

# MATERIAL SAFETY DATA SHEET

## **I PRODUCT IDENTIFICATION**

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<b>Trade Name:</b>	Gallium Phosphide	<b>Formula:</b>	GaP
<b>Chemical Family:</b>	Metal Phosphide	<b>CAS #:</b>	12063-98-8
<b>Molecular Weight:</b>	100.69		

## **II HAZARDOUS INGREDIENTS**

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**OSHA Hazardous (H)/Non-Hazardous (NH):Percent:**

**HMIS Ratings: Health:** 2      **Flammability:** 0      **Reactivity:** 0

## **III PHYSICAL DATA**

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<b>Boiling Point (°F):</b>	N/E	<b>Melting Point:</b>	1465.0 °C
<b>Vapor Density (Air=1):</b>	Not Available	<b>Physical States:</b>	Solid
<b>Vapor Pressure:</b>	Not Available	<b>Solubility in Water:</b>	Insoluble
<b>Appearance and Odor:</b>	Pale Orange pieces, no odor	<b>Specific Gravity (H<sub>2</sub>O=1):</b>	4.1 gm/cc

## **IV FIRE AND EXPLOSION HAZARDS DATA**

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**Flash Point (Method Used):** Not Applicable (Non-flammable)      **Autoignition Temperature:** N/A  
**Flammable Limits: Upper:** N/A      **Lower:** N/A

**Extinguishing Media:** Use: Not applicable. Use suitable extinguishing media for surrounding materials and type of fire.

**Special Fire Fighting Procedures:** 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 & Explosion Hazards:** When heated to decomposition, gallium phosphide may emit toxic oxides of phosphorus.

## **V HEALTH HAZARD INFORMATION**

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**Routes of Entry:** Inhalation, Skin, Ingestion, no others

**Signs and Symptoms of Exposure:**

**Inhalation:** May cause a red, dry, throat and coughing, sneezing and difficulty breathing.

**Ingestion:** May cause nausea, vomiting, metallic taste, itching, sweating, abdominal pain and diarrhea. May cause behavioral changes such as sleepiness and loss of appetite.

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

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

**Health Hazards (Acute and chronic):**

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

**Inhalation: Acute:** May cause irritation to the mucus membranes of the respiratory tract.

**Chronic:** May cause depression of bone marrow.

**Ingestion: Acute:** May cause irritation to the gastrointestinal tract.

**Chronic:** No chronic health effects recorded.

**Skin: Acute:** May cause irritation.

**Chronic:** May cause dermatitis and depression of bone marrow.

**Eye: Acute:** May cause irritation.

**Chronic:** No chronic health effects recorded.

**Target Organs:** No target organs recorded.

**Carcinogenicity:** This product does not contain any ingredient designated by IARC, NTP, OSHA as a probable human carcinogen.

**Recommended Exposure Limits:** See "Section II"

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

#### **EMERGENCY AND FIRST AID PROCEDURES:**

**EYES:** In case of contact, immediately flush eyes with plenty of lukewarm water, lifting upper and lower eyelids, for at least 15 minutes. Seek medical attention if symptoms persist.

**SKIN:** Remove contaminated clothing and shoes. Brush material off skin; wash affected area with mild soap and water. Get medical attention if irritation develops or persists.

**INHALATION:** Remove from area of exposure. Keep warm and quiet; give oxygen if breathing is difficult and seek medical attention if symptoms persist.

**INGESTION:** Give 1-2 glasses of mild or water and induce vomiting. Seek medical attention. Never induce vomiting or give anything by mouth to an unconscious person.

#### **VI REACTIVITY DATA**

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**Stability:** Stable

**Incompatibility (Material to Avoid):** None recorded

**Hazardous Decomposition Products or Byproducts:** Oxides of phosphorus

**Hazardous Polymerization:** Will not occur

#### **VII SPILL OR LEAK PROCEDURES**

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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-Special Protection Information. 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.

**Waste Disposal Method:** Dispose of in accordance with Local, State and Federal regulations.

**Hazard Label Information:** Store in cool, dry area. Store in tightly sealed container. Wash thoroughly after handling.

## VIII SPECIAL PROTECTION INFORMATION

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**Respiratory Protection:** Use a NIOSH/MSHA approved dust respirator with appropriate cartridge.

**Ventilation:** Provide adequate ventilation. Local exhaust to maintain concentration at low concentrations.

**Mechanical (General):** Recommended.

**Protective Clothing:** Protective gear suitable to prevent contamination.

**Protective Gloves:** Rubber gloves.

**Eye Protection:** Safety glasses.

**Other Protective 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.

## IX SPECIAL PRECAUTIONS

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Some of the chemicals listed herein are research or experimental substances which may be toxic, as defined by various governmental regulations. In accordance with Environmental Protection Agency regulations and the Toxic Substance Control Act (TSCA), these materials should only be handled by, or under the direct supervision of, a "technically qualified individual", as defined in 40 CFR 710.2(aa).

The above information is accurate to the best of our knowledge. However, since data, safety standards, and government regulations are subject to change, and the conditions of handling and use or misuse are beyond our control, ESPI makes no warranty, either expressed nor implied, with respect to the completeness or continuing accuracy of the information contained wherein, and disclaims all liability for reliance thereon. Users should satisfy themselves that they have all current data relevant to their particular use.

Prepared by: S. Dierks

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