

# MATERIAL SAFETY DATA SHEET

## **I PRODUCT IDENTIFICATION**

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**Trade Name:** Boron Phosphide  
**Chemical Family:** Nonmetal phosphide

**Molecular Formula:** BP  
**CAS #:** 20205-91-8

## **II HAZARDOUS INGREDIENTS**

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**TLV (Units):** 0.3 ppm for PH<sub>3</sub>

**OSHA PEL:** 0.3 ppm for PH<sub>3</sub>

**Permissible Exposure Limits:** No limits set for BP

## **III PHYSICAL DATA**

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**Boiling Point °C:** Unknown

**Melting Point:** Unknown

**Molecular Weight:** 41.78

**Specific Gravity:** N/A

**Solubility in H<sub>2</sub>O:** Decomposes in H<sub>2</sub>O with evolution of PH<sub>3</sub>.

**Density:** 2.90

**Appearance and Odor:** Maroon powder. Fishy or garlic-like odor, in moist air.

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

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**Flash Point (Method used):** N/A

**Autoignition Temperature:** Unknown

**Comments:** Keep away from water and moisture.

**Extinguishing Media:** Use dry chemical; Other: Agent for metal fire (Met-L-X, TEC, dry graphite).

**Special Fire Fighting Procedures:** Wear self-contained breathing apparatus at all times.

**Unusual Fire & Explosion Hazards:** Phosphine can be spontaneously flammable in air.

## **V HEALTH HAZARD INFORMATION**

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**Effects of Over Exposure:**

**Irritation:** Mild (transient); Mucous Membranes

**Corrosiveness:** Unknown

**Sensitization:** None

**Lung Effects (Specify):** (Effects of exposure to phosphine) Severe respiratory irritation, tightness of chest, burning sensation, shortness of breath, cough. Delayed pulmonary edema may result from high concentrations.

**Other (specify):** Systemic effects of PH<sub>3</sub> inhalation include nausea, vomiting, thirst, dizziness, fatigue, tremors and restlessness. No data available on BP toxicity. Avoid skin contact.

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

**EYE CONTACT:** Flush with plenty of water for at least 15 minutes.

**DERMAL:** Flush with soap and water.

**INHALATION:** Remove to fresh air.

**INGESTION:** Induce vomiting. Get immediate medical attention.

## VI REACTIVITY DATA

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**Stability:** Unstable

**Conditions contributing to Instability:** Moisture

**Incompatibility (Materials to Avoid):** Strong acids, oxidizers and Halogens.

**Hazardous Decomposition Products:** Thermal and Other (list):  $\text{PH}_3$ .

**Conditions to Avoid:** Heat, open flames, sparks and ignition sources.

## VII SPILL OR LEAK PROCEDURES

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**Steps to Be Taken in Case Material Is Released or Spilled:** Absorb with sand or inert material. Sweep or scoop up and remove.

**Waste Disposal Method:** React the BP under controlled conditions with dilute acid. Neutralize with  $\text{NaHCO}_3$ , and dispose of in normal refuse or flush.

## VIII SPECIAL PROTECTION INFORMATION

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**Respiratory Protection:** Self-contained breathing apparatus if material is released into air.

**Ventilation:** Consult an industrial hygienist or environmental health specialist. Local exhaust.

**Eye Protection:** Safety glasses

**Hand (Glove Type):** Neoprene

## IX SPECIAL PRECAUTIONS

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**Other Handling and Storage Conditions:**

- Wash thoroughly after handling
- Do not get in eyes, on skin or clothing
- Do not breathe dust, vapor, mist, or gas
- Keep away from heat, sparks and open flames
- Store in tightly closed containers
- Empty container may contain hazardous residues
- Flammable solid, dangerous when wet

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Dated: September 1994