SPI Supplies Division
Structure Probe, Inc.
206 Garfield Ave., West Chester, PA 19381-0656 USA
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Manufacturer's CAGE: 1P573

Safety Data Sheet

Date Effective: March 8, 2017

SPI Catalog # 04129-AB SPI-Chem™ TEM Screen Recoating Phosphor Powder

Section 1.1: Identification

Chemical Name/Synonyms ..... Phosphor powder; Zinc Sulfide: Copper Aluminum Activated

Product or Trade Name ..... SPI-Chem™ TEM Screen Recoating Phosphor Powder

CAS #'s 68611-68-7

Chemical Formula..... ZnS:Cu,Al

Section 1.2: Relevant Uses/Restrictions

TEM Screen recoating powder

Section 1.3: Supplier of the Safety Data Sheet

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Section 1.4: Emergency telephone number

Emergencies
Contacting CHEMTREC:

24 Hour Emergency Use Only #'s...
Worldwide phone: 1-(703)-741-5970
Toll-free phone: 1-(800)-424-9300 USA + Canada only

Section 2: Hazard Identification

2.1 Classification of the substance

Not a hazardous substance or mixture.

2.2 Label elements, including precautionary statements

Not a hazardous substance or mixture

2.3 Other Hazards: None known.

Hazardous Material Information System USA
- Health 1
- Fire Hazard 0
- Reactivity 0
- Personal Protection .....

NFPA Rating (estimated)
- Health 0
- Flammability..... 0
- Reactivity 0

Section 3: Composition

3.1 Substances:

This material contains greater than 99% Zinc Sulfide. No TLV or PEL has been established for Zinc Sulfide.
The TLV for particulates not otherwise classified is 10 mg/m^3.
The PEL for particulates not otherwise classified is 15 mg/m^3.

Copper and Aluminum are present in concentrations of less than 1% and are part of the chemical structure.
The PEL and TLV for copper dust and mists is 1.0 mg/m^3.
The PEL and TLV for copper fumes is 0.1 mg/m^3 and 0.2 mg/m^3 respectively.

Section 4: First Aid Measures

4.1 Description of first aid measures:

Inhalation:
If any symptoms of pulmonary involvement develop, remove from exposure and seek medical attention.

Skin Contact:
If irritation occurs, thoroughly wash affected area with mild soap and water and prevent further contact. If irritation persists, seek medical attention.

Eye Contact:
If irritation occurs, flush with copious amounts of water. If irritation persists, seek medical attention.

Ingestion:
If substantial quantities are swallowed, give person a large quantity of water to drink and induce vomiting (if the person is conscious) as directed by medical personnel. Never give anything by mouth to an Unconscious person.

Self-protection of the first aider:
No additional information available.

4.2 Most important symptoms and effects, both acute and delayed:
No additional information available.

4.3 Indication of any immediate medical attention and special treatment needed:
No additional information available.

Section 5: Fire Fighting Measures

5.1 Extinguishing media:

Not a fire hazard. Use extinguishing agents suitable for the surrounding fire.

5.2 Special hazards arising from the substance or mixture:

No available data.

5.3 Advice for firefighters:

Use a self-contained breathing apparatus to prevent inhalation of dust, mist and/or fumes that may be generated during the fire activities.

Section 6: Accidental Release Measures

6.1 Personal precautions:

Ventilate the area of the spill.
Avoid dust formation.
If airborne dust is generated, an appropriate NIOSH approved respirator should be worn.

6.2 Environmental precautions:

Dispose of in accordance with appropriate government regulations.

6.3 Methods and material for containment and cleaning up:

Clean-up using methods which avoid dust generation, such a vacuuming (vacuum should be equipped With filter which prevents re-suspension of dust), or wet clean-up.

6.4 Reference to other sections:

For disposal, see Section 13.

Section 7: Handling and Storage

7.1 Precautions for safe handling

Avoid breathing dust.
Avoid prolonged skin contact.
Wash thoroughly after handling and before eating or smoking and at the end of the work shift.
Do not shake clothing or other items to remove dust.
Use a vacuum.
Use good housekeeping procedures to prevent accumulation of dust.
Use clean-up methods which minimize dust generation, such a vacuuming or wet clean up.
If airborne dust is generated to levels at or above the TLV/PEL, use an appropriate NIOSH approved respirator.

7.2 Conditions for safe storage, including any incompatibilities

Keep containers tightly closed when not in use.
Label all containers.
Store away from incompatible materials.

7.3 Specific end uses

TEM Screen recoating powder
This material is not being offered for clinical or diagnostic applications, agricultural uses or for human or animal consumption.

Section 8: Exposure Controls and Personal Protection

8.1 Control parameter and Personal Protection

Workplace exposure limits

No TLV or PEL has been established for Zinc Sulfide.

The TLV for particulates not otherwise classified is 10 mg/m^3.

The PEL for particulates not otherwise classified is 15 mg/m^3.

The PEL and TLV for copper dust and mists is 1.0 mg/m^3.

The PEL and TLV for copper fumes is 0.1 mg/m^3 and 0.2 mg/m^3 respectively.

Biological limit values

No data available.

8.2 Exposure controls

8.2.1 Appropriate engineering controls

Use local exhaust ventilation that is adequate to limit personal exposure to levels that do not exceed the TLV or PEL. If such equipment is not available, use respirators as specified below.

8.2.2 Individual protection measures

Eye Protection: Safety glasses or goggles are recommended.

Respiratory Protection: Use an NIOSH approved respirator if airborne dust concentrations exceed the TLV/PEL, as set forth in 29 CFR 1910.134.

8.2.3 Environmental exposure controls

No special environmental precautions are required.

Section 9: Physical and Chemical Properties

9.1 Information on basic physical and chemical properties

Appearance: Pale yellow-green powder

Odor: None

Odor threshold: Not applicable

pH: No data available

Melting point/Freezing point: No data available

Boiling point/Boiling point range: No data available

Flash Point: No data available

Evaporation rate: No data available

Flammability (solid, gas): No data available

Upper/lower flammability or explosive limits: No data available

Vapor Pressure: No data available

Vapor density: No data available

Specific Gravity: (H_2O=1) 4.0

Solubility: Insoluble

Partition coefficient (n-octanol/water): No data available

auto-ignition temperature: No data available

Decomposition temperature: No data available

Viscosity: No data available

Explosive properties: No data available

Oxidizing Properties: No data available

Percent Volatile: 0

9.2 Other information: No further data available

Section 10: Stability and Reactivity

10.1 Reactivity: No data available

10.2 Chemical Stability: Stable

10.3 Possibility of Hazardous Reactions: No data available

10.4 Conditions to avoid: No data available

10.5 Incompatible materials: Contact with acids generates Hydrogen Sulfide gas.

10.6 Hazardous decomposition products: Oxides of Zinc, Copper, Aluminum and Sulfur may be evolved At extreme temperatures.

10.7 Hazardous Polymerization: will not occur

Section 11: Toxicological Information

Information on the likely routes of exposure

11.1 Information on toxicological effects (based on Zinc Sulfide component)

a. acute toxicity

LD50 Oral	Rat > 2,000 mg/kg
Inhalation	No data
LD50 Dermal	Rat > 2,000 mg/kg

b. skin corrosion/irritation

No data available

c. serious eye damage/irritation

No data available

d. respiratory or skin sensitization

No data available

e. germ cell mutagenicity
No data available
f. carcinogenicity
Not identified as probable, possible, confirmed, potential, or anticipated carcinogen by IARC, ACGIH, NTP, or OSHA.

g. reproductive toxicity
No data available

h. STOT-single exposure
No data available

i.STOT-repeated exposure
No data available

j. aspiration hazard
No data available

RTECS (CAS# 1314-98-3 Zinc Sulfide): ZH5400000

To the best of our knowledge, the chemical, physical, and toxicological properties of this material have not been thoroughly investigated.

Section 12: Ecological Information

12.1 Toxicity

Zinc sulfide	Toxicity to fish	LC50 – Pimephales promelas (fathead minnow) – 1,826 mg/l (96 h)

12.2 Persistence and degradability
No data available

12.3 Bio-accumulative potential
No data available

12.4 Mobility in soil
No data available

12.5 Results of PBT and vPvB assessment
No data available

12.6 Other adverse effects
No data available

Section 13: Disposal Considerations

13.1 Waste treatment methods
Dispose of in accordance with the appropriate local, state, and federal regulations.

Section 14: Transport Information

DOT: Not dangerous for transport.

IATA: Not dangerous for transport.

IMDG: Not dangerous for transport.

Section 15: Regulatory Information

15.1 Safety, health and environmental regulations/ legislation specific for the substance or mixture

SARA 302 Components

No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components

The following components are subject to reporting levels established by SARA Title III, Section 313

Zinc Sulfide CAS# 1314-98-3 Revision Date: 2007-07-01

SARA 311/312 Hazards

No SARA Hazards

Massachusetts Right to Know Components

No components are subject to the Massachusetts Right to Know Act.

Pennsylvania and New Jersey Right to Know Components

Zinc Sulfide CAS# 1314-98-3 Revision Date: 2007-07-01

California Prop. 65 Components

This product does not contain any chemicals known to the State of California to cause cancer, birth defects, or any other reproductive harm.

Date of Preparation: March 8, 2017

Abbreviations and acronyms

IMDG: International Maritime Code for Dangerous Goods
DOT: US Department of Transportation
CMRG: Chemical Manufacturer's Recommended Guidelines
IATA: International Air Transport Association
ACGIH: American Conference of Governmental Industrial Hygienists
AIHA: American Industrial Hygiene Association
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
NFPA: National Fire Protection Association (USA)
HMIS: Hazardous Materials Identification System (USA)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bio-accumulative and Toxicological
vPvB: very Persistent and very Bio-accumulative
NIOSH: National Institute for Occupational Safety
OSHA: Occupational Safety Health
TLV: Threshold Limit Value
PEL: Permissible Exposure Limit
REL: Recommended Exposure Limit
STEL: Short Term Exposure Limit
CEIL: Ceiling

Section 16: Other Information

Disclaimer of Liability:

Caution! Do not use SPI Supplies products or materials in applications involving implantation within the body; direct or indirect contact with the blood pathway; contact with bone, tissue, tissue fluid, or blood; or prolonged contact with mucous membranes. Products offered by SPI Supplies are not designed or manufactured for use in implantation in the human body or in contact with internal body fluids or tissues. SPI Supplies will not provide to customers making devices for such applications any notice, certification, or information necessary for such medical device use required by US FDA (Food and Drug Administration) regulation or any other statute. SPI Supplies and Structure Probe, Inc. make no representation, promise, express warranty or implied warranty concerning the suitability of these materials for use in implantation in the human body or in contact with internal body tissues of fluids.

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