



Pentagon Reports: Fast. Definitive. Complete.

[Home](#) [About Us](#) [Contact Us](#) [View Cart](#) [My Account](#) [FAQ](#)

username

LOGIN

[New Account »](#)
[Forgot Password?](#)

White Phosphorus



[Advanced Search »](#)

Newsletter

To be informed of important news about our site, enter your email here. You can always unsubscribe later. Your address will not be released to others. (Read our Privacy Policy)

Your name

Your email

Unsubscribe »

SUBMIT

Search Results for: White Phosphorus

Total Results: **58**

Pages: Previous [\[1\]](#) [Next](#)

Results per page:
50

Sort by: [Relevancy](#) [Title](#) [Date](#) [Pages](#) [Display:](#) [Full Text Only](#)

[White Phosphorus Contamination of Salt Marsh Pond Sediments at Eagle River Flats,](#)

Oct 1993 72 pages

[Alaska](#)

Authors: [Charles H. Racine](#); [Marianne E. Walsh](#); [Charles M. Collins](#); [Susan Taylor](#); [Bill D. Roebuck](#); [BATTELLE MEMORIAL INST COLUMBUS OH](#)

Full Text

... due to the ingestion of highly toxic particles of **white phosphorus** that entered the bottom sediments of shallow ... sediments preserved the normally highly reactive **white phosphorus**. In 1991 we delineated the extent ... marsh. Sediment and tissue samples were analyzed for **white phosphorus** by gas chromatography ... cm. The distribution and highest concentrations of **white phosphorus** were localized in two of the six ... become sick showed close correlation with **white phosphorus** contamination in the sediments, dead waterfowl ... various Cook Inlet marshes. Alaska, Wetlands, Munition residues, **White phosphorus**, Waterfowl ...

[Persistence of White Phosphorus Particles in Sediment](#)

Nov 1995 51 pages

Authors: [Marianne E. Walsh](#); [Charles M. Collins](#); [Charles H. Racine](#); [COLD REGIONS RESEARCH AND ENGINEERING LAB HANOVER NH](#)

Full Text

... of sediments at Eagle River Flats, a salt marsh contaminated with particles of **white phosphorus** (P4), may require severe alterations of the wetland by ... covering. However, some sediments may undergo decontamination naturally in areas that are seasonally exposed to air. To predict the persistence of **white phosphorus** particles in sediments, a literature review was conducted for the ... **white phosphorus** particles was studied by laboratory and field experiments. **White phosphorus** particles were found to be persistent indefinitely in saturated sediments. In unsaturated sediments, loss was rapid (within 24 ...

[Environmental Fate of White Phosphorus/Felt and Red Phosphorus/Butyl Rubber Military](#)

Apr 1983 56 pages

[Screening Smokes. Phase I. Literature Review](#)

Authors: [R. J. Spanggard](#); [R. T. Podoll](#); [R. T. Rewick](#); [T. W. Chou](#); [R. B. Wilson](#); [SRI INTERNATIONAL MENLO PARK CA](#)

Full Text

... phase of the project was to review the literature for data that can be used to estimate the persistence of **white** and red **phosphorus** and their combustion products in air, soil, and aquatic environments and to ... We conclude that oxidation will be an extremely important process for **white** and red **phosphorus** and that hydrolysis reactions will dominate the transformation of **phosphorus** oxides in the presence of moisture. We recommend that screening studies ... conditions. Originator supplied key words include: **White phosphorus**, Red **phosphorus**, Transformation products, Rate constant, Fate ...

[Simple Field Screening Method for White Phosphorus \(P4\) in Sediment](#)

Oct 1995 13 pages

Authors: [Marianne E. Walsh](#); [Charles H. Racine](#); [Charles M. Collins](#); [Carl Bouwkamp](#); [Philip G. Thorne](#); [COLD REGIONS RESEARCH AND ENGINEERING LAB HANOVER NH](#)

Full Text

A simple field screening method to detect **white phosphorus** particles in sediment is described. A thin layer of wet sediment is heated until all water evaporates. The presence of **white phosphorus** is indicated by visual detection of the inflammation of **white phosphorus** particles that The field screening method consistently gave positive results for samples where solvent extraction followed by gas chromatography indicated **white phosphorus** concentrations above 1 micrograms/g. A more sophisticated method, based on solid-phase microextraction and gas chromatography determination, was also ...

[Method for Producing Performance Evaluation Soil/Sediment Samples for White Phosphorus Analysis](#)

Sep 1996 16 pages

Authors: [Marianne E. Walsh](#); [COLD REGIONS RESEARCH AND ENGINEERING LAB HANOVER NH](#)

Full Text

... samples are not commercially available for many contaminants. This report describes the development of performance evaluation samples for **white phosphorus** (P4) analysis. To represent the wide range of ... were prepared. High concentration samples contained particulate **white phosphorus** in wet soil, and concentrations were stable for ... 100 days. Low concentration soil samples containing **white phosphorus** dissolved in water or organic solvent were unstable. ... glass beads were substituted for the soil, and a solution of **white phosphorus** in mineral oil added, concentrations were stable for ...

[Composite Sampling of Sediments Contaminated with White Phosphorus](#)

Dec 1997 26 pages

Authors: [Marianne E. Walsh](#); [Charles M. Collins](#); [Ronald N. Bailey](#); [Clarence L. Grant](#); [COLD REGIONS RESEARCH AND ENGINEERING LAB HANOVER NH](#)

White phosphorus from exploded munitions is a difficult contaminant to characterize in the environment. Spatial heterogeneity of concentration estimates is extreme, ... the site and monitoring the remedial process for an area contaminated by **white phosphorus**. For each method, closely spaced discrete samples were ... The composites were then divided by size fractions. Mean **white phosphorus** concentrations were estimated for the fine-grain-size fraction that was obtained by suspension with water. The presence of highly toxic solid **white phosphorus** particles, the form that may be ingested by feeding ...

[Full Text](#)

[Mammalian Toxicology and Toxicity to Aquatic Organisms of **White Phosphorus** and 'Phossy Water', A Waterborne Munitions Manufacturing Waste Pollutant - A Literature](#)

Nov 1973 52 pages

[Evaluation](#)

Authors: [Dickinson Burrows](#); [Jack C. Dacre](#); [AWARE INC NASHVILLE TN](#)

Elemental **white phosphorus** is highly toxic to both experimental animals and man. Ingestion of even small amounts may produce severe gastrointestinal irritation, bloody diarrhea, liver ... characterized by such effects on the osseous system as bony necrosis ('phossy jaw'), spontaneous fractures, as well as by anemia and weight loss. **White phosphorus** appears to be noncarcinogenic when fed to experimental animals. **White phosphorus** is also highly toxic to aquatic animals. Crustaceans and many molluscs are more tolerant, but still succumb to **phosphorus** concentrations of 1 ppm or less.

[Full Text](#)

[Water Quality Criteria for **White Phosphorus**](#)

Aug 1987 140 pages

Authors: [Kowetha A. Davidson](#); [Patricia S. Hovatter](#); [Catherine F. Sigmon](#); [OAK RIDGE NATIONAL LAB TN](#)

Data obtained from a review of the literature concerning the environmental fate and aquatic and mammalian toxicity of **white phosphorus** are presented in order to derive Water Quality Criteria for the protection of humans and aquatic organisms and their uses. Laboratory and field studies indicate that **white phosphorus** is quite toxic to aquatic organisms, with fish being more sensitive than macroinvertebrates. In dynamic bioassays with fishes, bluegill was the most sensitive species. The most sensitive life stages for ...

[Full Text](#)

[Design, Development, Test, and Evaluation of a Level C Interplant Shipment Pallet for 60 mm M722 **White Phosphorus** Filled Body Assemblies](#)

Feb 1993 25 pages

Authors: [Yuen H. Lam](#); [ARMY ARMAMENT RESEARCH DEVELOPMENT AND ENGINEERING CENTER PICATINNY ARSENAL N J ARMAMENT ENGINEERING DIRECTORATE](#)

... , and evaluation program to qualify a wooden pallet assembly (drawing 12937963) that is needed for interplant and storage of 60 mm M722 **white phosphorus** filled body assemblies. The final pallet design met the U.S. Department of Defense standard, MIL-STD-1905, as well as the performance oriented ... is recommended for use as reference for other similar shipment and storage requirements.... 60-mm mortar, M722 cartridge, Shipment pallet, **White phosphorus**, Body assembly, Performance oriented packaging, Plywood partitions, Steel straps, POP.

[Full Text](#)

[Development of an Analytical Method for **White Phosphorus \(P4\)** in Water and Sediment Using Solid-Phase Microextraction](#)

Aug 1996 19 pages

Authors: [Marianne E. Walsh](#); [Susan Taylor](#); [Philip G. Thorne](#); [COLD REGIONS RESEARCH AND ENGINEERING LAB HANOVER NH](#)

Headspace solid-phase microextraction (SPME) methods were developed for **white phosphorus** in water and sediment/soil to minimize waste generated by methods based on solvent extraction. Headspace SPME provided a rapid, non- exhaustive extraction, based on equilibrium, of **white phosphorus**. Comparison of results obtained by headspace SPME and solvent extraction shows that headspace SPME may be used quantitatively for some water matrices and qualitatively for more complex matrices such as sediment/soil. Because detection ...

[Full Text](#)

[Remediating and Monitoring **White Phosphorus** Contamination at Eagle River Flats \(Operable Unit C\), Fort Richardson, Alaska](#)

Aug 2001 95 pages

Authors: [M. E. Walsh](#); [C. H. Racine](#); [C. M. Collins](#); [M. R. Walsh](#); [R. N. Bailey](#); [ENGINEER RESEARCH AND DEVELOPMENT CENTER HANOVER NH COLD REGIONS RESEARCH AND ENGINEERING LAB](#)

... , Alaska, and U.S. Army Alaska, Public Works, describing the results of research, monitoring, and remediation efforts addressing the **white phosphorus** contamination in Eagle River Flats, an 865-ha estuarine salt marsh on Fort Richardson, Alaska. Fort Richardson is on the ... pumps kept the ponds drained for an extended period during the summer, allowing the pond bottom sediments to dry and the **white phosphorus** to sublime and oxidize. The logistics continued to be fine-tuned, leading to a more effective and efficient operation this year. The combination ...

[Full Text](#)

[Environmental Assessment for the Use of **White Phosphorus** Rockets at Melrose Air Force Range, New Mexico](#)

Aug 2003 152 pages

Authors: [AIR COMBAT COMMAND LANGLEY AFB VA](#)

... resources. WP rocket use would have minimal adverse consequences to safety, materials management, physical, biological, and cultural resources. **White phosphorus** can create handling safety risks, potential water and soil contamination, and increased fire risk. Cannon AFB ... cause ground disturbance. Potential risks to soil and water are minimal as the environmental conditions at Mel rose AFR are not conducive for **white phosphorus** to remain in its reactive state. Alternative A avoids the more environmentally sensitive areas on the south range.

[Full Text](#)

[Summary and Evaluation for **White Phosphorus** Remediation: A Literature Review](#)

Oct 1996 72 pages

Authors: [Yilda B. Rivera](#); [Trudy Olin](#); [R. M. Bricka](#); [ARMY ENGINEER WATERWAYS EXPERIMENT STATION VICKSBURG MS](#)

This report summarizes an extensive literature search that was conducted regarding the environmental fate of **white phosphorus** (WP) and applicable treatment technologies. The health risks associated with WP exposure, documented environmental effects, transformation processes, degradation products, and the ... oxygen. However, Berkowitz et al. (1981), in assessing the potential hazards associated with the use of **phosphorus** smoke munitions, reported that WP residues in aquatic systems can be extremely toxic. Berkowitz stated that ...

[Full Text](#)

[RECOMMENDATION FOR A SAFER TREATMENT OF WHITE PHOSPHORUS BURNS](#)

Sep 20, 1967 13 pages

Authors: [R. Quentin Blackwell](#); [NAVAL MEDICAL RESEARCH UNIT NO 2 MANILA \(PHILIPPINES\) DEPT OF BIOCHEMISTRY](#)

One to three per cent solutions of copper sulfate have been used in the treatment of wound areas of casualties suffering **white phosphorus** burns. Excessive copper absorption with acute toxicity reportedly has occurred in some cases where such solutions have been left in contact with appreciable areas of open wound for extended intervals of time. Laboratory tests suggest that 0.05 per cent copper sulfate is equally effective. Field trials are recommended.

[Full Text](#)

[Physical Processes and Natural Attenuation Alternatives for Remediation of White Phosphorus Contamination, Eagle River Flats, Fort Richardson, Alaska](#)

Dec 1996 75 pages

Authors: [Daniel E. Lawson](#); [Lewis E. Hunter](#); [Susan R. Bigl](#); [COLD REGIONS RESEARCH AND ENGINEERING LAB HANOVER NH](#)

This report describes the results of investigations into the role of tidal flat physical systems in the natural attenuation of **white phosphorus** (WP) contamination in Eagle River Flats (ERF) on Fort Richardson, Alaska. Waterfowl feeding in ponds and marshes here ingest the WP and die. These investigations found that natural attenuation and in-situ degradation of the WP could result from certain physical phenomena operating within the EFF ecosystem. Specifically, the on-going erosion and headward recession in the gullies ...

[Full Text](#)

[Dredging as Remediation for White Phosphorus Contamination at Eagle River Flats, Alaska](#)

Aug 1998 36 pages

Authors: [Michael R. Walsh](#); [Charles M. Collins](#); [COLD REGIONS RESEARCH AND ENGINEERING LAB HANOVER NH](#)

The Eagle River Flats impact area is a Ft. Richardson Superfund site. It is a salt marsh that is contaminated with **white phosphorus** (WP), and remediation of sediments in permanently ponded areas may require dredging. A remotely piloted dredging system was designed, constructed, and deployed at the Flats as part of the overall site remediation feasibility study. Experience gained over two years of engineering study and contract operation indicates that, although feasible and effective, this alternative is slow, difficult, and very expensive.

[Full Text](#)

[A Literature Review - Problem Definition Studies on Selected Toxic Chemicals. Volume 2. Occupational Health and Safety Aspects of Phosphorus Smoke Compounds](#)

Apr 1978 104 pages

Authors: [Khizar Wasti](#); [K. J. R. Abaidoo](#); [Jon E. Villalume](#); [FRANKLIN INST RESEARCH LABS ROCKVILLE MD SCIENCE INFORMATION SERVICES DEPT](#)

... on toxicological aspects and health hazards of **phosphorus** smoke compounds. The compounds covered in this study are red **phosphorus**, **white phosphorus**, butyl rubber/red **phosphorus** ... , and epoxy **white phosphorus**. The subjects covered in this review are chemical and physical properties, ... has not been studied very well. **White phosphorus** has been found to be highly toxic ... experimental animals and humans. Occupational exposure to **white phosphorus** vapors has produced necrosis of ... no reported cases of carcinogenicity in humans after **white phosphorus** intoxication. Tests for mutagenicity and teratogenicity ...

[Full Text](#)

[Red Phosphorus Jack Grenade](#)

Mar 28, 1968 21 pages

Authors: [C. A. ROBINSON](#); [P. A. Nelson](#); [P. G. Bartholomew](#); [RAC EQUIPMENT TRIALS WING WAREHAM \(UNITED KINGDOM\)](#)

CDEE PORTON have produced a Red **Phosphorus** Jack Grenade for AFV local smoke protection, with the object of combining the rapid screening qualities of the No 80 **White Phosphorus** with the quicker loading and reduced fire hazard of the L5 and L7 Jack Grenades. The Red **Phosphorus** grenades as tested took even longer to provide an effective Its smoke is light grey and is not as noticeable as the **White Phosphorus** smoke, but is more noticeable than the L7 screen. It is thought that development may overcome the present slowness in the build-up rate of the Red **Phosphorus** Grenade.

[Full Text](#)

[High Resolution Electro-Optical Aerosol Phase Function Database PFNDAT2006](#)

Aug 2006 59 pages

Authors: [Richard C> SHirkey](#); [David H. Tofsted](#); [ARMY RESEARCH LAB WHITE SANDS MISSILE RANGE NM COMPUTATIONAL AND INFORMATION SCIENCE DIRECTORATE](#)

... a wind-lofted desert aerosol; and the Navy Aerosol Model (NAM). The manmade aerosols consist of dust produced from high-explosive munitions, **white phosphorus**, fog oil, and hexachloroethane smokes. Many of the models are functions of relative humidity (RH), wind speed, and other ... new Henryey-Greenstein snow phase function with the traditional Mie generated phase function. We corrected the following errors: the refractive index of **white phosphorus** at 1.06 m and 0%RH; all tropospheric aerosol values were calculated at 99% RH; and the snow phase functions ...

[Full Text](#)

[Ab Initio Studies on Hexavalent Phosphorus Compounds](#)

Aug 17, 2005 12 pages

Authors: [Ashley L. Wilson](#); [William E. White](#); [EDGEWOOD CHEMICAL BIOLOGICAL CENTER ABERDEEN PROVING GROUND MD RESEARCH AND TECHNOLOGY DIR](#)

... hexavalent phosphorus compounds in which a nitrogen atom provided both electrons for the sixth bond thereby forming an octahedral complex. In general, electron-withdrawing groups on the **phosphorus** atom increased the strength of the coordinate covalent bond between the nitrogen and **phosphorus** atoms. When the hexavalent **phosphorus** species was constructed by addition of ammonia and hydroxide to a phosphonate, the

[Full Text](#)

P-N distance was over 4 A. This weak interaction ...

[Chemical Characterization and Toxicologic Evaluation of Airborne Mixtures. The Chemical and Physical Characterization of Phosphorus Smokes for Inhalation Exposure and Toxicology Studies](#) Jun 1984 63 pages

Authors: [R. S. Brazell-Ramsey](#); [J. H. Moneyhun](#); [R. W. Holmberg](#); OAK RIDGE NATIONAL LAB TN

Full Text

The chemical and physical properties of the aerosols produced from the combustion of red phosphorus containing butyl rubber (RPBR) and white phosphorus impregnated in felt (WPF) have been examined. The aerosols were produced at a uniform concentration by extruding softened raw material and burning the emerging filament or by igniting fragments of the formulations in a convective air flow. Aerosol particle sizes were found to be within the respirable range, varying from 0.4 to 1.0 micrometer ...

[Physical System Dynamics and White Phosphorus Fate and Transport, 1994, Eagle River Flats, Fort Richardson, Alaska](#) Aug 1996 75 pages

Authors: [Daniel E. Lawson](#); [Lewis E. Hunter](#); [Susan R. Bigl](#); [Beth M. Nadeau](#); [Patricia B. Weyrick](#); COLD REGIONS RESEARCH AND ENGINEERING LAB HANOVER NH

Full Text

... are causing significant changes in the environment. Multiple internal and external forces govern the physical and chemical processes by actively altering surface conditions, sometimes in unpredictable ways. ERF is also used as an artillery range by the U.S. Army, where past use has resulted in white phosphorus (WP) contamination of the sediments within ponds and mudflats. Bottom-feeding waterfowl ingest this WP, which causes rapid death. This report documents analyses of the physical environment, describing the nature of the physical systems and factors controlling them. It includes data on ...

[Electro-Optical Aerosol Phase Function Database PFNDAT2005](#) Nov 2005 58 pages

Authors: [Richard C. Shirkey](#); [David H. Tofsted](#); ARMY RESEARCH LAB WHITE SANDS MISSILE RANGE NM

Full Text

... consist of maritime, urban, rural, tropospheric, fog, rain, snow, and dust aerosols; a wind-lofted desert aerosol; and the Navy aerosol model. The manmade aerosols consist of dust produced from high-explosive munition; white phosphorus; fog oil; and hexachloroethane smokes. Many of the models are functions of relative humidity, wind speed, and other parameters. The database includes information at wavelengths for 0.35 to 40.0 micrometers dependent on the availability ...

[Enhanced Natural Remediation of White- Phosphorus-Contaminated Wetlands through Controlled Pond Draining](#) Nov 1999 30 pages

Authors: [Michael R. Walsh](#); [Marianne E. Walsh](#); [Charles M. Collins](#); COLD REGIONS RESEARCH AND ENGINEERING LAB HANOVER NH

Full Text

Detonation of projectiles containing white phosphorus, a smoke-producing munition, contaminated Eagle River Flats (ERF), a ... located on Fort Richardson, Alaska. Ingestion of the highly toxic white phosphorus residues by dabbling ducks and swans resulted in significant waterfowl mortality, leading to the suspension of Army training with white phosphorus in wetlands and designation of Eagle River Flats as a Superfund site. The permanent ponds at ERF are ideal for long-term storage of the millimeter-size particles of white phosphorus ejected from detonated mortar and howitzer shells. With ...

[A NEW SMOKE SCREENING CHEMICAL FOR USE IN AERIAL SMOKE TANKS](#) Dec 1965 222 pages

Authors: [William H. McLain](#); [Robert W. Evans](#); DENVER RESEARCH INST CO MECHANICS DIV

Full Text

... that liquid agents possessing an obscuring power greater than FS can be developed using selected mixtures, solutions, and compounds of phosphorus. A solution of 33 weight % methylene iodide in white phosphorus had a TOP of about 2800. A eutectic mixture of phosphorus sesquisulfide and white phosphorus had a TOP of about 2800. The major difficulty of the agents tested was their pyrophoricity which resulted in handling difficulties. Considerable reduction in the rate of oxidation was accomplished using ...

[Physical and Chemical Characterization of Military Smokes. Part III. White Phosphorus-Felt Smokes](#) May 29, 1981 78 pages

Authors: [Sidney Katz](#); [Alan Snelson](#); [Narayanan Rajendran](#); [Ronald Butler](#); [Warren Bock](#); IIT RESEARCH INST CHICAGO IL

Full Text

An investigation of the U.S. Army White phosphorus-felt smoke munition is described in this report. The study included the chemical characterization of the smoke observations of the fog stability. The wedge-shaped generating munition is a pellet consisting of about 80% by weight of phosphorus somewhat irregularly distributed in the felt matrix. Principal impurities in the phosphorus were boron, silicon, iron, and arsenic, all at concentration levels near 0.1 to 0.01%. No significant levels of metallic impurities were present in ...

[Preliminary Assessment of Sedimentation and Erosion in Eagle River Flats, South-Central Alaska](#) Dec 1993 24 pages

Authors: [Daniel E. Lawson](#); [Bruce E. Brockett](#); COLD REGIONS RESEARCH AND ENGINEERING LAB HANOVER NH

Full Text

... range by the U.S. Army since 1945, must be understood to evaluate potential treatments of a high duck mortality resulting from ingestion of white phosphorus (WP) particles. The WP originates from smoke-producing devices detonated here. A preliminary assessment of erosion and sedimentation during May to September ... ranged from 8 to 16 mm. Recession rates of eroding gully headwalls were highly variable, ranging from negligible to over 3.9 m. White phosphorus particles may be in suspended transport through gullies during ebb. Further studies are ...

[Toxicity Testing of Soil Samples from J-Field, Aberdeen Proving Ground, MD](#)

Dec 1995 57 pages

Authors: [Carlton T. Phillips](#); [Ronald T. Checkal](#); [EDGEWOOD RESEARCH DEVELOPMENT AND ENGINEERING CENTER ABERDEEN PROVING GROUND MD](#)

Full Text

Soil samples from the toxic burning pits, an area adjacent to the toxic burning pits, **white phosphorus** pits, and riot control pits were tested for their toxicity to lettuce and earthworms as part of an ecological risk assessment of J-Field. To adequately ... moderately toxic at two sites (JBPPB and JBPMC); and highly toxic at one site (JHDP). An additional site (JBPMB) was not fully evaluated. Results from the **white phosphorus** pits were nontoxic for three sites (JWP1E, JWPPB, and JWP2C) and moderately toxic at one site (JWPPA). One site (JBT1W) from the ...

[Dredging in an Active Artillery Impact Area. Eagle River Flats, Alaska](#)

Sep 1996 52 pages

Authors: [Michael R. Walsh](#); [Edwin J. Chamberlain](#); [Karen S. Henry](#); [Donald E. Garfield](#); [Ed Sorenson](#); [COLD REGIONS RESEARCH AND ENGINEERING LAB HANOVER NH](#)

Full Text

Ongoing investigations into the waterfowl die-offs and the persistence of the causal agent, **white phosphorus**, in Eagle River Flats, an estuarine salt marsh and military impact area, indicate that any remediation strategy will have to include ... are constantly flooded, such as the deeper ponded areas, do not allow natural drying of the soil and subsequent sublimation of the residual **white phosphorus** (WP) particles. Some of these permanently flooded areas are interconnected over large areas and would be impractical to address through pond ...

[Medical Criteria for Respiratory Protection in Smoke: The Effectiveness of the Military](#)

Jan 1989 23 pages

[Protective Mask](#)

Authors: [James C. Eaton](#); [John Y. Young](#); [ARMY BIOMEDICAL RESEARCH AND DEVELOPMENT LAB FORT DETRICK MD](#)

Full Text

... could be chosen from among the approved orinasal dust, fume, and mist respirators, but this type of protection would not be appropriate for HC, metal, or **phosphorus** smokes; (c) the greatest uncertainty in the assessment of health hazards from smoke and obscurants involves measurement of exposure, which determines the duration of effectiveness of the ... HC smoke, which has caused fatalities when used improperly -- the masking policy must be strictly enforced, and HC should never be deployed in and enclosed space. Keywords: Hexachloroethane, **White phosphorus**, Red **phosphorus**, Toxic hazards. (aw)

[Smoke and Obscurants; a Health and Environmental Effects Data Base Assessment. A](#)

Feb 1985 115 pages

[First-Order, Environmental Screening and Ranking of Army Smokes and Obscurants](#)

Authors: [Joseph H. Shinn](#); [Stanley A. Martins](#); [Patrica L. Cederwall](#); [Lawrence B. Gratt](#); [LAWRENCE LIVERMORE NATIONAL LAB CA](#)

Full Text

... toxicity when ingested by animals, the aquatic toxicity, the environmental mobility when freshly deposited, and the ultimate mobility and fate in the environment. The major smoke types considered were various forms of **white phosphorus**, red **phosphorus**, hexachlorethane-derived smokes (HC), fog-oil (SGF-2), diesel fuel smokes (DF), and some infrared obscuring agents. The results were ranked according to: Device Impact Area and Environmental Concentration; Inhalation ...

[Evaluate and Characterize Mechanisms Controlling Transport, Fate, and Effects of Army](#)

Oct 1987 202 pages

[Smokes in the Aerosol Wind Tunnel](#)

Authors: [Peter Van Voris](#); [Dominic A. Cataldo](#); [Michael W. Ligojke](#); [Thomas R. Garland](#); [Kris M. McFadden](#); [BATTELLE MEMORIAL INST RICHLAND WA PACIFIC NORTHWEST LABS](#)

Full Text

An evaluation of the terrestrial transport, transformations and ecological effects of **phosphorus** red phosphorus-butyl rubber (RP/BR) smoke obscurant was performed at Pacific Northwest Laboratory. A similar evaluation using **white phosphorus** (WP) smoke/obscurant is currently proceeding. Future testing with other smokes are planned. The objective of this research program is to characterize the effects of smokes and obscurants on: (1) natural vegetation characteristic of ...

[Synthesis and Structural Characterization of Alkyl, Gallium-Phosphorus Compounds, X-](#)[Ray Crystal Structures of \(Me3CCH2\)2\(Cl\)Ga.P\(SiMe3\)3, R2GaP\(SiMe3\) 2GaR2Cl](#)

Dec 20, 1995 35 pages

[\(R=Me3CCH2 and Me3SiCH2\), and \(\(R\)\(X\)GaP\(SiMe3\)2\)2 \(R=Me3CCH2, X=Cl; R=Me3CCH2, X=Me3CCH2; R=Me3S](#)

Authors: [Richard L. Wells](#); [Ryan A. Balwin](#); [Peter S. White](#); [William T. Pennington](#); [Arnold L. Rheingold](#); [DUKE UNIV DURHAM NC DEPT OF CHEMISTRY](#)

Full Text

Continued activity in the development of single-source precursors to 13-15 semiconductor materials has motivated our laboratory to investigate the synthesis of novel organogallium **phosphorus** compounds which might serve as potential precursors to GaP. Recently, our efforts to produce the gallium- **phosphorus** bond have led to the formation of interesting ring compounds and simple adducts.

[A NEW SYNTHESIS FOR 3-CHLORO-2,2',4,4',6,6'-HEXANITROBIPHENYL, PIPICL](#)

Jan 18, 1966 22 pages

Authors: [JOSEPH C. DACONS](#); [Mortimer J. Kamlet](#); [NAVAL ORDNANCE LAB WHITE OAK MD](#)

Full Text

... and m-chloro- or m-bromoanisole. The first step involved the formation of m-picrylanisole by means of a mixed Ullmann reaction. Using 90% nitric acid and 30% oleum, the picrylanisole was nitrated to 3-methoxy-2,2',4,4',6,6'-hexanitrobiphenyl which was in turn converted to PIPICL by treatment with pyridine and **phosphorus** oxychloride. When m- bromoanisole was used in the Ullmann reaction, the overall yield for the three steps was about 59%. The use of m-chloroanisole resulted in a lower yield in the first step and an overall yield of about 52%. Several variations in procedure are given for the ...

[Mammalian Toxicology and Toxicity to Aquatic Organisms of Four Important Types of](#)

[Waterborne Munitions Pollutants - An Extensive Literature Evaluation](#)

Mar 1974 186 pages

Authors: [Jack C. Dacre](#); [David H. Rosenblatt](#); [ARMY MEDICAL BIOENGINEERING RESEARCH AND DEVELOPMENT LAB FORT DETRICK MD](#)

Full Text

... a summary review and evaluation of the toxicological and related literature on known components of four types of military-relevant wastewaters. These are nitrocellulose and nitroglycerin manufacturing wastes, 'phossey water' (from **white phosphorus** processing), and 'pink water' (from TNT production and processing). The report consists of brief descriptions of the wastes along with the most significant toxicological information concerning them, conclusions and ...

[WP CASUALTIES AT EDGEWOOD ARSENAL MARYLAND, 1945](#)

Mar 31, 1947 144 pages

Authors: [James](#); [Morton Galdston](#); [Jack Wexler](#); [Myna L. Hill](#); [Geraldine Midgely](#); [CHEMICAL CORPS ARMY CHEMICAL CENTER MD](#)

Full Text

The investigation was undertaken to evaluate the **white phosphorus** (WP) burn in a series of human patients received from WP loading plant accidents at Edgewood Arsenal, Maryland.

[Analysis of the Visual Obscuration Produced by Current Artillery and Mortar Delivered WP and HC Smoke](#)

Aug 1977 68 pages

Authors: [Douglas N. Warrington](#); [William T. Hirnyck](#); [ARMY MATERIEL SYSTEMS ANALYSIS ACTIVITY ABERDEEN PROVING GROUND MD](#)

Full Text

... conducted in December, 1975. The purpose of this analysis is to evaluate the effect of the number of smoke rounds fired and the effect of the position of the observers on the duration of target obscuration. Current artillery and mortar-delivered **white phosphorus** (WP) smoke rounds and current artillery-delivered hexachloroethane (HC) smoke rounds were fired. The observers were not permitted to use visual aids to view the targets. The effect of the different types of ...

[Mammalian Toxicity of Munitions Compounds. Phase I. Acute Oral Toxicity, Primary Skin and Eye Irritation, Dermal Sensitization, Disposition and Metabolism and Ames Tests of Additional Compounds](#)

Dec 8, 1978 42 pages

Authors: [Harry V. Ellis III.](#); [John R. Hodgson](#); [Shang W. Hwang](#); [Laurel M. Halpap](#); [Danny O. Helton](#); [MIDWEST RESEARCH INST KANSAS CITY MO](#)

Full Text

... eyes and not sensitizing to guinea pigs. 3,5-DNT and 4-ADNT were absorbed from the gastrointestinal tract, metabolized and excreted in the urine. In the Ames test, 1,3-dinitrolycerin (1,3-DNG), 1-mononitrolycerin (1-MNG), nitrocellulose and **white phosphorus** were not mutagenic. Trinitrotoluene (TNT) 2,4-DNT, 2,5-DNT, tetranitromethane (TNM) and 1,2-DNG were mutagenic at 10 to 30 microgram/plate in one or more strains. TNM was bactericidal without activation. ...

[White Phosphorus Dry Fill Line](#)

Aug 1980 64 pages

Authors: [Merlin L. Erickson](#); [Harold D. McKinney](#); [Larry Davenport](#); [ARMY ARMAMENT RESEARCH AND DEVELOPMENT COMMAND ABERDEEN PROVING GROUND MD CHEMICAL SYSTEMS LAB](#)

Full Text

An MMT project was conducted to provide a semi-automatic prototype WP dry fill line at Pine Bluff Arsenal by modification and improvement of existing equipment. The line was designed to fill the 105-mm M60 projectile, the 81-mm M375 projectile, the 60-mm M302 projectile, and the 2.75-inch M156 warhead. The line was successfully operated with the 105-mm M60 and the 2.75-inch M156. Test were not conducted with the 60-mm and 81-mm munitions because components were not available. The WP dry fill line provides a safe, extremely accurate system for production rate filling of munitions with WP. It ...

[Characterization of Aerosol Nonlinear Effects on a High Power CO2 Laser Beam](#)

Feb 1981 73 pages

Authors: [C. W. Bruce](#); [Y. P. Yee](#); [S. J. Duran](#); [ARMY ELECTRONICS RESEARCH AND DEVELOPMENT COMMAND WSMR NM ATMOSPHERIC SCIENCES LAB](#)

Full Text

This report describes a set of aerosol measurements to determine the effect of a countermeasure smoke, **white phosphorus** (WP), on a pulsed high-energy laser (HEL) beam. An analysis of the aerosol (gaseous and particulate airborne material) was used as the basis for calculations of evaporative clearing, and application was made to a given specific test situation. Linear propagation properties forming the basis for the 10.6 micrometers pulsed laser nonlinear effects are obtained relatively ...

[Migration of Hazardous Substances through Soil. Part 4. Development of a Serial Batch Extraction Method and Application to the Accelerated Testing of Seven Industrial Wastes](#)

Sep 1987 510 pages

Authors: [Duane E. Long](#); [Martin J. Houle](#); [Donald C. Weatherhead Jr.](#); [Gordon K. Ricks](#); [ARMY DUGWAY PROVING GROUND UT](#)

Full Text

... approach capable of simulating this dynamically-changing situation. Samples of wastes were collected from the following industries: zinc-carbon battery manufacturing, titanium dioxide pigment production, hydrofluoric acid manufacturing, **white phosphorus** production, oil re-refining, and two from zinc secondary-refining (cinders and scrubber-waste). Water extracts of these wastes were applied to Chalmers, Davidson, and Nicholson soils. The analysis ...

[Chemical Reactions and Properties of Organosilicon Compounds Related to New Materials](#)

May 29, 1992 11 pages

Authors: [Robert West](#); [WISCONSIN UNIV-MADISON DEPT OF CHEMISTRY](#)

... 3-cyclodisiloxanes. Disilenes were found to react with aldehydes, ketones and thioketones by 2+2

[Full Text](#) cycloaddition to produce four-membered ring compounds. Reactions of disilenes with ketenes and acid chlorides were also investigated. With **white phosphorus**, disilenes react to produce noble bicyclobutane molecules which may be further converted to tricyclic asterane structures. The first platinum derivatives of disilenes were synthesized. The first siladiimides have been ...

[Phosphorus-, Nitrogen-, Sulfur-, and Chlorine-Containing Molecules on Surfaces](#) Oct 9, 1992 7 pages

Authors: [J. M. White](#); [TEXAS UNIV AT AUSTIN DEPT OF CHEMISTRY](#)

[Full Text](#)

The research is in the area of chemical reactions on surfaces and deals with molecules and solids that model systems of technological and environmental significance to ARO. In particular, we study heteroatom organic adsorbates containing halogens, sulfur, oxygen, **phosphorus** and nitrogen. The fundamental surface chemical decomposition kinetics of selected molecules, especially simulants, are studied on metal and metal oxide substrates that model technological materials used to destroy and render them harmless. Our goal is to acquire fundamental and quantitative molecular level descriptions of ...

[Performance Oriented Packaging Testing of XM929 White Phosphorus Filled Body Assemblies for 120mm Mortar Packed in a Plywood Container](#) Aug 3, 1994 6 pages

Authors: [Dmitry Kirshteyn](#); [DOD PERFORMANCE ORIENTED PACKAGING OF HAZARDOUS MATERIALS WASHINGTON DC](#)

[Full Text](#)

This report contains test results conducted on the XM929 WP Body Assy. for 120 mm Mortar packaged in plywood box per drawing 12961145. The tests were conducted in accordance with requirements of 49 CFR part 107. The packaging is submitted for Performance-Oriented Packaging certification.

[Analysis of Artillery Winter Test Firing into Eagle River Flats, Fort Richardson, Alaska](#) Jan 1995 20 pages

Authors: [Charles M. Collins](#); [Darryl J. Calkins](#); [COLD REGIONS RESEARCH AND ENGINEERING LAB HANOVER NH](#)

[Full Text](#)

... (HE) projectiles on the ice-covered terrain. Eagle River Flats is an estuary at the mouth of the Eagle River used as the artillery impact range for Ft. Richardson. The Army suspended use of the impact range following the discovery that **white phosphorus** (WP) deposited in the salt marsh was responsible for large numbers of waterfowl deaths each summer. The purpose of these tests was to assess if seasonal firing of HE projectiles from 60- and 81-mm mortars and 105- mm ...

[Initial Analyses of Eagle River Flats Hydrology and Sedimentology, Fort Richardson, Alaska](#) Mar 1995 47 pages

Authors: [Daniel E. Lawson](#); [Susan R. Bigl](#); [John H. Bodette](#); [Patricia Weyrick](#); [COLD REGIONS RESEARCH AND ENGINEERING LAB HANOVER NH](#)

[Full Text](#)

... disrupting drainage. The physical environment of ERF needs to be understood to help remediate a problem of unusually high mortality rates in migrating waterfowl. This high mortality of ducks is attributable to ingestion of elemental **white phosphorus** (P₄) particles (from smoke-producing devices), which are now distributed within near-surface sediments of the ponds and marshes. The complexity of this dynamic environment makes it extremely difficult to predict what physical ...

[Silt Fence Testing for Eagle River Flats Dredging](#) Dec 1995 18 pages

Authors: [Karen S. Henry](#); [Susan T. Hunnewell](#); [COLD REGIONS RESEARCH AND ENGINEERING LAB HANOVER NH](#)

[Full Text](#)

An estimated 1,000 to 2,000 waterfowl deaths have been noted annually since 1980 in Eagle River Flats (ERF), Alaska, an artillery impact area used by the Army. Waterfowl die because of the ingestion of unburned **white phosphorus** (WP) particles deposited by incendiary. Remediation of the site is currently being planned, and one of the techniques being considered is the use of a remote-control dredge to excavate WP-contaminated sediment. Dredged material will be placed into a ...

[Synthesis and Characterization of an Organothallium-Phosphorus Adduct: Crystal Structure of \(Mes₃SiCH₂\)₂sub₃TI*P\(SiMes₃\)₃](#) Oct 30, 1996 17 pages

Authors: [Ryan A. Baldwin](#); [Richard L. Wells](#); [Peter S. White](#); [DUKE UNIV DURHAM NC DEPT OF CHEMISTRY](#)

[Full Text](#)

The organothallium **phosphorus** adduct (Me₃SiCH₂)₂TI-P(SiMe₃)₃ (1) was prepared by combining (Me₃SiCH₂)₂TI and P(SiMe₃)₃ at room temperature. Compound 1 was characterized by ¹H, ¹³C(¹H), and ³¹P(¹H) NMR, partial elemental analysis, EI mass spectrometry, and single-crystal X-ray analysis, the first to be reported for a thallium-group 15 adduct. Crystal data for 1: trigonal system, space group P 3₁, with a = 16.063(6) Å, c = 12.148(3) Å, D_{calc} = 1.315 g cm⁻³, and V = 2714.3(11) Å³ for Z = 3. Refinement converged at R = 0.042 (R_w = 0.045). The TI-P bond length in 1, previously unreported for ...

[Low Temperature Reactions for the Preparation of Group 13-15 Materials from Organo-gallium\(I\) and -indium\(I\) Compounds](#) Dec 6, 1997 15 pages

Authors: [Q. T. Beachley Jr.](#); [Jeffrey F. Lees](#); [Matthew J. Noble](#); [STATE UNIV OF NEW YORK AT BUFFALO DEPT OF CHEMISTRY](#)

[Full Text](#)

The reactions of pentamethylcyclopentadienylindium(I) In(C₅Me₅) with **white phosphorus** (P₄) at 175 deg C and of neopentylgallium(I) Ga(CH₂CMe₃)_n with P₄ at 350- 400 deg C and with NH₃ at 460-480 deg C in sealed tubes provide routes to indium phosphide, gallium phosphide and hexagonal gallium nitride, respectively. The formation of these group 13-15 materials as black solids was confirmed by their X-ray photoelectron spectra, X-ray powder diffraction patterns and physical properties. The other products were (C₅Me₅)₂ in ...

[Quantum Chemical Study of the Phosphite-Phosphonate Tautomerization: Applications to](#) Nov 2002 58 pages

bis(2-Ethylhexyl) Phosphonate (BIS) and Other Simulants for Chemical Warfare AgentsAuthors: [William E. White](#); [EDGEWOOD CHEMICAL BIOLOGICAL CENTER ABERDEEN PROVING GROUND MD](#)

Quantum chemical methods (ab initio, semiempirical, and Hartree-Fock) were used to calculate the energy of several phosphite-phosphonate tautomers, and thereby determine the position of equilibrium in the gas phase. Unless the **phosphorus** moiety contains significant electron withdrawing groups, the equilibrium lies far toward the phosphonate. None of the methods consistently produced thermodynamic values that agreed within 5 kcal/mole. In the most stable conformation of trimethyl phosphite, two of the methoxy ligands were oriented upward (with respect to the lone pair) in a pseudocistoid or ...

[Full Text](#)

Total Results: 58

Pages: Previous [\[1\]](#) [Next](#)

Results per page:

50

[Home](#) | [About Us](#) | [Contact Us](#) | [View Cart](#) | [Customer Service](#) | [Shipping Terms](#) | [Advanced Search](#) | [Privacy Policy](#) | [Restrictions on PDF Usage](#)

© 2001-2008 Storming Media LLC. All rights reserved.