY PRODUCTS
Oxides of phosphorus and phosphine
HAZARDOUS POLYMERIZATION: Will not occur
CONDITIONS TO AVOID - HAZARDOUS POLYMERIZATION
None

SECTION 11. TOXICOLOGICAL INFORMATION

HEALTH HAZARDS (ACUTE AND CHRONIC)
To the best of our knowledge the chemical, physical and toxicological properties of tin phoshpide have not been thoroughly investigated and recorded.
Tin compounds have variable toxicity. Elemental tin and inorganic tin compounds have low toxicity and are poorly absorbed when ingested. Some inorganic tin salts are irritating or can liberate toxic fumes on decomposition. The latter is particularly true of tin halogens. (Sax, Dangerous Properties of Industrial Materials, eighth edition)
Phosphides are particularly dangerous because they tend to decompose to the very toxic phosphine upon contact with moisture or acids. (Sax, Dangerous Properties of Industrial Materials, eighth edition)
Phosphine is a poison by inhalation. A very toxic gas whose effects are central nervous system depression and lung irritation. There may be pulmonary edema, dilation of the heart, and hyperemia of the visceral organs. Inhalation can cause coma and convulsions leading to death within 48 hours. (Sax, Dangerous Properties of Industrial Materials, eighth edition)
INHALATION:
Acute: POISON. Inhalation of dust or powder may cause irritation to the respiratory system. Phosphine may cause thirst, chest pressure, dyspnea, muscle pain, chills and stupor.
Chronic: Inhalation of finely divided powder may cause pulmonary fibrosis. Phosphine may cause anemia, bronchitis, gastrointestinal disturbances. Visual, speech and motor disturbances may result from continued exposure to very low concentrations.
INGESTION:
Acute: POISON. May cause nausea, vomiting, abdominal pain and diarrhea.
Chronic: No chronic health hazards recorded.
SKIN:
Acute: May cause irritation.
Chronic: No chronic health effects recorded.
EYE:
Acute: May cause irritation.
Chronic: May cause visual disturbances.
TARGET ORGANS: May affect the respiratory and central nervous system.
CARCINOGENICITY: NTP? No IARC Monographs? No OSHA Regulated? No
RECOMMENDED EXPOSURE LIMITS
See "Section II"
LD 50 / LC 50
No toxicity data recorded
SIGNS AND SYMPTOMS OF EXPOSURE
INHALATION: May cause a red, dry, throat and coughing. Phosphine may cause thirst, chest pressure, shortness of breath, muscle pain, chills and stupor.
INGESTION: May cause nausea, vomiting, abdominal pain and diarrhea.
SKIN: May cause red, itching and burning.
EYE: May cause red, itching and watering.
MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE
Pre-existing respiratory disorders.
EMERGENCY AND FIRST AID PROCEDURES

INHALATION: Remove victim to fresh air; keep warm and quiet; give oxygen if breathing is difficult and seek medical attention immediatley.
INGESTION: Give 1-2 glasses of milk or water and induce vomiting; seek medical attention immediatley. Never induce vomiting or give anything by mouth to an unconscious person.
SKIN: Remove contaminated clothing; brush material off skin; wash affected area with mild soap and water; seek medical attention.
EYE: Flush eyes with lukewarm water, lifting upper and lower eyelids, for at least 15 minutes. Seek medical attention.

SECTION 12. ECOLOGICAL INFORMATION

N/A

SECTION 13. DISPOSAL CONSIDERATIONS

WASTE DISPOSAL METHOD
Dispose of in accordance with local, state and federal regulations.

SECTION 14. TRANSPORT INFORMATION

TSCA: No
Hazard Labeling:
STANNIC PHOSPHIDE
Shipping Classification:
UN Number: UN1433
UN Proper shipping name: Stannic phosphides
Transport hazard class(es)
Hazard Class: 4.3
Subsidiary risk: 6.1(PG1, II)
Packing group: I
Environmental hazards: No

SECTION 15. REGULATORY INFORMATION

The chemical(s) listed herein is not found on the Toxic Substance Control Act chemical substance inventory. This chemical may not be used for commercial purposes. This chemical may be used for research and development purposes only as defined at 40 CFR 710.2(y).

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

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