

Safety Data Sheet
Zinc Phosphide

1. Product and Company Identification

Trade Name: Zinc phosphide
Chemical Formula: Zn_3P_2
Recommended Use: Scientific research and development

Manufacturer/Supplier: ALB Materials Inc
Street: 2360 Corporate Circle, Suite 400
City: Henderson
State: Nevada
Zip Code: 89074-7739
Country: USA
Tel #: +1-702-983-3769

24-Hour Emergency Contact: 800-424-9300 (US & Canada)
+1-703-527-3887 (International)

2. Hazards Identification

Signal Word: Danger



Hazard Statements: H260: In contact with water releases flammable gases which may ignite spontaneously
H300: Fatal if swallowed

Precautionary Statements: P231+P232: Handle under inert gas. Protect from moisture
P280: Wear protective gloves/protective clothing/eye protection/face protection.
P233: Keep container tightly closed
P301+P310: IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician
P405: Store locked up
P501: Dispose of contents/container in accordance with local/regional/national/international regulations

HMIS Health Ratings (0-4):
Health: 3
Flammability: 2
Physical: 3

3. Composition

Chemical Family: Ceramic
Additional Names: Trizinc diphosphide

Zinc phosphide (Zn_3P_2):
Percentage: 100 wt%
CAS #: 1314-84-7
EC #: 215-244-5

4. First Aid Procedures

General Treatment:	Seek medical attention if symptoms persist.
Special Treatment:	None
Important Symptoms:	None
Inhalation:	Remove victim to fresh air. Supply oxygen if breathing is difficult.
Ingestion:	Do not induce vomiting. Seek immediate medical attention.
Skin:	Wash affected area with mild soap and water. Remove any contaminated clothing.
Eyes:	Flush eyes with water, blinking often for several minutes. Remove contact lenses if present and easy to do. Continue rinsing

5. Firefighting Measures

Flammability:	Flammable
Extinguishing Media:	Do not use water for metal fires – use CO ₂ , sand, extinguishing powder.
Spec. Fire Fighting Procedure:	Use full-face, self-contained breathing apparatus with full protective clothing to prevent contact with skin and eyes. See section 10 for decomposition products.

6. Accidental Release Measures

If Material Is Released/Spilled:	Wear appropriate respiratory and protective equipment specified in special protection information. Isolate spill area and provide ventilation. Vacuum up spill using a high efficiency particulate absolute (HEPA) air filter and place in a closed container for disposal. Take care not to raise dust.
Environmental Precautions:	Isolate runoff to prevent environmental pollution.

7. Handling and Storage

Handling Conditions:	Wash thoroughly after handling.
Storage Conditions:	Store in a cool dry place in a tightly sealed container. Store apart from materials and conditions listed in section 10.
Work/Hygienic Maintenance:	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.
Ventilation:	Provide sufficient ventilation to maintain concentration at or below threshold limit.

8. Exposure Controls and Personal Protection

Permissible Exposure Limits:	N/A
Threshold Limit Value:	N/A
Special Equipment:	None
Respiratory Protection:	Dust Respirator
Protective Gloves:	Rubber gloves
Eye Protection:	Safety glasses or goggles, Full face protection
Body Protection:	Protective work clothing. Wear close-toed shoes and long sleeves/pants.

9. Physical and Chemical Characteristics

Color	Black
Form:	Powder, Granules, Pellets, Sputtering target, Custom parts
Odor:	Odorless
Water Solubility:	Contact with water releases flammable and toxic gases
Boiling Point:	1100 °C
Melting Point:	420 °C
Flash Point:	N/A
Autoignition Temperature:	N/A
Density:	4.55 g/cc
Molecular weight:	258.12 g/mol

10. Reactivity

Stability:	Stable under recommended storage conditions
Reacts With:	Water, Acids, Oxidizing agents
Incompatible Conditions:	Water/moisture, Acids
Hazardous Decomposition Products:	Hydrogen phosphide (Phosphine), Phosphorus oxides, Metal oxide fume

Notes: Contact with acids liberates very toxic gases

11. Toxicological Information

Potential Health Effects:

Eyes:	Causes irritation
Skin:	Causes irritation
Ingestion:	Fatal
Inhalation:	May cause irritation
Chronic:	Inorganic phosphorus compounds may cause irritation and hemorrhages in the stomach as well as liver and kidney damage. Bone structure may be attacked, especially the jaw and teeth Zinc containing fumes may cause metal fume fever. Effects include dry throat, metallic taste, chest pain, dyspnea, rales, and dry cough. Several hours later, chills may occur with lassitude, malaise, fatigue, headache, back pain, Muscle cramps, blurred vision, nausea, fever, perspiration, vomiting and leukocytosis. Phosphine, if generated, is a very toxic, flammable gas. The chief effects are central nervous system depression and lung irritation. Inhalation can cause coma and convulsions leading to death within 48 hours.

Signs & Symptoms: N/A
Aggravated Medical Conditions: N/A

Median Lethal Dose: 12 mg/kg for rat by mouth

Carcinogen: N/A

12. Ecological Information

Aquatic Toxicity:	High
Persistent Bioaccumulation Toxicity:	No
Very Persistent, Very Bioaccumulative:	No
Notes:	Toxic to aquatic life. May cause long lasting harmful effect on aquatic life. Do not allow material to be released to the environment without proper governmental permits. Do not allow product to reach any water sources. Danger to drinking water if even extremely small quantities leak into the ground. Also poisonous for fish and plankton in water bodies. Do not allow undiluted product or large quantities to reach ground water, water course or sewage system. Avoid transfer into the environment.

13. Disposal Considerations

Dispose of in accordance with local, state, national, and international regulations.

14. Transportation Data

Hazardous:	Hazardous for transportation.
	
Hazard Class:	4.3 Substances which, in contact with water, emit flammable gases
Secondary Class:	6.1 Toxic Substances
Packing Group:	I
UN Number:	UN1714
Proper Shipping Name:	Zinc Phosphide

15. Regulatory Information

Sec 302 Extremely Hazardous:	No
Sec 304 Reportable Quantities:	N/A
Sec 313 Toxic Chemicals:	Yes

16. Other Information

This safety data sheet should be used in conjunction with technical sheets. It does not replace them. The information given is based on our knowledge of this product, at the time of publication. It is given in good faith. The attention of the user is drawn to the possible risks incurred by using the product for any other purpose other than that for which it was intended. This does not in any way excuse the user from knowing and applying all the regulations governing his activity. It is the sole responsibility of the user to take all precautions required in handling the product. The aim of the mandatory regulations mentioned is to help the user to fulfill his obligations regarding the use of hazardous products.

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