Centers for Disease Control and Prevention

The National Institute for Occupational Safety and Health (NIOSH)

Promoting productive workplaces through safety and health research NIOSH

White Phosphorus: Systemic Agent

CAS #: 7723-14-0

RTECS #: TH3500000

UN #: 1381 (Guide 136) 2447 (Guide 136)

Common Names:

- Elemental phosphorus
- Phosphorus
- Yellow phosphorus

Agent Characteristics

- **APPEARANCE**: White to yellow transparent, waxy crystalline solid. Turns dark on exposure to light.
- **DESCRIPTION**: White phosphorus is a toxic substance produced from phosphate-containing rocks. Industries use white phosphorus to manufacture chemicals used in fertilizers, food additives, and cleaning compounds. In the past, it was used as a pesticide and in fireworks. The military uses white phosphorus in various types of ammunition as an incendiary agent, because it spontaneously catches fire in air. They also use it as a smoke agent, because it produces clouds of irritating white smoke. It has a match-like or garlic-like, acrid odor, but do not depend on odor for detection of white phosphorus.
- **METHODS OF DISSEMINATION**:
  - Indoor Air: White phosphorus can release into indoor air as smoke.
  - Water: White phosphorus can contaminate water.
  - Food: White phosphorus cannot be used to contaminate food.
  - Outdoor Air: White phosphorus can enter outdoor air as smoke.
  - Agricultural: If white phosphorus releases as smoke, it is unlikely to contaminate agricultural products. However, particles of white phosphorus that do not react with air may contaminate agricultural products.
- **ROUTES OF EXPOSURE**: White phosphorus absorbs into the body when inhaled, ingested, or through skin contact. It is unknown whether systemic exposure can occur from eye contact.

Personal Protective Equipment

- **GENERAL INFORMATION**: When entering an area with an unknown contaminant or when entering an area where the concentration of the contaminant is unknown, first responders should wear a protective suit. First Responders should use a NIOSH-certified Chemical, Biological, Radiological, Nuclear (CBRN) Self Contained Breathing Apparatus (SCBA) with a Level A protective suit. Use Level A protection until monitoring results confirm the type and amount of contaminant. **NOTE:** Safe use of protective clothing and equipment requires specific skills from training and experience.
- **LEVEL A: (RED ZONE)**: Select when workers need the greatest level of skin, respiratory, and eye protection. This is the maximum protection for workers in danger of exposure to unknown chemical hazards or levels above the IDLH or greater than the AEGL-2.
  - A NIOSH-certified CBRN full-face-piece SCBA operated in a pressure-demand mode or a pressure-demand supplied air hose respirator with an auxiliary escape bottle.
  - A Totally-Encapsulating Chemical Protective (TECP) suit that protects against CBRN agents.
  - Chemical-resistant gloves (outer).
  - Chemical-resistant gloves (inner).

- Chemical-resistant boots with a steel toe and shank.
- Optional items: Coveralls, long underwear, and a hard hat worn under the TECP suit.

- LEVEL B: (RED ZONE): Select when workers need the highest level of respiratory protection but a lesser level of skin protection. This is the minimum protection for workers in danger of exposure to unknown chemical hazards or levels above the IDLH or greater than AEGL-2. It differs from Level A because it includes a non-encapsulating, splash-protective, chemical-resistant splash suit that protects against liquids but is not airtight.
  - A NIOSH-certified CBRN full-face-piece SCBA operated in a pressure-demand mode or a pressure-demand supplied air hose respirator with an auxiliary escape bottle.
  - A hooded chemical-resistant suit that protects against CBRN agents.
  - Chemical-resistant gloves (outer).
  - Chemical-resistant gloves (inner).
  - Chemical-resistant boots with a steel toe and shank.
  - Optional items: Coveralls, long underwear, a hard hat worn under the chemical-resistant suit, and chemical-resistant disposable boot-covers worn over the chemical-resistant suit.
- LEVEL C: (YELLOW ZONE): Select when: 1) workers know the contaminant and amount of the contaminant and 2) when meeting the respiratory protection criteria factors for using Air Purifying Respirators (APR) or Powered Air Purifying Respirators (PAPR). This level is appropriate when decontaminating patient/victims.
  - A NIOSH-certified CBRN tight-fitting APR with a canister-type gas mask or CBRN PAPR for air levels greater than AEGL-2.
  - A NIOSH-certified CBRN PAPR with a loose-fitting face-piece, hood, or helmet. It should include a filter or a combination organic vapor, acid gas, and particulate cartridge/filter combination or a continuous flow respirator for air levels greater than AEGL-1.
  - A hooded chemical-resistant suit that protects against CBRN agents.
  - Chemical-resistant gloves (outer).
  - Chemical-resistant gloves (inner).
  - Chemical-resistant boots with a steel toe and shank.
  - Optional items: Escape mask, face shield, coveralls, long underwear, a hard hat worn under the chemical-resistant suit, and chemical-resistant disposable boot-covers worn over the chemical-resistant suit.
- LEVEL D: (GREEN ZONE): Select when workers know the type and amount of contaminant and the amount is below the appropriate occupational exposure limit or less than AEGL-1 for the stated duration times.
  - Limited to coveralls or other work clothes, boots, and gloves.

Emergency Response

- CHEMICAL DANGERS:
  - Phosphorus spontaneously ignites on contact with air, producing toxic fumes (phosphorus oxides).
  - Phosphorus reacts violently with oxidants, halogens, some metals, nitrites, sulfur, and many other compounds. This causes a fire and explosion hazard.
  - Phosphorus reacts with strong bases to produce toxic phosphine gas.
- EXPLOSION HAZARDS:
  - Phosphorus reacts violently with oxidants, halogens, some metals, nitrites, sulfur, and many other compounds, causing an explosion hazard.
  - Upper and lower explosive (flammable) limits in air are not available for white phosphorus.
- FIRE FIGHTING INFORMATION:
  - White phosphorus is extremely flammable.
  - Phosphorus will spontaneously ignite if exposed to air.
  - Phosphorus ignites at approximately 86°F (30°C) in air; the ignition temperature is higher when the air is dry.
  - Phosphorus reacts violently with oxidants, halogens, some metals, nitrites, sulfur, and many other compounds, causing a fire hazard.
  - The agent burns rapidly, releasing dense, white irritating fumes.

- The agent can be transported in a molten form.
- The agent may re-ignite after a fire is extinguished.
- For small fires, use cold water spray, wet sand, or wet earth.
- For large fires, use cold water spray or fog. Do not scatter spilled material with high-pressure cold water streams. Move containers from the fire area if it is possible to do so without risk to personnel.
- Fight fires involving tanks or car/trailer loads from maximum distance or use unmanned hose holders or monitor nozzles. Cool containers with flooding quantities of cold water until well after the fire is out. Withdraw immediately in case of rising sound from venting safety devices or discoloration of tanks. Always stay away from tanks engulfed in fire.
- Run-off from fire control may be corrosive and/or toxic, and it may cause pollution.
- If the situation allows, control and properly dispose of run-off (effluent).

- INITIAL ISOLATION AND PROTECTIVE ACTION DISTANCES:
  - Isolate tanks, rail cars, or tank trucks involved in fires for 0.5 mi (800 m) in all directions. Also consider initial evacuation for 0.5 mi (800 m) in all directions.
  - This agent is not listed in the DOT ERG 2004 Table of Initial Isolation and Protective Action Distances.
  - Immediately isolate a white phosphorus spill or leak area for at least 150 ft (50 m) for liquids and 75 ft (25 m) for solids in all directions. This and other public safety recommendations are in the DOT ERG 2004 orange-bordered section of the guidebook (Guide 136).
- PHYSICAL DANGERS:
  - Not established/determined
- NFPA 704 Signal:
  - **Health:** 4
  - **Flammability:** 4
  - **Reactivity:** 2
  - **Special:**

- SAMPLING AND ANALYSIS:
  - OSHA: Not established/determined
  - NIOSH: 7905
- ADDITIONAL SAMPLING AND ANALYSIS INFORMATION:

  References are provided for the convenience of the reader and do not imply endorsement by NIOSH.
  - AIR MATRIX

    Brazell RS, Holmberg RW, Moneyhun JH [1984]. Application of high-performance liquid chromatography-flow injection analysis for the determination of polyphosphoric acids in phosphorus smokes. J Chromatogr A 290:163-172.
  - OTHER

    Johnston, JJ, Goldade, DA, Kohler DJ, Cummings, JL [2000]. Determination of white phosphorus residues in ducks: an atomic emission detection/compound-independent calibration-based method of generating residue data for risk assessment and environmental monitoring. Environ Sci Technol 34(9):1856-1861.Norman KNT, Leonard K [2000]. Gas chromatography-mass spectrometry determination of phosphine residues in stored products and processed foods. J Agric Food Chem 48(9): 4066-4070.
  - SOIL MATRIX

    EPA [1996]. Method 7580: White phosphorus (P4) by solvent extraction and gas chromatography. Cincinnati, OH: U.S. Enironmental Protection Agency.Lytle NW, Hill MW, Lambert KE, Mangelson NF, Kwak SSW [1985]. Proton-induced X-ray emission analysis of munitions disposal residues. Nuclear Instruments and Methods in Physics Research Section B: Beam Interactions with Materials and Atoms
    10-11(2):650-652.
    Walsh ME, Taylor S [1993]. Analytical method for white phosphorus residues in munitions-contaminated sediments. Anal Chim Acta 282(1):55-61.
  - SURFACES

    No references were identified for this sampling matrix for this agent.

- WATER
  EPA [1996]. Method 7580: White phosphorus (P4) by solvent extraction and gas chromatography. Cincinnati, OH: U.S. Environmental Protection Agency.Walsh ME [1995]. Analytical method for white phosphorus in water. Bull Environ Contam Toxicol 54:432-439.

Signs/Symptoms

- TIME COURSE: Exposure to white phosphorus may cause immediate burns that heal slowly. Systemic toxicity from white phosphorus exposure is categorized into 3 phases. The first phase (gastrointestinal) occurs a few minutes to 8 hours following white phosphorus exposure. Shock during this phase may be severe enough to cause death in 24 to 48 hours. The second phase (asymptomatic) follows the first phase and lasts for 8 hours to 3 days. The third phase (multi-organ failure and central nervous system injury) may begin 4 to 8 days after the second phase begins, and may end in death.
- EFFECTS OF SHORT-TERM (LESS THAN 8-HOURS) EXPOSURE: White phosphorus burns in air and causes severe burns upon contact with skin or eyes. White phosphorus smoke will also cause eye and respiratory tract irritation. Other initial adverse health effects are primarily due to gastrointestinal irritation.
- EYE EXPOSURE:
  - White phosphorus fumes cause severe irritation and the sensation of a foreign body in the eye. This leads to excessive tear production (lacrimation), spasmodic blinking (blepharospasm), and increased sensitivity to light (photophobia).
  - White phosphorus particles are caustic and seriously damaging when in contact with tissues. They cause damage to the cornea. Examples include perforation, inflammation of the interior of the eyeball (endophthalmitis), and abnormal turning out of the eyelid (ectropion).
- INGESTION EXPOSURE:
  - Stage 1:
    - Feeling of warmth or burning pain in the throat and abdomen accompanied by feelings of intense thirst;
    - Nausea, vomiting (emesis), diarrhea, and severe abdominal pain;
    - Garlic odor to the breath, vomitus, and feces;
    - Vomitus and feces may glow (luminesce) and are capable of causing burns on contact with skin;
    - Death may occur within 24 to 48 hours due to complete cardiovascular collapse.
- INHALATION EXPOSURE:
  - Expect eye and upper respiratory tract irritation.
  - Delayed onset of accumulation of fluid in the lungs (pulmonary edema) is possible.
  - Whole-body (systemic) effects may also occur.
  - See Ingestion Exposure.
- SKIN EXPOSURE:
  - White phosphorus causes severely painful, partial (second degree) to full thickness (third degree) burns, which have a characteristic yellow color and garlic-like odor. Smoke may release from the burn site from the continued burning of white phosphorus or the formation of phosphoric acid.
  - White phosphorus is highly fat soluble, and easily absorbed through the skin, possibly causing whole-body (systemic) effects.
  - See Ingestion Exposure

Decontamination

- INTRODUCTION: The purpose of decontamination is to remove toxic substances quickly and effectively for the safety of an individual and/or their equipment. Carefully decontaminate because absorbed agent can release from clothing and skin as a gas. Your Incident Commander will provide you with decontaminants specific for the agent released or the agent believed to have been released.
- DECONTAMINATION CORRIDOR: The following are recommendations to protect the first responders from the release area:
  - Position the decontamination corridor upwind and uphill of the hot zone. The warm zone should include two decontamination corridors. One decontamination corridor is used to enter the warm zone and the other for exiting

the warm zone into the cold zone. The decontamination zone for exiting should be upwind and uphill from the zone used to enter.
    - Decontamination area workers should wear appropriate PPE. See the PPE section of this card for detailed information.
    - A solution of detergent and water with a pH value of at least 8 but not higher than 10.5 should be available for decontamination procedures. Soft brushes should be available to remove contamination from the PPE. Labeled, durable 6-mil polyethylene bags should be available for disposal of contaminated PPE.
- INDIVIDUAL DECONTAMINATION: The following methods can be used to decontaminate an individual:
    - Decontamination of First Responder:
        - Begin washing PPE of the first responder using soap and cool water solution and a soft brush. Always move in a downward motion (from head to toe). Make sure to get into all areas, especially folds in the clothing. Wash and rinse (using cool water) until the contaminant is thoroughly removed.
        - Remove PPE by rolling downward (from head to toe) and avoid pulling PPE off over the head. Remove the SCBA after other PPE is removed.
        - Wash PPE down with cool water to remove any white phosphorus particles before placing it into labeled durable 6-mil polyethylene bags.
    - Decontamination of Patient/Victim:
        - Remove the patient/victim from the contaminated area and into the decontamination corridor.
        - Remove all clothing (at least down to their undergarments) and place the clothing in a labeled durable 6-mil polyethylene bag.
        - Thoroughly wash and rinse the contaminated skin of the patient/victim using a soap and water solution with cold water. Be careful not to break the patient/victim's skin during the decontamination process, and cover all open wounds.
        - Cover the patient/victim to prevent shock and loss of body heat.
        - Move the patient/victim to an area where emergency medical treatment is available.

First Aid

- GENERAL INFORMATION: Initial treatment is primarily supportive. In cases of skin or eye exposure, immediately remove burning particles of white phosphorus from the patient/victim's eyes or skin. If skin or eyes are contaminated with white phosphorus, cover them with cool wet cloths to avoid re-ignition.
- ANTIDOTE: There is no antidote for white phosphorus toxicity.
- EYE:
    - Immediately remove the patient/victim from the source of exposure.
    - Immediately wash eyes with large amounts of cool water for at least 15 minutes.
    - Keep exposed eyes covered with wet compresses to prevent white phosphorus particles from re-igniting.
    - Avoid applying any lipid- or oil-based ointments, which may increase the absorption of white phosphorus.
    - Consider applying an eye cage to prevent direct pressure applied to the eyeball.
    - Seek medical attention immediately.
- INGESTION:
    - Immediately remove the patient/victim from the source of exposure.
    - Ensure that the patient/victim's airway is not obstructed.
    - Do not induce vomiting (emesis).
    - Monitor heart function. Evaluate for low blood pressure (hypotension), abnormal heart rhythms (dysrhythmias), and reduced respiratory function (respiratory depression).
    - Evaluate for low blood sugar (hypoglycemia), electrolyte disturbances, and low oxygen levels (hypoxia).
    - If there is evidence of shock or low blood pressure (hypotension), begin intravenous (IV) fluid administration.
    - Seek medical attention immediately.
- INHALATION:
    - Immediately remove the patient/victim from the source of exposure.

- Evaluate respiratory function and pulse.
- Ensure that the patient/victim's airway is not obstructed.
- If shortness of breath occurs or breathing is difficult (dyspnea), administer oxygen.
- Assist ventilation as required. Always use a barrier or bag-valve-mask device.
- If breathing has ceased (apnea), provide artificial respiration.
- Monitor for respiratory compromise, respiratory distress, and accumulation of fluid in the lungs (pulmonary edema).
- Monitor the patient/victim for signs of whole-body (systemic) effects and administer treatment as necessary based on symptoms.
- Seek medical attention immediately.

- SKIN:
  - Immediately remove the patient/victim from the source of exposure.
  - See the Decontamination section for patient/victim decontamination procedures.
  - Immerse areas of affected skin in cold water or cover them with wet dressings at all times.
  - Vigorous irrigation with cold water is the best way to remove white phosphorous embedded in the skin.
  - Remove visible particles of white phosphorus while washing with large amounts of cold water or while the area is submerged in cold water.
  - The use of cold water is critical, but be careful to guard the patient/victim against hypothermia.
  - Immediately place any removed particles of white phosphorus into a container of cold water to reduce risk to medical personnel and others.
  - Avoid applying any lipid- or oil-based ointments, which may increase the absorption of white phosphorus.
  - Monitor the patient/victim for signs of whole-body (systemic) effects.
  - If signs of whole-body (systemic) poisoning appear, see the Ingestion section for treatment recommendations.
  - Seek medical attention immediately.

Long-Term Implications

- MEDICAL TREATMENT: Treat hypotension with IV fluids. Treat seizures with benzodiazepines. For ingestion or extensive skin exposure, correct low blood levels of calcium (hypocalcemia) with IV calcium gluconate (adult and child dose: 0.1 to 0.2 mL/kg up to 10 mL/dose of a 10% solution; repeat the dose if necessary) or calcium chloride. Some patient/victims with abnormal heart rhythms may require application of an electric shock (cardioversion) to restore normal heartbeat, plus additional treatment. For skin exposure, consider using an ultraviolet (UV) light source (black light, Wood's lamp) to see phosphorus particles more easily. Phosphorus particles should glow (fluoresce) under UV light. With the exposed areas immersed in cold water (to avoid ignition) carefully remove all visualized phosphorus particles (either loose or imbedded). The use of cold water has the potential to induce hypothermia. Take steps to guard against hypothermia. Place particles of phosphorus that were removed in cold water-filled containers to prevent risk to medical personnel and others. Consultation with an ophthalmologist is required for eye exposure.
- DELAYED EFFECTS OF EXPOSURE:
  - Stage 2: If the patient/victim survives Stage 1, clinical improvement and a symptom-free interval occur for several days.
  - Stage 3: Nausea, vomiting (bloody; hematemesis), and diarrhea; liver enlargement and tenderness and clinical signs of liver damage; blood vessels become fragile and blood stops clotting properly, resulting in bleeding into the skin, mucous membranes, and various organs; severe kidney damage and failure; seizures, delirium, and coma; cardiovascular collapse; and death may occur within 4 to 8 days.
- EFFECTS OF CHRONIC OR REPEATED EXPOSURE: White phosphorus is not classifiable as a carcinogen. However, it is not a suspected carcinogen. It is unknown whether chronic or repeated exposure to white phosphorus increases the risk of reproductive toxicity or developmental toxicity. Chronic industrial inhalation exposure to white phosphorus fumes has resulted in various symptoms. Examples include general disability, inflammation of the large airways (bronchitis), anemia, physical wasting and malnutrition (cachexia), and destruction of the jaw bones, called "phossy jaw" or "Lucifer's jaw."

On-Site Fatalities

- INCIDENT SITE:
  - Consult with the Incident Commander regarding the agent dispersed, dissemination method, level of PPE required, location, geographic complications (if any), and the approximate number of remains.
  - Coordinate responsibilities and prepare to enter the scene as part of the evaluation team along with the FBI HazMat Technician, local law enforcement evidence technician, and other relevant personnel.
  - Begin tracking remains using waterproof tags.
- RECOVERY AND ON-SITE MORGUE:
  - Wear PPE until confirming all remains are free of contamination.
  - Establish a preliminary (holding) morgue.
  - Gather evidence, and place it in a clearly labeled impervious container. Hand any evidence over to the FBI.
  - Remove and tag personal effects.
  - Perform a thorough external evaluation and a preliminary identification check.
  - See the Decontamination section for decontamination procedures.
  - Decontaminate remains before removing from the incident site.

See Guidelines for Mass Fatality Management During Terrorist Incidents Involving Chemical Agents, U.S. Army Soldier and Biological Chemical Command (SBCCOM), November, 2001 for detailed recommendations.

Occupational Exposure Limits

- NIOSH REL:
  - TWA (10-hour): 0.1 mg/m^3
- OSHA PEL:
  - TWA (8-hour): 0.1 mg/m^3
- ACGIH TLV:
  - TWA (8-hour): 0.1 mg/m^3
- NIOSH IDLH: 5 mg/m^3
- DOE TEEL:
  - TEEL-0: 0.1 mg/m^3
  - TEEL-1: 0.3 mg/m^3
  - TEEL-2: 3 mg/m^3
  - TEEL-3: 5 mg/m^3
- AIHA ERPG:
  - ERPG-1: Not established/determined
  - ERPG-2: Not established/determined
  - ERPG-3: Not established/determined

Acute Exposure Guidelines [Proposed]

	10 min	30 min	60 min	4 hr	8 hr
AEGL 1 (discomfort, non-disabling) – mg/m^3	6.7 mg/m^3	4.7 mg/m^3	3.7 mg/m^3	0.93 mg/m^3	0.47 mg/m^3

	10 min	30 min	60 min	4 hr	8 hr
AEGL 2 (irreversible or other serious, long-lasting effects or impaired ability to escape) – mg/m³	20 mg/m³	14 mg/m³	11 mg/m³	2.8 mg/m³	1.4 mg/m³
AEGL 3 (life-threatening effects or death) – mg/m³	85 mg/m³	59 mg/m³	47 mg/m³	12 mg/m³	5.9 mg/m³

NOTE THAT VALUES ARE IN mg/m3, NOT ppm.

Technical Support Document

IMPORTANT NOTE: Proposed AEGLs are established following review and consideration by the National Advisory Committee for AEGLs (NAC/AEGL) of Draft AEGLs. Proposed AEGLs are available for use by organizations while awaiting public comments and NRC/NAS peer review and publication of Final AEGLs. **Changes to Proposed values and Technical Support Documents may occur before AEGLs become interim values.** In some cases, revised Proposed values may be posted on this Web site, but the revised Proposed Technical Support Document for the chemical may be subject to change. (Further information is available through AEGL Process).

Decontamination (Environment and Equipment)

- **ENVIRONMENT/SPILLAGE DISPOSAL**: The following methods can help decontaminate the environment/spillage disposal:
  - Do not touch or walk through the spilled agent if at all possible. However, if you must, personnel should wear the appropriate PPE during environmental decontamination. See the PPE section of this card for detailed information.
  - Keep combustibles (e.g., wood, paper, and oil) away from the spilled agent. Use water spray to reduce vapors or divert vapor cloud drift. Avoid allowing water runoff to contact the spilled agent.
  - Do not direct water at the spill or the source of the leak.
  - Stop the leak if it is possible to do so without risk to personnel. Turn leaking containers so that gas rather than liquid escapes.
  - Prevent entry into waterways, sewers, basements, or confined areas.
  - Isolate the area until gas has dispersed.
  - Ventilate the area.
- **EQUIPMENT**: Agents can seep into the crevices of equipment making it dangerous to handle. The following methods can help decontaminate equipment:
  - Not established/determined

Agent Properties

- **Chemical Formula:**
  P_4
- **Aqueous solubility:**
  Soluble
- **Boiling Point:**
  536°F (280°C)
- **Density:**
  Solid: 1.83 g/cm³ at 68°F (20°C)
  Vapor: 4.42 (air = 1)
- **Flammability:**
  Flammable

- **Flashpoint:**
  68°F (20°C)
- **Ionization potential:**
  Not established/determined
- **Log $K_{benzene\text{-}water}$:**
  Not established/determined
- **Log K_{ow} (estimated):**
  -0.27
- **Melting Point:**
  111°F (44.1°C)
- **Molecular Mass:**
  124.0
- **Soluble In:**
  Alcohols
  Bases
- **Specific Gravity:**
  1.82
- **Vapor Pressure:**
  0.026 mm Hg at 68°F (20°C)
  0.181 mm Hg at 111°F (44.1°C)
- **Volatility:**
  Volatile

Hazardous Materials Warning Labels/Placards

- **Shipping Name:**
  Phosphorus, white, dry (1381)
  Phosphorus, white, under water (1381)
  Phosphorus, white, in solution (1381)
  Phosphorus, yellow, dry (1381)
  Phosphorus, yellow, under water (1381)
  Phosphorus, yellow, in solution (1381)
  Phosphorus, white, molten (2447)
- **Identification Number:**
  1381 (Guide 136)
  2447 (Guide 136)
- **Hazardous Class or Division:**
  4.2
- **Subsidiary Hazardous Class or Division:**
  6.1
- **Label:**
  Spontaneously Combustible
  Poison (Toxic)
- **Placard Image:**

Trade Names and Other Synonyms

- Amgard CPC
- Bonide Blue Death Rat Killer
- Exolit 385, 405
- Exolit LPKN, LPKN 275
- Exolit RP 605, 650, 652, 654
- Exolit VPK-N 361
- Fosforo bianco (Italian)
- Gelber phosphor (German)
- Hishigado
- Hishigado AP, CP, NP10, or PL
- Hostaflam RP 602, 614, 622, or 654
- Masteret 70450
- Nova Sol R 20
- Novaexcel 140, 150, F 5, ST 100, ST 140, or ST 300
- Novared 120UF, 120UFA, 120VFA, 140, 280, C 120 or F5
- NVE 140
- Phosphore blanc (French)
- Phosphorous (white)
- Phosphorus, white, molten (dry)
- Phosphorus-31
- Rat-Nip
- Tetrafosfor (Dutch)
- Tetraphosphor
- Weiss phosphor (German)

Who to Contact in an Emergency

In the event of a poison emergency, call the poison center immediately at 1-800-222-1222. If the poisoned person cannot wake up, has a hard time breathing, or has convulsions, call 911 emergency services.

For information on who to contact in an emergency, see the CDC website at emergency.cdc.gov or call the CDC public response hotline at (888) 246-2675 (English), (888) 246-2857 (Español), or (866) 874-2646 (TTY).

Important Notice

The user should verify compliance of the cards with the relevant STATE or TERRITORY legislation before use. NIOSH, CDC 2003.

Page last reviewed: October 20, 2021