



# Super Conductor Materials, Inc.

391 Spook Rock Industrial Park, Suffern, NY 10901 · 845.368.0240 · Fax 845.368.0250 · www.scm-inc.com

Chemtrec: (800) 424-9300

Poison Center: (800) 562-8236

Revision Date: January 8<sup>th</sup>, 2019

## SAFETY DATA SHEET

Identity: Indium Phosphide

Formula: InP

### SECTION I - GENERAL INFORMATION

Manufacturer: Super Conductor Materials, Inc.

The information below is believed to be accurate and represents the best information available to Super Conductor Materials, Inc. However, SCM makes no warranty, expressed or implied with respect to such information and assumes no liability resulting from its use.

### SECTION II - HAZARDOUS INGREDIENTS/IDENTITY INFORMATION

Molecular Weight: 145.79

CAS #	OSHA PEL	ACGIH TLV	%
22398-80-7	NE	NE	0.0-100.0%

### SECTION III - PHYSICAL/CHEMICAL CHARACTERISTICS

Physical States: Solid

Boiling Point: N/A

Vapor Pressure (vs. air or mmHg): N/A

Melting Point: 1070.00°C (1958°F)

Density: 4.81 g/cm<sup>3</sup>

Evaporation Rate: N/A

Flash Point: N/A

Solubility in water: Insoluble/

May decompose to phosphine

*Appearance and odor:* Brittle, metallic pieces, no odor

### SECTION IV - FIRE AND EXPLOSION HAZARD DATA:

*Method Used:* Unknown

*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.

#### *Suitable extinguishing agents:*

When heated to decomposition, indium phosphide may emit toxic oxides of phosphorus.

May be a fire hazard by chemical reaction, particularly with moisture.

May be a moderate explosion hazard.



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May react with water, steam, acid or acid fumes to produce toxic and flammable phosphine gas.  
May react vigorously with oxidizing agents.

## SECTION V - REACTIVITY DATA

*Stability:* Stable

*Conditions to Avoid (Instability):* None

*Incompatibility (Materials to avoid):* Water, moisture, acids and oxidizing agents

*Hazardous decomposition or byproducts:* Oxides of phosphorus and phosphine

*Hazardous Polymerization:* Will not occur

*Conditions to Avoid (Hazardous Polymerization):* None

## SECTION VI - HEALTH HAZARD DATA

Routes of entry: Inhalation? Yes    Skin? Yes    Eyes? Yes    Ingestion? Yes    Other? No

To the best of our knowledge the chemical, physical and toxicological properties of indium phosphide have not been thoroughly investigated and recorded.

Indium is a poison by subcutaneous route. It affects the liver heart, kidneys, and the blood. Teratogenic effects. Inhalation of indium compounds may cause damage to the respiratory system. (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)

### Signs and Symptoms of Overexposure:

*Inhalation:* May cause a red, dry, throat and coughing, sneezing and shortness of breath. Phosphine may cause thirst, chest pressure, and shortness of breath, muscle pain, chills and stupor.

*Ingestion:* May cause nausea, vomiting, abdominal pain and diarrhea.

*Skin:* May cause redness, itching, inflammation and burning.

*Eye:* May cause red, itching, inflammation, burning and watering.

### Health Hazards (Acute and chronic):

#### *Inhalation:*

Acute: POISON. Inhalation of dust or powder may cause damage to the respiratory system. Phosphine may cause thirst, chest pressure, dyspnea, muscle pain, chills and stupor.

Chronic: May cause pneumonitis. 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 irritation to the gastrointestinal tract.

Chronic: No chronic health effects recorded.



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*Skin:*

Acute: May cause irritation.

Chronic: No chronic health effects recorded.

*Eye:*

Acute: May cause irritation.

Chronic: No chronic health effects recorded.

*Target Organs:* May affect the lungs, heart, respiratory and central nervous system

*Carcinogenicity:* NTP? No                    LARC Monographs? No                    OSHA Regulated? No

*Medical Conditions Aggravated by exposure:* Pre-existing respiratory disorders.

*Emergency and First Aid Procedures:*

*Inhalation:* Remove victim to fresh air, keep warm and quiet, and give oxygen if breathing is difficult; seek medical attention

*Ingestion:* Give 1-2 glasses of milk or water and induce vomiting, seek medical attention. 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, and seek medical attention if symptoms persist

*Eye:* Flush eyes with lukewarm water, lifting upper and lower eyelids for at least 15 minutes and seek medical attention.

SECTION VII - PRECAUTIONS FOR SAFE HANDLING AND USE
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*Steps to be taken in case material is released or spilled:*

Wear appropriate respiratory and protective equipment specified in section VIII. 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.

*Waste disposal method:*

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

*Hazard Label Information:*

Store in cool, dry area and in tightly sealed container. Wash thoroughly after handling.

SECTION VIII - CONTROL MEASURES
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*Protective Equipment Summary (Hazard Label Information):*

NIOSH approved respirator, impervious gloves, safety glasses, clothes to prevent contact.

*Ventilation:*

Local Exhaust: To maintain concentration at low concentrations

Special: Handle in a controlled environment

Mechanical (General): Not recommended

Other: Handle and store in an inert gas such as argon



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*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 or smoking. Do not blow dust off clothing or skin with compressed air.

Please be advised that N/A can either mean Not Applicable or No Data Has Been Established
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