



Pentagon Reports: Fast. Definitive. Complete.

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

username

**LOGIN**

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

Perchlorate



[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: Perchlorate

Total Results: **133**

Pages: Previous [\[1\]](#) [2](#) [3](#) [Next](#)

Results per page:  
50

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

#### [Biological Effects of Inadvertent Perchlorate Releases During Launch Operations](#) Sep 30, 2002 45 pages

Authors: [Mark E. Hines](#); [Frank von Hippel](#); [John Kennish](#); [TRW SPACE AND ELECTRONICS GROUP REDONDOBEACH CA](#)

... motor fuel contains large quantities of ammonium **perchlorate** as the primary oxidant and this material has been ... report presents the results of the following experiments: effects of **perchlorate** on primary and secondary production in freshwater and ... the threespine stickleback fish. Results show that **perchlorate** will affect photosynthesis in aquatic systems, but this ... production also was not adversely affected by the presence of **perchlorate** except at very high levels in seawater samples ... and fish in aquaria accumulated significant levels of **perchlorate** that could be passed on to other tropic levels and ...

**Full Text**

#### [Ecological Risk Assessment of Ammonium Perchlorate on Fish, Amphibians, and Small Mammals](#) Feb 2003 407 pages

Authors: [Ronald J. Kendall](#); [TEXAS TECH UNIV HEALTH SCIENCES CENTER LUBBOCK INST OF ENVIRONMENTAL AND HUMAN HEALTH](#)

... 13 reports that examine the ecological risk of ammonium **perchlorate** on animal life. Contents: 1) Uptake and Elimination ... Larval Anurans in Their Natural Environment to Ammonium **Perchlorate** Contamination; 3) The Effects of Contaminated and Reference Surface ... Laevis ...; 4) Lethal Concentration Determination of Sodium **Perchlorate** and Ammonium Chloride on Xenopus Laevis ... Laevis; 6) Protocol Development for Determination of Effects of **Perchlorate** on Growth and Reproduction of Mosquitofish; 7) Assessment ... Fish and Amphibians as Aquatic Sentinels for **Perchlorate** Exposures and Effects ...; 10) Effects ...

**Full Text**

#### [Field Demonstration of In Situ Perchlorate Bioremediation at Building 1419](#) Jan 22, 2004 80 pages

Authors: [Randall J. Cramer](#); [Carey Yates](#); [Paul Hatzinger](#); [Jay D. Shaw](#); [NAVAL SURFACE WARFARE CENTER INDIAN HEAD DIV MD](#)

... of in situ bioremediation of a groundwater aquifer contaminated with **perchlorate**. Using a recirculation cell design, naturally occurring microorganisms were stimulated to degrade **perchlorate** by injecting a food source (lactate) and neutralizing the groundwater acidity with a carbonate buffer. Starting with **perchlorate** concentrations in excess of 210 mg/L, **perchlorate** ... 5 months of sampling. In two of the monitoring wells, the **perchlorate** levels were lowered to less than 5 ... , and the first demonstration of treating in situ **perchlorate** levels in excess of 200 mg/L. This project provides ...

**Full Text**

#### [An Investigation into Palladium-Catalyzed Reduction of Perchlorate in Water](#) Mar 2005 203 pages

Authors: [Eric G. Barney](#); [AIR FORCE INST OF TECH WRIGHT-PATTERSON AFB OH SCHOOL OF ENGINEERING AND MANAGEMENT](#)

... a catalytic reactor to facilitate chemical reduction of **perchlorate** was investigated. Palladium-coated pellets were used as ... reductant concentration, residence time). Very little **perchlorate** reduction was observed under any operating condition. ... clearly not sufficient for environmental treatment applications. **Perchlorate** strongly adsorbed to the catalyst at low pH (3 ... of formic acid (pKa ^ 3.75). It is possible that **perchlorate** reduction was limited by the amount and speciation of formic acid in the system. Maximum **perchlorate** reduction was observed at high reductant concentration (10 millimolar ...

**Full Text**

#### [Anaerobic Treatment of Wastewaters Containing Perchlorate from Munitions Handling and Production](#) Jan 1, 2008 87 pages

Authors: [Emina Atikovic](#); [Stephen W Maloney](#); [Makram T Suidan](#); [ENGINEER RESEARCH AND DEVELOPMENT CENTER CHAMPAIGN IL CONSTRUCTION ENGINEERING RESEARCH LAB](#)

... washout operation, however, leads to wastewater containing **perchlorate**. Royal Demolition Explosive (RDX), a major component ... munitions. New high explosives contain **perchlorate**, commingling **perchlorate** and RDX for the first time. In addition to their damaging effect to the environment, **perchlorate** and RDX can also be detrimental to ... This study focused on determining the effectiveness of removing **perchlorate** and RDX individually and when commingled, using ... also tested. The experimental results demonstrated that the biodegradation of **perchlorate** and RDX was more effective in bioreactors receiving ...

**Full Text**

#### [Biodegradation of Nitroglycerin and Perchlorate in Propellant Wastewater](#) Sep 1994 59 pages

Authors: [Hubert Attaway](#); [ADVANCED SCIENCES INC ALBUQUERQUE NM](#)

... report describes studies on the degradation of nitroglycerin and nitroglycerin/**perchlorate** mixtures by an anaerobic mixed culture containing the **perchlorate** reducing bacterium HAP1. The final goal was to demonstrate

[Full Text](#) the feasibility of biotreating a model hazard class 1.1 ... medium. Nitroglycerin and nitrite were shown to inhibit **perchlorate** reduction. Both glycering and **perchlorate** were degraded in 10% CYH propellant wastewater. **Perchlorate** reduction in 25% and 50% CYH wastewater ... the CYH wastewater, trice tin and resorcinol, were not inhibitory to **perchlorate** reduction.

[Alternative Causes of Wide-Spread, Low Concentration Perchlorate Impacts to Groundwater](#)

Aug 10, 2005 53 pages

Authors: [Evan Cox](#); [GEOSYNTEC CONSULTANTS GUELPH \(ONTARIO\)](#)

[Full Text](#) The frequency of detection of **perchlorate** in groundwater and drinking water supplies has been steadily increasing ... a chemical of concern in 1997. It is currently estimated that **perchlorate** is present in groundwater in at least 30 states and ... million people in the southwestern United States (U.S.). The source of **perchlorate** in water supplies has typically been attributed ... defense contractor facilities that have used ammonium **perchlorate** (AP) in rocket and missile propellants. ... attributed to the historic production and release of **perchlorate** from a former chemical manufacturing facility in the Las ...

[Effects of Perchlorate on Thyroidal Uptake of Iodide with Corresponding Hormonal Changes](#)

Jul 2000 29 pages

Authors: [K. O. Yun](#); [P. N. Todd](#); [S. M. Young](#); [D. R. Mattie](#); [J. W. Fisher](#); [L. Narayanan](#); [R. J. Godfrey](#); [T. R. Sterner](#); [C. Goodyear](#); [HUMAN EFFECTIVENESS DIRECTORATE WRIGHT-PATTERSON AFB OH OPERATIONAL TOXICOLOGY BRANCH](#)

[Full Text](#) ... project was to conduct a series of experiments to investigate the role of **perchlorate** on the uptake of iodide in the thyroid and its effects on the synthesis of thyroid hormones. A time course study with **perchlorate** (single iv dose) was performed to investigate its kinetic ... Rats were injected with 0, 0.01, 0.11 and 3 mg **perchlorate**/kg via tail vein, challenged with 125I ... drinking water studies were performed at different levels of **perchlorate** (0, 1, 3 and 10 mg/kg). At the end of exposure, ... thyroid iodide uptake after a single iv dose of **perchlorate**, and both dose- and time- dependent changes ...

[Perchlorate Analysis by AS-16 Separation Column](#)

Oct 1999 42 pages

Authors: [David T. Tsui](#); [Rebecca A. Clewell](#); [J. E. Eldridge](#); [David R. Mattie](#); [AIR FORCE RESEARCH LAB WRIGHT-PATTERSON AFB OH HUMAN EFFECTIVENESS DIRECTORATE](#)

[Full Text](#) A new ion chromatography method was developed for **perchlorate** analysis using a Dionex AS-16 Separation Column. The AS-16 ... AS-5 or the AS-11 method, with a method detection limit for **perchlorate** of 0.19 ug/L. The higher capacity of the AS-16 analytical column allows trace level **perchlorate** to be detected in samples that could not be analyzed with either of ... in order to remove interference ions, which can block the **perchlorate** signal to the detector. This preparation method reduces the background noise and increases the sensitivity of **perchlorate** analysis in environmental and industrial matrices.

[Stability and Concentration Verification of Ammonium Perchlorate Dosing Solutions](#)

May 1998 38 pages

Authors: [David T. Tsui](#); [David R. Mattie](#); [Latha Narayanan](#); [MAN TECH/GEO-CENTERS JOINT VENTURE DAYTON OH TOXIC HAZARDS RESEARCH](#)

[Full Text](#) Stability and concentration verification was performed for the ammonium **perchlorate** dosing solutions used in the on-going 90-Day Oral Toxicity ... and selective ion chromatography (IC) method for the analysis of **perchlorate** (ClO<sub>4</sub><sup>-</sup>) and nitrate (NO<sub>3</sub><sup>-</sup>), a possible interference anion ... that the IC method was capable of detecting both **perchlorate** and nitrate at 0.003 microgram/ mL (5 ppb ... relative humidity and light intensity, ammonium **perchlorate** was stable in reagent water for at least 109 days. The concentrations of the ammonium **perchlorate** dosing solutions (0.05 to 200 micrograms/mL) were verified ...

[Perchlorate Literature Review and Summary: Developmental Effects, Metabolism, Receptor Kinetics and Pharmacological Uses](#)

Aug 1998 57 pages

Authors: [Teresa R. Sterner](#); [David R. Mattie](#); [OPERATIONAL TECHNOLOGIES CORP DAYTON OH](#)

[Full Text](#) ... groundwater contaminate on government contractor sites and, more recently, on an Air Force site. **Perchlorate** is dissociated from the salt, ammonium **perchlorate**, which is an efficient oxidizer used in solid rocket propellant systems. This review was undertaken to evaluate the available ... and reproductive effects, thyroid iodide receptor kinetics, pharmacological uses of **perchlorate** outside the treatment of Graves' disease, and absorption, distribution, metabolism and excretion of **perchlorate**. Summarization of the available information and conclusions make the data more ...

[Perchlorate Ecological Risk Studies - A Report on Literature Reviews and Studies Conducted by the Ecological Impact/Transport and Transformation Subcommittee of the Interagency Perchlorate Steering Committee](#)

Nov 1998 23 pages

Authors: [Clarence Callahan](#); [Mark Sprenger](#); [Guy C. Long](#); [Ronald C. Porter](#); [INSTITUTE FOR ENVIRONMENT SAFETY AND OCCUPATIONAL HEALTH RISK ANALYSIS BROOKSAFB TX RISK ANALYSIS DIRECTORA](#)

[Full Text](#) The Ecological Impact/Transport and Transformation Subcommittee of the Interagency **Perchlorate** Steering Committee was created in January 1998 to evaluate environmental fate and transport of **perchlorate**, an oxidizer found in solid rocket systems, and its potential effects on ... A literature search was conducted to identify completed studies of various **perchlorate** salts (potassium, sodium, ammonium, etc) to evaluate dose levels that ... Results were shared with the USEPA National Center for Environmental Assessment (NCEA) for their **perchlorate** risk characterization document.

[Perchlorate Removal, Destruction, and Field Monitoring Demonstration](#)

Oct 2, 2006 151 pages

Authors: [Edward N. Coppola](#); [Andrea Davis](#); [APPLIED RESEARCH ASSOCIATES INC PANAMA CITY FL](#)

... were to evaluate and demonstrate a complete **perchlorate** ion exchange process for groundwater that included a ... discharge or reuse; and to demonstrate a new **perchlorate** field monitor with ppb detection. In order to ... economics of the proposed processes compared to current **perchlorate** treatment processes, the following objectives were proposed: 1. Demonstrate **perchlorate** removal in groundwater from >50 ppb to < or = 5 ppb with a regenerable, perchlorate-selective ion ... groundwater stream. 3. Demonstrate removal or destruction of **perchlorate** (< or = 5 ppb) in the regenerant stream enabling discharge ...

[Full Text](#)

[Perchlorate Ecological Risk Studies - A Report on Literature Reviews and Studies](#)

[Conducted by the Ecological Impact/Transport and Transformation Subcommittee of the Interagency Perchlorate Steering Committee](#)

Nov 1998

23 pages

Authors: [Guy C. Long](#); [Ronald C. Porter](#); [Clarence Callahan](#); [Mark Sprenger](#); [INSTITUTE FOR ENVIRONMENTAL SAFETY AND OCCUPATIONAL HEALTH RISK ANALYSIS BROOKSAFB TX RISK ANALYSIS DIRECTORA](#)

The Ecological Impact/Transport and Transformation Subcommittee of the Interagency **Perchlorate** Steering Committee was created in January 1998 to evaluate environmental fate and transport of **perchlorate**, an oxidizer found in solid rocket systems, and its potential effects on ... receptors. A literature search was conducted to identify completed studies of various **perchlorate** salts (potassium, sodium, ammonium, etc) to evaluate dose levels ... were shared with the U.S. EPA National Center for Environmental Assessment (NCEA) for their **perchlorate** risk characterization document.

[Full Text](#)

[Application of Horizontal Flow Treatment Wells for In Situ Treatment of Perchlorate Contaminated Groundwater](#)

Mar 2002

155 pages

Authors: [Jeffrey C. Parr](#); [AIR FORCE INST OF TECH WRIGHT-PATTERSONAFB OH](#)

Groundwater contamination by **perchlorate** has recently been recognized as a significant environmental problem across the United States, ... donor into perchlorate-contaminated groundwater in order to promote reduction of the **perchlorate** by indigenous microorganisms in bioactive zones within the aquifer, ... flow and operation of the HFTW's, with a biodegradation model that simulates **perchlorate** reduction, as well as reduction of competing electron acceptors in ... model was applied to an example site to demonstrate how in situ **perchlorate** treatment might be implemented. A sensitivity analysis using the ...

[Full Text](#)

[Field Screening Method for Perchlorate in Water and Soil](#)

Apr 2004

36 pages

Authors: [Philip G. Thorne](#); [ENGINEER RESEARCH AND DEVELOPMENT CENTER HANOVER NH COLD REGIONS RESEARCH AND ENGINEERING LAB](#)

Low concentrations (microgram/L of the **perchlorate** anion ClO<sub>4</sub> have been measured in drinking water supplies in many states throughout the ... . Federal and state regulatory agencies are concerned about the possible adverse effects of **perchlorate** contamination as the anion is known to target the human thyroid gland and its metabolic-hormone-producing ... EPA and adopted by several states is 18 microgram/L (18 ppb) **perchlorate**; however other states have set levels as low as 1-4 microgram/L. The major sources of **perchlorate** contamination in surface and ground waters are propellant manufacturers, military ...

[Full Text](#)

[Edible Oil Barriers for Treatment of Perchlorate Contaminated Groundwater](#)

Feb 16, 2006

196 pages

Authors: [Robert C. Borden](#); [Christie Zawtrocki](#); [Tony M. Lieberman](#); [ATMOSPHERIC PLASMA SOLUTIONS RALEIGH NC](#)

... documents the demonstration of emulsified edible oils for remediation of **perchlorate** in groundwater. The demonstration was conducted at a confidential site in Maryland with a mixed **perchlorate** and 1,1,1-TCA groundwater plume. The primary objective of this project was to evaluate the cost and ... oil permeable reactive barrier (PRB) to control the migration of **perchlorate** plumes at DoD installations. The performance of the PRB was evaluated by ... demonstrate the cost-effectiveness of emulsified edible oils for remediation of **perchlorate** and chlorinated ethanes in groundwater through enhanced ...

[Full Text](#)

[Uptake and Transformation of the Propellants 2,4-DNT, Perchlorate and Nitroglycerin by Grasses](#)

Jul 31, 2006

99 pages

Authors: [Guy Riefler](#); [Sushma Guruswamy](#); [Victor Medina](#); [OHIO UNIV ATHENS](#)

... by performing hydroponic and soil experiments. The propellants 2,4-dinitrotoluene (2,4-DNT), **perchlorate** and nitroglycerin (GTN) often contaminate firing ranges due to ... In hydroponic experiments, sorption of 2,4-DNT to roots was significant in the grasses. **Perchlorate** accumulated in large amounts in leaves of the grasses with maximum accumulation in ... it is evident that yellow nutsedge was effective in degrading 2,4-DNT. **Perchlorate** was accumulated in leaves of yellow nutsedge and Indian grass and GTN degradation was nearly 100% in Indian grass. Degradation in **perchlorate** and OTN was by bacteria.

[Full Text](#)

[INVESTIGATIONS LEADING TO THE DESIGN AND DEVELOPMENT OF MAGNESIUM/MAGNESIUM PERCHLORATE BATTERIES](#)

Jan 31, 1965

44 pages

Authors: [James Sharpe](#); [EAGLE-PICHER CO JOPLIN MO](#)

Efficiency was improved by the addition of lithium chromate to the magnesium **perchlorate**. Studies indicated that the addition of one gram of lithium chromate per 100 ml of electrolyte ... fifteen percent. Conductivity studies were carried out and studies indicated that four normal magnesium **perchlorate** is the most applicable to use. Data has also indicated the higher the normality of electrolyte, ... the lower the resistance. Effort has been directed during the quarter to perfect a magnesium/magnesium **perchlorate** battery which would meet the requirements of the AN/PRC-62 specification, when discharged ...

[Full Text](#)

[Investigation of the Origin of Hot Spots in Deformed Crystals: Final Report on Ammonium Perchlorate Studies](#)

Jul 19, 1993

40 pages

Authors: [W. L. Elban](#); [H. W. Sandusky](#); [B. C. Beard](#); [B. C. Glancy](#); [NAVAL SURFACE WARFARE CENTER DAHLGREN DIV](#)

[VA](#)

A number of single crystals of ammonium **perchlorate** (A-P) were shock loaded near the reaction threshold to investigate the effects of concentrated lattice ... these freshly cleaved surfaces, the XPS results showed enhanced lattice disruption and **perchlorate** decomposition as a result of the hardness impressions. The greatest decomposition was not immediately adjacent to the impressions, ... slip planes emanating from the impressions several millimeters, or more, into the crystal.... Ammonium **perchlorate**, X-ray Photoelectron spectroscopy, Hot spot, Dislocation density, Microhardness, Shock reactivity.

[Full Text](#)[Operational Implementation of Ammonium Perchlorate Biodegradation](#)

Jun 19, 1998 63 pages

Authors: [Edward N. Coppola](#); [Jeffrey Rine](#); [Greg Startzell](#); [APPLIED RESEARCH ASSOCIATES INC PANAMA CITY FL](#)

This technology is a low-cost biodegradation process that converts the **perchlorate** ion (ClO<sub>4</sub><sup>-</sup>) in process wastewater to chloride (Cl<sup>-</sup>). **Perchlorate** can be reduced from a concentration greater than 1.0% to a concentration below detection limits (< 0.5 ppm). Effluents from this process can be ... DoD. The objective of this demonstration was to provide a production-scale, operational validation of the ammonium **perchlorate** (AP) biodegradation process that was developed by the Air Force Research Laboratory. Components of an existing pilot-scale ...

[Full Text](#)[Assessment of Perchlorate Releases in Launch Operations](#)

Oct 25, 2001 44 pages

Authors: [V. I. Lang](#); [K. R. Bohman](#); [J. T. Tooley](#); [E. W. Fournier](#); [B. B. Brady](#); [AEROSPACE CORP EL SEGUNDO CA LAB OPERATIONS](#)

An overall approach to the assessment of potential **perchlorate** (ClO<sub>4</sub><sup>-</sup>) releases from launch operations is presented. Two particular aspects of the assessment have been addressed to date. Laboratory studies to determine the effects of salinity and temperature on the chemical kinetics of **perchlorate** release from solid rocket motor propellant were conducted. The results showed an increase in the rate of **perchlorate** loss with increasing temperature and a decrease in the rate with increasing salinity. Second, a methodology developed for evaluating solid rocket ...

[Full Text](#)[Assessment of Perchlorate Releases in Launch Operations III](#)

Sep 18, 2003 59 pages

Authors: [V. I. Lang](#); [K. R. Bohman](#); [J. T. Tooley](#); [E. W. Fournier](#); [B. B. Brady](#); [AEROSPACE CORP EL SEGUNDO CA SYSTEMS PLANNING AND ENGINEERING GROUP](#)

A method for predicting potential **perchlorate** releases from accidental launch failures has been developed for use in planning and managing launch activities where solid rocket motors are used. The method is also applicable to assessing location and quantity of **perchlorate** release in the event that a launch failure has already occurred. A representative hypothetical case study is presented to illustrate time scales for potential **perchlorate** release into bodies of water under different conditions of temperature and salinity. The report also contains an analysis ...

[Full Text](#)[Analysis of Trace Level Perchlorate in Drinking Water and Ground Water by Electrospray Mass Spectrometry](#)

Oct 1998 33 pages

Authors: [Rebecca A. Clewell](#); [Wayne T. Brashear](#); [David T. Tsuij](#); [Sanwat Chaudhuri](#); [Rachel S. Cassidy](#); [WRIGHT STATE UNIV DAYTON OH DEPT OF CHEMISTRY](#)

A new method involving the use of electrospray mass spectrometry was developed for the detection of trace levels of **perchlorate** in ground water and drinking water. Electrospray mass spectrometry was shown to be both sensitive and selective for the detection of **perchlorate** in aqueous matrices. The method detection limit was calculated to be 0.38 ppb. improvement of more than order of magnitude over the currently accepted method. Percent recovery for the detection of **perchlorate** with this method was found to be 82.4%.

[Full Text](#)[Effects of Ammonium Perchlorate Exposure in Pregnant Rats: A Morphometric Analysis of the Thyroid Gland of Rat Pups](#)

Dec 1998 118 pages

Authors: [William H. Baker](#); [David R. Mattie](#); [Kathleen L. MacMahon](#); [AIR FORCE RESEARCH LAB WRIGHT-PATTERSON AFB OH HUMAN EFFECTIVENESS DIRECTORATE](#)

Characterization of potential risks posed by **perchlorate** contamination of ground water by the partnered efforts of industry representative and federal and state regulatory agencies has been hindered by the paucity of ... study, a byproduct of one of eight new studies recommended to fill the data gaps, addresses the effect of ammonium **perchlorate** on thyroid gland morphology and function in the developing fetus. Female rats were dosed orally with 10, 3, 1, 0.1, or 0 mg/kg ammonium **perchlorate** daily during pregnancy and out to 10 days postpartum. Thyroids from offspring were collected at 5 and 81 ...

[Full Text](#)[Feasibility Study for the Reduction of Perchlorate, Iodide, and Other Aqueous Anions](#)

Jan 1999 24 pages

Authors: [Rebecca A. Clewell](#); [David T. Tsuij](#); [David R. Mattie](#); [WRIGHT STATE UNIV DAYTON OH DEPT OF CHEMISTRY](#)

... used as a technique to determine the feasibility of the use of a coulometric detector in the determination of **perchlorate**, iodide, and various other anions commonly found in drinking water. Through the ... sulfide, and thiocyanate would be reduced, but are poor candidates for coulometric detection. **Perchlorate** was not reduced within the range of potentials allowed by a coulometric detector. Therefore, it does not appear the coulometry can provide an effective method for the detection of **perchlorate**. Studies showed that, of the anions tested, only nitrate, sulfide, and thiocyanate would interfere ...

[Full Text](#)[Synthesis, Evaluation, and Formulation Studies on New Oxidizers as Alternatives to Ammonium Perchlorate in DoD Missile Propulsion Applications](#)

Apr 23, 2007 131 pages

Authors: [Michael A. Dewey](#); [ATK LAUNCH SYSTEMS BRIGHAM CITY UT](#)

**Perchlorate** is found in groundwater and drinking water throughout the United States. This contamination is

primarily attributed to the use of ammonium **perchlorate** in the solid fuel for rockets and missiles. The objective of the program is to develop environmentally benign solid rocket propellant formulations that do not rely on the use of ammonium **perchlorate** (AP) as an oxidizer. This objective supports the goal of reducing future AP contamination in groundwater by reducing the need for production and use of AP as an oxidizer ...

[Full Text](#)

[Decontamination Methods for Ammonium Perchlorate Contaminated Buildings and Equipment Surfaces](#)

Jul 25, 2002 16 pages

Authors: [James T. Miller](#); [Kenneth E. Basom](#); [NAVAL SURFACE WARFARE CENTER INDIAN HEAD DIV MD](#)

To assist in identifying the methods that might be used to remove ammonium **perchlorate** from contaminated surfaces, an extensive literature search was performed. Once candidate reactions were identified, they were tested under laboratory conditions for the selection of the optimum technique. Results are given. To assist in identifying the methods that might be used to remove ammonium **perchlorate** from contaminated surfaces, an extensive literature search was performed. Once candidate reactions were identified, they were tested under laboratory conditions for the selection of the ...

[Full Text](#)

[Assessment of Perchlorate Releases in Launch Operations II](#)

Dec 1, 2002 35 pages

Authors: [V. I. Lang](#); [K. R. Bohman](#); [J. T. Tooley](#); [S. A. Frolik](#); [E. W. Fournier](#); [AEROSPACE CORP EL SEGUNDO CA SYSTEMS PLANNING DIV](#)

Laboratory studies were conducted to determine the rates at which **perchlorate** is released from perchlorate-containing solid propellants and the influence of temperature and salinity on the rates. **Perchlorate** release rates from carboxyl-terminated polybutadiene (CTPB), hydroxyl-terminated polybutadiene (HTPB), polybutadiene-acrylic acid-acrylo-nitrile terpolymer (PBAN), and polyurethane (PU) solid propellants were determined and are reported as diffusion ...

[Full Text](#)

[Perchlorate in Fertilizers](#)

Sep 1999 43 pages

Authors: [J. E. Eldridge](#); [D. T. Tsui](#); [D. R. Mattie](#); [J. Crown](#); [R. Scott](#); [T. Blackman](#); [HUMAN EFFECTIVENESS DIRECTORATE WRIGHT-PATTERSON AFB OH OPERATIONAL TOXICOLOGY BRANCH](#)

This report documents an inter-laboratory collaborative study on the performance on ion chromatography (IC) methods for **perchlorate** analysis in lawn and garden fertilizers. Seven government, private, and commercial laboratories participated in the analysis of 34 aqueous suspensions of the ... This report also evaluates and compares the performance of IC with respect to capillary electrophoresis (CE), Raman spectroscopy (RS), and titration for **perchlorate** analysis. The study found excellent agreement between the ion chromatography and CE results, and little or no agreement between IC and RS or ...

[Full Text](#)

[In-Situ Bioreduction and Removal of Ammonium Perchlorate](#)

May 9, 2006 138 pages

Authors: [John D. Coates](#); [Laurie A. Achenbach](#); [CALIFORNIA UNIV BERKELEY](#)

The objective of the studies described in this report were to gain a better understanding of the microbiology involved in microbial **perchlorate** reduction with an aim of enhancing the application of this novel metabolism to the attenuation of **perchlorate** contaminated environments.

[Full Text](#)

[Environmental Screening Assessment of Perchlorate Replacements](#)

Aug 2007 53 pages

Authors: [Jay L. Clausen](#); [Stephen Clough](#); [Michael Gray](#); [Patrick Gwinn](#); [ENGINEERING RESEARCH AND DEVELOPMENT CENTER HANOVER NH COLD REGIONS RESEARCH AND ENGINEERING LAB](#)

A screening level assessment of the fate, transport, and toxicity of four potential replacements for **perchlorate** was performed. Resulting data will allow for evaluation and minimization of the potential environmental liability associated with the use of energetic compounds as ... (ADN); hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX); octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX); and 1,1-diamino-2,2-dinitroethene (FOX-7). Evaluations of ammonium **perchlorate** (AP) provide a point of comparison. From an environmental fate and transport perspective, it appears ADNA, ADNDNE, DNNC, and HCO may ...

[Full Text](#)

[INVESTIGATIONS LEADING TO THE DESIGN AND DEVELOPMENT OF MAGNESIUM/ MAGNESIUM PERCHLORATE BATTERIES](#)

Apr 30, 1965 32 pages

Authors: [James Sharpe](#); [EAGLE-PICHER CO JOPLIN MO COUPLES DEPT](#)

The magnesium/magnesium **perchlorate**/mercuric oxide battery system exhibited good capacity and voltage tolerance for most of the discharge rates at +75F. Low temperature and high temperature studies of these batteries, conducted at the same discharge rates, demonstrated that this system operates at high efficiency over a temperature range of 40F to +125F. An activated stand of one week with less than 10% capacity loss can be expected from a mercuric oxide cell utilizing AZ 31.

[Full Text](#)

[Explosive Behavior of Aluminized Ammonium Perchlorate](#)

May 1972 83 pages

Authors: [Donna Price](#); [Jr. Clairmont A. R.](#); [J. O. Erkman](#); [NAVAL ORDNANCE LAB WHITE OAK MD](#)

Addition of aluminum to ammonium **perchlorate** (AP) increases its infinite diameter detonation velocity, decreases its critical diameter and (at sufficiently low % TMD) the Eyring reaction zone length. For 7-9 microns AP and 7 microns Al, the maximum of these effects occurred at about 10% Al. Regular detonation behavior could be observed only in the range of 55 to 40 (or lower) % TMD. All mixtures tested in this range exhibited group 2 behavior as does AP itself.

[Full Text](#)

[Development of Ultrafine Ammonium Perchlorate Technology.](#)

Sep 1973 307 pages

Authors: [D. A. Flanigan](#); [W. D. Stephens](#); [S. L. Vance](#); [MORTON THIOKOL INC HUNTSVILLE AL HUNTSVILLE DIV](#)

Ultrafine ammonium **perchlorate** (UFAP) handling, storage, and shipping properties were investigated with



respect to product coatings, solid propellant formulation processing and rocket ballistic parameters. Approximately 40 compounds were evaluated and six materials were identified that protect UFAP from particle growth during storage and handling. It was demonstrated that coated UFAP could be stored for several months under low (30%) R.H. humidity and temperatures to 60 C, but not under high humidity and temperature. Hazard and shipping tests showed UFAP could be shipped as DOT Class B if it ...

[Full Text](#)

[Fluoro-Epoxyes as Grinding Aids and Water-Resistant Coupling Agents for Ultrafine Ammonium Perchlorate Powders.](#)

Dec 22, 1980 8 pages

Authors: [Frederick M. Fowkes](#); [LEHIGH UNIV BETHLEHEM PA DEPT OF CHEMISTRY](#)

Highly fluorinated epoxy resins, cured with silicone diamines, have been adsorbed from Freon liquids onto ammonium sulfate (a model for ammonium **perchlorate**) and cured in place as cross-linked monolayers which can be bonded into the urethane rubber matrix. These materials are found to be excellent grinding aids, allowing a ten-fold reduction in particle size compared to present grinding aids. The stability of surface area when stored in humidity chambers was not bad; two batches stored at 51% relative humidity for six weeks retained 30 square meters per gram with a coating of 2.2 mg/sq. meter, ...

[Full Text](#)

[Enantiomeric Separation of Chiral Alpha-\(1-Naphthyl\)Ethyl Ammonium Perchlorate by Silica Gel-Bound Chiral Pyridino-18-Crown-6 Ligands](#)

May 11, 1994 9 pages

Authors: [P. Huszthy](#); [J. S. Bradshaw](#); [A. V. Bordunov](#); [R. M. Izatt](#); [BRIGHAM YOUNG UNIV PROVO UT DEPT OF CHEMISTRY](#)

The separation of (alpha-(L-NAPHTHYL)ETHYL) ammonium **perchlorate** (NapEt) into its (R) and (S) forms using silica gel-bound dimethylpyridino-18- crown-6 ligand (S,S)-I with methanol as an element is reported. We also report the synthesis of a new silica gel-bound diphenyl-substituted pyridino-18-crown-6 ligand (R,R)-2 by the following reactions. Dimethyl chelidamate (7) was first alkylated with 11-iodoundec-1-ene (6) on the phenolic oxygen and the resulting ether diester was reduced to form 4-undecenyloxy-2,6-pyridinedimethanol (8). Tosylation of 8 gave ditosylate 9 which was cyclized with ...

[Full Text](#)

[Effects of Ammonium Perchlorate on the Thyroid Hormone Levels of the Sprague-Dawley Rat](#)

Dec 1995 69 pages

Authors: [James H. King Jr](#); [AIR FORCE INST OF TECH WRIGHT-PATTERSON AFB OH SCHOOL OF ENGINEERING](#)

The purpose of this research was to determine the threshold dose for ammonium **perchlorate** (AP) in the Sprague-Dawley rat. No dose response data exist for AP and the EPA has studied literature on the subject of perchlorates to determine a provisional reference dose. The Perchlorate Group, a consortium of DoD and industry representatives, believes this provisional reference dose is too conservative. This experiment was executed to provide dose response data on which to base a more accurate reference dose. The study consisted of eight groups of 12 Sprague-Dawley rats, six male and six female, ...

[Full Text](#)

[Developmental Toxicity Screen of Ammonium Perchlorate Using Hydra attenuata](#)

Dec 1996 35 pages

Authors: [P. D. Confer](#); [R. E. Wolfe](#); [E. R. Kinkead](#); [MANTECH ENVIRONMENTAL TECHNOLOGY INC DAYTON OH](#)

Ammonium **perchlorate** (AP) is an oxidizer used as a component in solid rocket propellants, munitions and fireworks. An in vitro developmental toxicity screen was performed to determine the developmental hazard index (A/D ratio) for AP using the hydra assay. Hydra attenuata have the capability for whole body regeneration. The assay employs exposing both adult hydra and 'artificial embryos' composed of disassociated hydra cells to test compounds to investigate developmental toxicity. Results from the hydra assay of AP indicated the minimal effective concentration required to elicit a toxic ...

[Full Text](#)

[Experimental and Theoretical Study of 1,5-Diamino-4-H-Tetrazolium Perchlorate](#)

2004 29 pages

Authors: [Greg Drake](#); [Tommy Hawkings](#); [Leslie Hall](#); [Jerry Boatz](#); [Ashwani Vij](#); [AIR FORCE RESEARCH LAB EDWARDS AFB CA SPACE AND MISSILE PROPULSION DIV](#)

The synthesis and characterization of 1,5-diamino-1,2,3,4-tetrazolium **perchlorate** were carried out. Experimental evidence strongly supports the protonation of a nitrogen atom of the tetrazole ring, including the structure observed in a single crystal x-ray diffraction study of the title compound. Quantum chemical calculations were performed at the CCSD(T)/6-311G(2df,p)//MP2/6-311G(d,p) level of theory to determine the relative energies of all possible N-protonated structures of the 1,5-diamino-1,2,3,4-tetrazole ring. The predicted geometry of the most stable isomer compares favorably ...

[Full Text](#)

[Computational and Experimental Study of Ammonium Perchlorate/Ethylene Counterflow Diffusion Flames](#)

Aug 4, 2000 9 pages

Authors: [M. D. Smooke](#); [R. A. Yetter](#); [T. P. Parr](#); [D. M. Hanson-Parr](#); [M. A. Tanoff](#); [M. B. Colket](#); [R. J. Hall](#); [YALE UNIV NEW HAVEN CT DEPT OF MOLECULAR BIOPHYSICS AND BIOCHEMISTRY](#)

We investigated the modeling of counterflow diffusion flames in which the products of ammonium **perchlorate** (AP) combustion were counterflowed against an ethylene fuel stream. The two-dimensional problem can be reduced to a one-dimensional boundary value problem along the stagnation point streamline through the introduction of a similarity transformation. By utilizing recent developments in hydrocarbon, chlorine, NO<sub>x</sub> and AP kinetics, we formulated a detailed transport, finite-rate chemistry system for the temperature, velocity, and species mass fractions of the combined flame system. A detailed ...

[Full Text](#)

[Modified Activated Carbon Perchlorate Sorbents](#)

Jan 25, 2007 42 pages

Authors: [Lukens](#); [Wayne W Jr](#); [CALIFORNIA UNIV BERKELEY LAWRENCE BERKELEY LAB](#)

A new method for improving the selectivity of activated carbons for adsorbing **perchlorate** has been developed. The technique involves alkylation of functional groups present on the activated carbon surface. The modified activated carbon typically have adsorption capacities 5-10 times that of the parent activated carbon. The

[Full Text](#)

technique is believed to mainly alkylate the oxygen surface groups rather than the nitrogen surface groups.

[Modeling a Field Application of In Situ Bioremediation of Perchlorate- Contaminated Groundwater Using Horizontal Flow Treatment Wells \(HFTWs\)](#)

Mar 2004 193 pages

Authors: [Peter G. Chosa](#); [AIR FORCE INST OF TECH WRIGHT-PATTERSON AFB OH SCHOOL OF ENGINEERING AND MANAGEMENT](#)

Full Text

**Perchlorate** contaminated groundwater is rapidly becoming a significant environmental remediation issue for the Department of Defense. ... (HFTW) system to effect the in situ biodegradation of **perchlorate** through the addition of an electron donor is modified to ... The modified model is then applied to an existing **perchlorate** contaminated site that will be used for an evaluation of the HFTW technology ... and HFTW pumping rates lead to more **perchlorate** degradation in terms of total mass of ... not impact the ability of the HFTW technology to effect in situ biodegradation of **perchlorate** at the evaluation site.

[Disposal Technology for Solid Rocket Propellant](#)

Jun 19, 1998 64 pages

Authors: [Hubert Attaway](#); [ADVANCED SCIENCES INC ALBUQUERQUE NM](#)

Full Text

... , fabricate, and demonstrate a pilot-scale, complete AP (ammonium **perchlorate**) biodegradation (reactor) system using actual effluent from washout ... and Thiokol-Morton (Utah) that virtually complete destruction of ammonium **perchlorate** in wastewaters was possible. The operating costs for the bioreactor system shows that ... , maintenance, and labor) are at a minimum for 2000-4000 ppm **perchlorate** effluents. This is because maximum thruput can be achieved near 4000 ppm effluents. Nutrient cost is approximately linear with **perchlorate** reduced. As a result, up to 4000 ppm **perchlorate** effluents can ...

[Oxygen Source for Underwater Vehicle Fuel Cells](#)

Mar 4, 2002 35 pages

Authors: [William E. Batton](#); [Kevin D. Hotton](#); [Jonathan A. Peters](#); [Martin Klanchar](#); [BARBER-NICHOLS ENGINEERING CO ARVADA CO](#)

Full Text

... as a fuel for the release of oxygen by the decomposition of lithium **perchlorate** at low temperature. The test apparatus included two stainless vessels, one to hold molten lithium **perchlorate** and the other the reaction vessel. The molten **perchlorate** was fed to the reaction vessel using dry nitrogen gas as a driver. Two tests were conducted using ... oxygen immediately upon introduction of 600 deg F lithium **perchlorate**. These tests lasted for eight and thirteen minutes. ... both manganese tests, most likely due to lithium **perchlorate** decomposition in the nozzle due to high temperature. The report ...

[Managing Crises in Defense Industry: The PEPCON and Avtex Cases](#)

Nov 1996 59 pages

Authors: [Steven R. Linke](#); [NATIONAL DEFENSE UNIV WASHINGTON DC INST FOR NATIONAL STRATEGIC STUDIES](#)

Full Text

... States lost half of its capacity to produce ammonium **perchlorate** when explosions and fire destroyed one of the two producing plants. Ammonium **perchlorate** is the oxidizer essential to solid-fuel rocket motors. Here, without ... was an excellent test case. Existing ammonium **perchlorate** had to be carefully allocated and additional production capacity ... and some would be curtailed if sufficient ammonium **perchlorate** was not available. This paper documents the government's actions ... various legal and administrative hurdles in both restoring the capacity and allocating available ammonium **perchlorate**.

[Protocol for Enhanced in situ Bioremediation Using Emulsified Edible Oil](#)

May 2006 100 pages

Authors: [Robert C. Borden](#); [SOLUTIONS INDUSTRIAL AND ENVIRONMENTAL SERVICES RALEIGH NC](#)

Full Text

Management of groundwater contaminated with chlorinated solvents, **perchlorate**, and explosives is one of the Department of Defense's (DoD's) greatest environmental challenges. ... in the ground, and take longer to remediate. Similarly, groundwater contaminated with **perchlorate** has become a major environmental issue for the DoD due to the ... and/or disposal of solid rocket fuel and munitions containing ammonium **perchlorate**. These releases have resulted in extensive contamination of groundwater supplies. **Perchlorate** is highly soluble in water and poorly sorbs to mineral surfaces. The objective of this ...

[CASE GUN PROPELLANT IGNITION](#)

Jun 10, 1953 20 pages

Authors: [R.D. COOL](#); [L.F. GOWEN](#); [NAVAL ORDNANCE LAB WHITE OAK MD](#)

Full Text

... propellants. Test results show that the relative ease of ignition of the different types of propellants varies with the composition of the ignition mixture and may even be reversed by using different mixtures. Experimental compositions containing boron-potassium **perchlorate**, magnesium-potassium **perchlorate**, zirconium-potassium **perchlorate**, zirconium-potassium perchlorate-lead dioxide, proved to be superior to black powder in igniting the four propellants tested. In addition to the ignition studies, the mixtures were investigated to further determine their suitability for use in gun primers. ...

[INVESTIGATION OF THE FEASIBILITY OF MEASURING THE CHAMBER](#)

[TEMPERATURE OF SOLID PROPELLANT ROCKET MOTORS BY USING MICROWAVE ATTENUATION MEASUREMENTS](#)

Jun 1970 69 pages

Authors: [R. G. Olsen](#); [R. W. Grow](#); [UTAH UNIV SALT LAKE CITY MICROWAVE DEVICE AND PHYSICAL ELECTRONICS LAB](#)

Full Text

... of a small solid propellant rocket motor is used to investigate the feasibility of determining the temperature of the plasma by using microwave attenuation data. Potassium **perchlorate** is substituted for some of the ammonium **perchlorate** in the propellant to give an electron density that produces an easily measurable attenuation. The theoretical results show that for a known propellant composition and potassium **perchlorate** concentration, both the plasma temperature and chamber pressure at equilibrium may be found from one attenuation measurement. Also, for a known ...

[Analysis of Explosives in Sea Water and in Ocean Floor Sediment and Fauna](#)

Sep 1972 18 pages

Authors: [John C. Hoffsommer](#); [DONALD J. GLOVER](#); [Jerome M. Rosen](#); [NAVAL ORDNANCE LAB WHITE OAK MD](#)[Full Text](#)

Analyses for TNT, RDX, Tetryl and ammonium **perchlorate** have been made on sea water, sediment and ocean floor fauna samples taken from a munitions dumping area 85 miles west of Cape Flattery, Washington; and on similar samples taken 172 miles south-southeast of ... in any of the samples examined. New procedures were developed for determining TNT, RDX and Tetryl in ocean floor sediment and fauna employing a combination of thin layer and gas chromatographic techniques. Ammonium **perchlorate** was measured by its reaction with tetraphenylarsonium chloride which produced an insoluble **perchlorate** salt.

Total Results: **133**Pages: Previous [\[1\]](#) [2](#) [3](#) [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.