



Super Conductor Materials, Inc.

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

Chemtrec: (800) 424-9300

Poison Center: (800) 562-8236

Revision Date: January 8th, 2019

SAFETY DATA SHEET

Identity: Phosphorus

Formula: P

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: 30.97

CAS #	OSHA PEL	ACGIH TLV	%
7723-14-0	NE	NE	0.0-100.0%

SECTION III – PHYSICAL/CHEMICAL CHARACTERISTICS

Physical States: Solid (*Red*)

Boiling Point: 280.00°C

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

Melting Point: 410.00°C (Sublimes)

Specific Gravity (Water=1): 2.34 g/cm³

Evaporation Rate: N/A

Flash Point: N/A

Solubility in water: Insoluble

Appearance and odor: Reddish-brown powder and pieces, slightly “fishy” odor.

SECTION IV - FIRE AND EXPLOSION HAZARD DATA:

Method Used: Unknown

Explosive Limits: LEL: N/A

UEL: N/A

Extinguishing Media: Use suitable extinguishing agent for surrounding material and type of fire

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:

-When heated to decomposition, phosphorus may emit toxic fumes of PO_x.

-Dangerous fire hazard when exposed to heat, by chemical reaction or on contact with organic materials.



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- May have a violent reaction or ignite on contact with reducing agents, oxidizing agents, alkalis + heat, fluorine, chlorine, liquid bromine or antimony pentachloride.
- Phosphorus may explode on impact.
- Reacts with water vapor and oxygen to form phosphine.
- May have an explosive reaction on contact with organic materials, chlorosulfuric acid, hydroiodic acid, magnesium perchlorate and chromyl chloride.
- May form sensitive explosive mixtures with metal halogenates, ammonium nitrate, mercury (I) nitrate, silver nitrate, sodium nitrate, potassium permanganate.

SECTION V - REACTIVITY DATA

Stability: Stable

Conditions to Avoid (instability): None

Incompatibility (Materials to avoid): Alkalies, ammonium nitrate, antimony pentachloride, liquid bromine, chlorine, chlorosulfuric acid; chromyl chloride, cyanogen iodide, fluorine, halogen azides, halogen oxides, hexalithium disilicide, hydroiodic acid, hydrogen peroxide, interhalogens, magnesium perchlorate, mercury (I) nitrate, metal acetylides, metals, metal halogenates, metal oxides, metal peroxides, metal sulfates, nitric acid, nitrogen halides, nitrosyl fluoride, nitril fluoride, non-metal halides, non-metal oxides, oxidizing agents, organic material, oxygen, peroxides, peroxyformic acid, potassium nitride, potassium permanganate, reducing agents, selenium, silicon nitrate, sodium chlorite, sodium nitrate, sulfuric acid and sulfur.

Hazardous Decomposition or Byproducts: Phosphine gas and oxides of phosphorus

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

Phosphorus compounds have variable toxicity. Most inorganic phosphates (except phosphine) have low toxicity, but in large doses they may cause serious disturbances, particularly in calcium metabolism. Red phosphorus and phosphates are relatively harmless. (Sax, Dangerous Properties of Industrial Properties, eighth edition)

Signs and Symptoms of Overexposure:

Inhalation: May cause dizziness, headache, fatigue and difficulty breathing.

Ingestion: May cause nausea and vomiting.

Skin: May cause redness, inflammation and itching.

Eye: May cause redness, inflammation, itching and watering.

Health Hazards (Acute and Chronic):

Inhalation:

Acute: May cause dizziness, headache, fatigue and difficulty breathing.

Chronic: May cause pulmonary edema.

Ingestion:

Acute: May cause irritation, nausea and vomiting.

Chronic: May cause damage to the liver and kidneys.



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 effect the liver and kidneys

Carcinogenicity: NTP? No IARC Monographs? No OSHA Regulated? No

Medical Conditions Aggravated by Exposure: None recorded

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

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

Protective Equipment Summary (Hazard Label Information):

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

Ventilation:

Local Exhaust: Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels to low exposure levels.

Special: Handle in a controlled atmosphere

Mechanical (General): Not recommended

Other: Handle and store in an inert gas: nitrogen, 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