

MATERIAL SAFETY DATA SHEET

Manufacturer: Strem Chemicals, Inc
 7 Mulliken Way
 Newburyport, MA 01950-4098 U.S.A.
 www.strem.com

Strem Customer Service (978) 499-1600
 CHEMTREC (Emergency Only) (800) 424-9300
 Poison Center (800) 562-8236

Section 1: Product Identification	
Chemical Name:	Calcium phosphide, 97%
Product Number:	93-2072
CAS Registry Number:	1305-99-3
Formula:	Ca ₃ P ₂
EINECS Number:	215-142-0
Chemical Family:	inorganic compound
Synonym:	Tricalcium diphosphide

Section 2: Composition and Information on Ingredients				
Ingredient	CAS Number	Percent	ACGIH (TWA)	OSHA (PEL)
Title Compound	1305-99-3	100%	no data	no data

Section 3: Hazards Identification	
Emergency Overview:	Dust is irritating to skin, eyes, and respiratory tract. Contact with moisture causes slow decomposition producing phosphine which on inhalation causes pain in the diaphragm, vertigo, dyspnea, pulmonary edema, convulsions and coma. Very toxic if swallowed.
Primary Routes of Exposure:	Ingestion, inhalation, skin, eyes.
Eye Contact:	Causes mild to severe irritation of the eyes.
Skin Contact:	Causes mild to severe irritation of the skin.
Inhalation:	Dust liberates poison gas in the presence of moisture. Irritating to the respiratory tract.
Ingestion:	Liberates toxic phosphine gas in contact with stomach acid. Very toxic if swallowed.
Acute Health Affects:	Nausea, vomiting, diarrhea, headache, fatigue and dizziness, persistent coughing, ataxia, tremor, jaundice, acute pulmonary edema, cardiac dysrhythmias, convulsions, cyanosis and coma. Irritating to eyes, skin, and respiratory tract.
Chronic Health Affects:	Chronic poisoning from inhalation or ingestion of phosphine/phosphides may cause toothache, swelling of the jaw, necrosis of mandible, weakness, weight loss, anemia, and spontaneous fractures.
NTP:	No
IARC:	No
OSHA:	No

SECTION 4: First Aid Measures	
Eye Exposure:	Immediately flush the eyes with copious amounts of water for at least 10-15 minutes. A victim may need assistance in keeping their eye lids open. Get immediate medical attention.
Skin Exposure:	Wash the affected area immediately with water. Remove contaminated clothing if necessary. Seek medical assistance if irritation persists.
Inhalation:	Remove the victim to fresh air. Closely monitor the victim for signs of respiratory problems, such as difficulty in breathing, coughing, wheezing, or pain. In such cases seek immediate medical assistance.
Ingestion:	Seek medical attention immediately. Keep the victim calm. Give the victim water (only if conscious). Induce vomiting only if directed by medical personnel.

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SECTION 5: Fire Fighting Measures

Flash Point: -126°F(PH3)
Autoignition Temperature: 212°F(PH3)
Explosion Limits: LEL(1.8%)(PH3)
Extinguishing Medium: carbon dioxide or dry powder
Special Fire Fighting Procedures: Do not use water. Fire fighters should be equipped with a NIOSH approved positive pressure self- contained breathing apparatus and full protective clothing.
Hazardous Combustion and Decomposition Products: Contact with moisture will liberate toxic and explosive phosphine gas.
Unusual Fire or Explosion Hazards: Reaction with acid and/or water may release Phosphine gas which is toxic and can ignite explosively.

SECTION 6: Accidental Release Measures

Spill and Leak Procedures: Use no water. Small spills can be mixed with vermiculite, sodium carbonate or other suitable non combustible adsorbent and swept up. Wastes may continue to emit toxic phosphine gas.

SECTION 7: Handling and Storage

Handling and Storage: Handle and store the material under a dry, inert atmosphere of nitrogen or argon in a well ventilated place. Do not allow spilled dust to accumulate.

SECTION 8: Exposure Controls and Personal Protection

Eye Protection: Always wear approved safety glasses when handling a chemical substance in the laboratory.
Skin Protection: Wear protective clothing and gloves. Consult with glove manufacturer to determine the proper type of glove.
Ventilation: Material may form a fine dust. If possible, handle the material in an efficient fume hood.
Respirator: This material should not be handled outside a properly ventilated fume hood. The use of respirators requires a Respirator Protection Program to be in compliance with 29 CFR 1910.134.
Ventilation: Material may form a fine dust. If possible, handle the material in an efficient fume hood.
Additional Protection: No additional protection required.

SECTION 9: Physical and Chemical Properties

Color and Form: 1/2" pieces and down
Molecular Weight: 182.19
Melting Point: ~1600°
Boiling Point: no data
Vapor Pressure: not applicable
Specific Gravity: 2.51
Odor: not determined
Solubility in Water: reacts with water

SECTION 10: Stability and Reactivity

Stability: moisture sensitive
Hazardous Polymerization: no hazardous polymerization
Conditions to Avoid: Contact with mineral acids or water may produce toxic phosphine gas.
Incompatibility: Water, mineral acids, oxidizing agents and halogens
Decomposition Products: Reaction with acid and/or steam may release Phosphine gas which is toxic and pyrophoric.

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SECTION 11: Toxicological Information

RTECS Data: No information available in the RTECS files.
Carcinogenic Effects: No data available
Mutagenic Effects: No data available
Tetratogenic Effects: No data available

SECTION 12: Ecological Information

Ecological Information: No information available

SECTION 13: Disposal Considerations

Disposal: Dispose of according to federal, state, and local regulations.

SECTION 14: Transportation

Shipping Name (CFR): Calcium phosphide
Hazard Class (CFR): 4.3
Additional Hazard Class (CFR): 6.1
Packaging Group (CFR): I
UN ID Number (CFR): UN# 1360
Shipping Name (IATA): Calcium phosphide
Hazard Class (IATA): 4.3
Additional Hazard Class (IATA): 6.1
Packaging Group (IATA): I
UN ID Number (IATA): UN# 1360

SECTION 15: Regulatory Information

TSCA: Listed in the TSCA inventory.
SARA (Title 313): Title compound not listed.
Second Ingredient: none
Third Ingredient: none

SECTION 16: Other Information

Disclaimer: The information herein is believed to be accurate and reliable as of the date compiled. However, Strem Chemicals, Inc. makes no representation, warranty, or guarantee of any kind with respect to the information contained in this document or any use of the product based on this information.
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