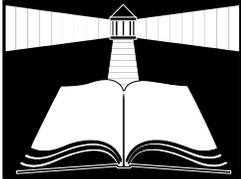


HTIS



Hazardous Technical Information Services

BULLETIN

VOL. 18 NO. 4

JUL – AUG 2008

In This Issue

Hazardous Waste Listing for Epinephrine and Other “P” and “U” List Drugs Clarified

CPSC Study Finds Home Lead Test Kits Unreliable

Banning Bisphenol A

DLA Green Products

DLA’s Organic Manufacturing

DOE’s Joint BioEnergy Institute

PHMSA Permits Certain Fuel Cell Cartridges on Passenger Aircraft

EPA’s Final Risk Mitigation Decision for Ten Rodenticides

EPA’s New Energy Star Specifications for Boxes that Deliver Television and Video Content

New EPA Rule Set to Protect Children from Lead Exposure

EPA to Provide Monthly Regulatory Updates

EPA Releases its 2008 Report on the Environment

NIOSH Alert on Controlling Excessive Exposures to Lead and Noise for Indoor Firing Ranges

Occupational Exposure to Magnetic Fields

Chemical Ranking Systems Can Advance Compliance Program Needs

By Carole LeBlanc, Special Expert, Emerging Contaminants, Office of the Deputy Under-Secretary of Defense

To enhance chemical management within the Defense Department, the DOD Emerging Contaminants Directorate has researched chemical evaluation and ranking systems with an eye towards a wider use in weapons development, operations and maintenance (O&M), and other key DOD functional areas. The review of chemical ranking systems is part of an effort to comply with Presidential Executive Order (EO) 13423 on using lower-risk chemicals and reducing federal

environmental and energy impacts.

The specific focus of this research is on the use of chemical ranking systems within the systems acquisitions life-cycle. This is based on the recognition that upfront costs for environmentally-friendly chemicals may be offset by significant opportunities for long-term cost-avoidance in DOD environmental legacy management programs.

A chemical ranking system allows comparisons based on peer-reviewed environmental health, toxicity, fate, and transport information in making risk-based decisions for specific applications. Chemical ranking systems assist users in the evaluation of the human health and ecological impacts of a range of viable chemicals to determine which have the best environmental health profiles for particular

The HTIS Bulletin is designed to keep DOD personnel informed of technical and regulatory developments on the environmentally safe management of hazardous materials and wastes. For technical inquiries, call **DSN 695.5168** or commercial **804.279.5168** or toll free **800. 848.4847**

applications while meeting or exceeding performance criteria. In general, working to eliminate or reduce the use of chemicals on a list of banned or restricted compounds is not defined as using a chemical evaluation and substitution system.

Existing chemical ranking and labeling systems developed by industry, government and non-profit organizations for broader application within DOD were also surveyed. The report found that the Army, Navy and Air Force have developed and/or currently use 17 chemical ranking systems, but that these tend to be application-specific. Seven chemical ranking systems were identified for detailed consideration based on accessibility, cost, flexibility, database quality, and potential for wider applicability.

While it is true that adopting a single system DOD-wide is unlikely to meet different DOD programs' needs and priorities, continuing to use and develop 17 systems is suboptimal.

Weapons design engineers and scientists may value sophisticated decision-matrix approaches whereas lists identifying prohibited, controlled and useable chemicals may be of more value to subcontractors

and maintenance personnel. However, many of the systems identified in the report use the same or similar basic informational elements and thus a single backbone system which the services programs rely on may be beneficial and avoids duplication. Supporting a shared database and program-specific ranking system for weapons development/acquisition functions, and another set for O&M activities, could optimize DOD compliance with EO 13423 and lead to significant gains, according to the report.

Both DOD chemical management objectives and DOD compliance with EO 13423 could be advanced by intensifying training opportunities to ensure wider adoption of chemical ranking systems.

Future steps may involve creating a "roadmap" to help DOD decision-makers select the most appropriate system for their purposes and follow-through with training appropriate personnel in that system.

For further information or to receive a copy of the EC Directorate's report "Identification and Evaluation of Chemical Ranking Systems," please send an email to Carole.LebLANc@osd.mil.

Hazardous Waste Listing for Epinephrine and Other "P" and "U" List Drugs Clarified

By Tom McCarley,
Chemist, HTIS

The common drug epinephrine is regulated as an acutely toxic listed hazardous waste when it can no longer be used for its intended purpose (e.g. expired shelf life or contaminated). Commonly known as adrenaline, epinephrine has a number of critical uses in medicine including formulations for asthma treatment and injectors to handle severe allergic reactions (e.g. insect stings) that can lead to anaphylactic shock.

The hazardous waste listing at 40 CFR 261.33 for waste code P042 shows only epinephrine with Chemical Abstracts number 51-43-4 and does not address salts of epinephrine such as the hydrochloride which is how it is typically supplied. Some hazardous waste listings apply to a base chemical and all of its salts. What about epinephrine?

According to the EPA, the listing does *not* extend to

the salts of epinephrine but to the base compound only. Therefore, many of the formulations supplied as emergency supplies and in our medical facilities will not meet the hazardous waste listing. In a memorandum to the EPA Regional Hazardous Waste Directors dated October 15, 2007, the EPA's Director of the Office of Solid Waste, Matt Hale, explains the rationale for not including epinephrine salts in the P042. The document is available from the EPA's RCRA Online system and a direct link is

[http://yosemite.epa.gov/osw/rcra.nsf/0c994248c239947e85256d090071175f/2F701627EB73B2AB852573D2005E0B4F/\\$file/14778.pdf](http://yosemite.epa.gov/osw/rcra.nsf/0c994248c239947e85256d090071175f/2F701627EB73B2AB852573D2005E0B4F/$file/14778.pdf).

Questions also arise about the remaining drops in an epinephrine syringe after use; are those drops regarded as P042 hazardous waste? Again the EPA has said no in an earlier RCRA hotline report from December 1994 and available at

[http://yosemite.epa.gov/osw/rcra.nsf/0c994248c239947e85256d090071175f/1C1DEB3648A62A868525670F006BCCD2/\\$file/13718.pdf](http://yosemite.epa.gov/osw/rcra.nsf/0c994248c239947e85256d090071175f/1C1DEB3648A62A868525670F006BCCD2/$file/13718.pdf).

By further interpretation, the EPA has extended this syringe residual interpretation to other

drugs administered by syringe that may be "P" or "U" listed hazardous waste. The further interpretation applies to medicinal syringe application only where the residuals are very small. See the April 14, 2008 interpretive memo from the EPA's Robert Dellinger to Sure-Way Systems, Inc – available for download at

<http://yosemite.epa.gov/osw/rcra.nsf/0c994248c239947e85256d090071175f/6a5dedf2fba24fe68525744b0045b4af!OpenDocument>

As in all cases regarding hazardous waste regulations, remember that all States except Alaska and Iowa operate their own hazardous waste programs under the EPA oversight and authorization. Those States can be more stringent than the Federal regions regarding waste classification and interpretive guidance.

References: 1. EPA Office of Solid Waste RCRA Online document # 14778 "Scope of Hazardous Waste Listing P042 (Epinephrine) – October 15, 2007 Memorandum – Hale to EPA RCRA Division Directors and EPA Regions I-X. 2. EPA Memorandum, April 14, 2008, Robert Dellinger, EPA Office of Solid

Waste, to Gary Chilcott, CEO/President of Sure-Way System, Inc.

CPSC Study Finds Home Lead Test Kits Unreliable

By Ariel Rosa,
Environmental Protection
Specialist, HTIS

The results of four studies conducted by the U.S. Consumer Product Safety Commission (CPSC) staff members concluded that consumer home lead test kits may not be reliable or useful. The CPSC staff used commonly available test kits on a variety of paints and other products containing different levels of lead. Many of the tests performed using the kits did not detect lead when lead was present (false negatives) and some indicated lead was present when it was not (false positives). Of the 104 total test results, more than one-half (56) were false negatives, and two were false positives. None of the kits consistently detected lead in products if the lead was covered with a non-lead coating. The CPSC staff studied two common types of home lead test kits developed to detect levels of lead in household paint that are usually much higher than

the CPSC's regulatory maximum level of 0.06%.

According to the study these kits may not be useful for detecting relatively low lead paint concentrations or for detecting lead in other materials, such as metal jewelry or vinyl products. In addition, both types of kits may be affected by substances such as iron, tin, dirt, or by paint colors that can cause the color in the test kit to change or hide the color change, thereby interfering with interpretation of the test results.

Consumers should exercise caution when using these test kits to evaluate consumer products for potential lead exposures. False results can make it difficult or impossible for consumers to determine the proper course of action to take. In fact, the CPSC staff has tested a number of other samples that had been identified by consumers and others based on their use of inexpensive test kits as having high lead levels. To date, none of these items has actually had high lead levels based on CPSC lab analysis. This is another indication of the poor reliability of the kits for this purpose. Testing by a qualified laboratory and trained personnel is the only way to accurately

assess the potential risk posed by a consumer product that may contain lead.

Reference: 1. www.cpsc.gov 2. <http://www.cpsc.gov/cpscpub/prerel/prhtml08/08038.html>

Banning Bisphenol A

By Moraima Lugo-Millán,
Chemist, HTIS

Scientists from the National Toxicology Program (NTP) under the U.S. Department of Health and Human Services agreed that Bisphenol A (BPA), a compound used in plastic water bottles, baby bottles and the lining of many food, drinks, and baby formula cans, could be linked to physiological problems that occur when people ingest BPA that has migrated from food containers into their food.

Bisphenol A (BPA) is an industrial chemical used to make polycarbonate plastic resins, epoxy resins, and other products. Polycarbonate plastic is a lightweight, tough, high-performance, high heat and electrical resistance material with a wide variety of applications. It is used in digital media products, including CDs, DVDs, electrical and

electronic equipment, automobiles, sports safety equipment, reusable food, and drink containers, such as water carboys, and baby bottles, surface coatings for cans and metal jar lids, among others.

This chemical has raised concerns because it appears to mimic the effects of estrogen, interfering with hormone levels and cell signaling systems. Studies have revealed that people exposed to high concentrations of BPA have greater risks of developing uterine fibroids, breast and prostate cancers, and decreased sperm counts. It has also been linked to birth defects and abnormal genital development. Newborns and children seem to be more vulnerable to the existing exposure levels of BPA. This chemical could have neural and behavioral effects on fetuses, infants, and children and possible effects on prostate gland, mammary gland and early onset of puberty in exposed fetuses, infants, and children.

Canada is the first country to set BPA exposure limits, targeting the importation and sale of baby bottles containing this chemical. Canada's decision is based on its risk assessment of the

chemical. Meanwhile, many manufacturers in the U.S. are eliminating the use of BPA in their manufacturing processes, and toy stores have announced a BPA phase out for these products also.

The BPA report by the U.S. National Toxicology Program concluded that there are some concerns for neural and behavioral effects in fetuses, infants, and children at current human exposures. The NTP also has some concern for BPA exposure in these populations based on effects in the prostate gland, mammary gland, and earlier age for puberty in females. The Food and Drug Administration (FDA) is reviewing these concerns, but stated that they have evidence indicating that FDA-regulated products containing BPA currently on the market are safe and exposure levels of this chemical from food contact materials are below those that may cause health effects, but there are more studies to conduct in this matter. Manufacturers banning the chemical say they are taking action even in the absence of conclusive evidence of serious health risks.

The consumers' demand for BPA-free products is increasing rapidly and

manufacturers are switching to BPA-free alternatives to meet customer needs. Manufacturers are exploring other alternatives for BPA-containing products and some companies are successfully using the copolyester called Tritan.

Beyond switching baby bottles, another way to lower exposure to BPA is to avoid heating foods and liquids in plastic containers made of this material. The NTP says that the amount of BPA that leaches out, may depend more on the temperature of the liquid, food, or container itself than on the age of the plastic bottle or dish. It is recommended to avoid storing food or beverages in polycarbonate plastic, and avoid canned goods, since the linings of metal cans often contain Bisphenol A.

For people who continue to use polycarbonate food and drink containers, not heating them should also reduce exposure.

Alternatives to polycarbonate include polyethylene and polypropylene plastics, as well as glass.

The leading U.S. manufacturers in the infant care market will phase out

BPA containing products by the end of 2008. Polycarbonate resins account for roughly three quarters of U.S. demand for BPA and epoxy resins for high performance coatings make up nearly all the rest. Most uses of these products, including automotive parts, compact discs, flooring products, and electronics, are not affected by the BPA initiatives.

References: 1.

<http://www.fda.gov/oc/opa.com/hottopics/bpa.html>

2.

<http://www.epa.gov/endocrine/inventory/FDA-7.html>

3.

<http://ntp.niehs.nih.gov/ntp/web/index.cfm?objectid=72016020-BDB7-CEBA-F3E5A7965617C1C1>

News from DLA

DLA's Green Products

By Steve Perez,
Management Analyst,
Green Procurement
Program, DSCR

The Defense Logistics Agency (DLA) wants to make it easier for customers to locate and order Green Products. To help make that happen, DLA has opened a Green Products (GP) office at the Defense Supply Center

Richmond (DSCR) in Richmond, Virginia. The DLA Green Products team wants to focus on those products and processes that are most challenging to you today. We want to catalog new products and include them in the federal supply system so that DLA customers can easily order them.

Are you aware of any locally-purchased products that you would like to see made available through the supply system? Do you have a process that currently involves the use of a hazardous material for which you want a Green alternative? If so, contact the DLA Green Procurement office at DSCR in Richmond, VA via any of the following methods:

- E-mail the GP folks at GreenProducts@dla.mil.
- Call 804-279-5226 or DSN 695-5226.
- Web form at http://www.ds.cr.dla.mil/us_erweb/aviation_engineering/BUY_GREEN/buy_green_form.asp

For additional information please contact Steve Perez, Management Analyst,

Green Procurement Program, DSCR-VB, COM 804-279-5311 or DSN 695-5311.

DLA's Organic Manufacturing

By Ariel Rosa, HTIS and William Jahna, DSCR Organic Manufacturing Program

During and immediately after WW II there was a large and diverse array of government-owned/government-operated (GOGO) defense industrial facilities, most of which were closed or sold by the beginning of the Eisenhower Administration. More recent rounds of BRAC closures and realignments in 1988, 1991, 1993 and 1995 have yielded today's organic industrial base.

The remaining GOGOs are either oriented toward the production of specialized military systems that have no counterpart in the private sector or for the repair and maintenance of existing systems. In their efforts to reduce the health risks, potential environmental hazards and cost associated with the paint removal methods used, (mechanical versus chemical) some organic manufacturing (OM) facility managers have given consideration to all possible alternatives including outsourcing.

Meeting the EPA's regulatory requirements such as Volatile Organic Compounds (VOC's) emission control has also become a challenge to OM facilities where application of Chemical-Agent Resistant Coating (CARC paint) is performed. The costs of personal protective equipment, engineering controls, equipment maintenance and medical surveillance have also contributed to the overall regulatory requirements challenge. The term "manufacturing" covers a broad set of functional tasks required to tie together all the elements needed to make a product. Among these functional tasks are personnel and the skills needed, selection of materials, appropriate method of production, capable machinery, scheduling, measurements, and quality assurance management systems. Along with the functional tasks there is a variety of functional specialties supporting manufacturing, these functional specialties include but are not limited to contract administration service personnel, laboratories, contractors, asset management staff and depot maintenance personnel. With all that said, **OM is referred herein as an agreement entered between the Defense Logistics Agency**

(DLA) and a US GOGO manufacturer to produce quality products for the Department of Defense.

Government facilities involved in OM production include shipyards, arsenals, military repair depots, research and development laboratory, testing facilities, proving grounds, and other DOD operated factories.

Role of Depot-Level Maintenance in OM

The scope of depot maintenance ranges from the repair, modification, or overhaul of an entire weapon system (e.g., aircraft or ship), to the work done on assemblies (e.g., engine), down to the repair of subassemblies (e.g., engine blades) and individual components. Corrosion control and structural rehabilitation are critical activities at maintenance depots, particularly with weapon systems that have been exposed to corrosive elements and severe operating conditions for extended periods. Depot maintenance also encompasses the installation of modifications to extend the operational life of weapon systems or to improve their performance.

Currently the Military Services operates 22

organic depot maintenance activities. Most of the organic depot maintenance activities have more than 400 direct labor personnel. It was estimated that by the end of fiscal year 2007 almost 78,000 DOD depot maintenance employees would have accomplished more than 88 million hours of organic depot-level maintenance work on a wide variety of assets.

The depot-level repair and overhaul of DOD's weapon systems, equipment, and other materiel may occur in facilities owned and operated by the Military Services or at industrial sites operated by contractors. However, about 52 percent of all depot maintenance expenditures are for work performed by organic depots.

Organic depot maintenance accounts for only one-sixth of DOD's expenditures on maintenance and repair of military materiel. However, unlike most private sector providers of depot-level repair, DOD's depots are multi-product capable. Each DOD maintenance depot is equipped to produce the hard to find items when no offer is received to produce them, there is no source, the part is an Emergency Supply

Operations Center Requirement, the private sector price and/or delivery time frame is unacceptable.

Organic maintenance depots provide both the capabilities and the management mechanisms needed for agile product support to the warfighter under a wide variety of operating conditions. As such, these depots constitute DOD's core weapon system sustainment capability.

Few of the many benefits that emerge from having an in-house manufacturing department that has all the capabilities necessary to produce new and modified equipment include:

- Capability to handle surge production (quick response to demand fluctuations),
- Implementing a mobilization plan where you can control that the process is done faster (high level of delivery performance),
- Flexibility to support material situations that may arise as a result of maintaining military readiness, and

<ul style="list-style-type: none"> • Maintain work skill level <p>DLA policy mandates that private industry be the primary source of supply. However, designated organic manufacturing sources can be used at the "first indication" that private industry cannot meet Government requirements. Organic manufacturing may be solicited:</p>	<p>department authority,</p> <ul style="list-style-type: none"> • If the acquisition is Diminishing Manufacturing Sources (DMS) or Life of Type buy, or • If no technical data exists on an item. 	<p>Department approval.</p> <p>Value Engineering serves the following key functions in its ability to take advantage of Organic Manufacturing:</p>
<ul style="list-style-type: none"> • When the Government does not receive responsive technically acceptable offers to solicitations. A response may be considered unacceptable if; the offeror does not propose to meet the Required Delivery Date (RDD) or the proposed price is considered unreasonable, 	<p>Organic Manufacturing is a part of Value Engineering (VE) and DOD has had an active VE program since the early 1960s. In the DOD, VE is defined as a systematic effort directed at analyzing the functional requirements of DOD systems, equipment, facilities, procedures, and supplies for the purpose of achieving the essential functions at the lowest total cost, consistent with the needed performance, safety, reliability, quality, and maintainability.</p>	<ul style="list-style-type: none"> • Coordinate work with organic sites, • Authenticate and validate part information, • Follow-up on request for quotes and project orders, • Serve as the central POC for all incoming and out going information to track each project, • Maintain a listing of OM sites, POCs and their capabilities, • Maintain database on DSCR NSNs manufactured organically,
<ul style="list-style-type: none"> • If an item has never been acquired from the private sector as a result of being designated for public manufacture under the authority of the Army Arsenal Act (10 U.S.C. 4532) or similar military 	<p>The DOD VE program continues to have two distinct components:</p> <ul style="list-style-type: none"> • An in-house effort performed by DOD military and civilian personnel; and • An external effort performed by DOD contractors and applied to contracts after 	<ul style="list-style-type: none"> • Promote the process within the product centers and organic sites, and • Coordinate with DLA Headquarters in developing and updating the Organic

Manufacturing Policy for DSCR and DOD.

Our procurement laws and policies dictate that private industry shall be the primary source of supply. But when contractor default, industry chooses to forego bidding on items, or military readiness needs dictate schedules that cannot be met by the procurement process, organic manufacturing may be the only viable alternative.

A government-owned/government-operated facility provides a safety net for the few programs that cannot be satisfied by the present industry/government arrangement. However, maintaining and supporting an organic manufacturing facility requires a commitment of tremendous resources. Depot maintenance in general and depot maintenance provided by organic DOD facilities face challenges that are notably different from those of the Cold War era.

Regardless of the challenges, or changes in regulatory requirements under Executive Order 13423 of January 24, 2007, DOD organic facilities as well as all Federal Agencies are required to conduct their

environmental, transportation, and energy-related activities under the law in support of their respective missions in an environmentally, economically and fiscally sound, integrated, continuously improving, efficient, and sustainable manner.

Organic manufacturing continues to provide the necessary assets to maintain the DOD readiness at all times. To support such diversified product lines state-of-the-art equipment is required, including specialized computers and software, welding, heat treating, grit blasting, paint booth and fabrication centers. To function efficiently as a manufacturer a well trained and experienced workforce is also necessary. Certainly when warfighters on the field receive and use identified products made in an organic manufacturing facility they can rest assured that it is a quality product. When DLA is the force responsible for the delivery of such assets the warfighter and their supporters know they have received the Right Service, Right Item at the Right Place, Right Time and Right Price, Every Time.

Reference: 1. DLA
TECHNICAL SUPPORT
POLICY AND

PROCEDURES
DESKBOOK (Nov 1, 2002). 2. Depot Maintenance Strategic Plan (Part 1 & 2) Program Manager "Benefits of In-House Manufacturing".

News from DOE

DOE's Joint BioEnergy Institute

By Tom McCarley,
Chemist, HTIS

Led by the Department of Energy's (DOE) Lawrence Berkeley National Laboratory, the Joint BioEnergy Institute (JBEI) (<http://www.jbei.org/>) is a partnership of six research facilities to look at converting lignocellulosic biomass into fuels, specifically fuels to power our transportation needs.

JBEI's primary mission is to convert the solar energy stored in plants into liquid fuels that can replace gasoline. The JBEI website lays out the current scenario with respect to transportation fuels.

"Transportation fuels are the largest end use of energy by sector in the U.S. A full two-thirds of the world's petroleum resources are used for transportation, and 60% of that is used for ground

transportation. Despite increasing demand, petroleum production is expected to peak within 10-30 years, after which time worldwide production will decline until resources are exhausted, resulting in dramatically higher fuel costs and potentially disastrous geopolitical conflicts for resources. What's more, each a gallon of gasoline and diesel produces an astonishing 20 pounds of CO₂ (7 tons per vehicle per year), heavily contributing to global warming and the far-reaching climate changes that our grandchildren could face."

JBEI is using some of the best minds in the energy business to help resolve the situation that we are in. Links to the partner research facilities is available at the web site <http://www.jbei.org/>

The scientific thrust areas are:

Feedstock production

JBEI's feedstock goals include discovering how to modify cell wall composition for optimal fuel production. This requires developing new tools and models to advance our fundamental understanding of biomass as an energy source. JBEI will also develop methods to improve energy crop productivity and

sustainability. Efforts in these areas will further the DOE's bioenergy goals of maximizing the total amount of biomass produced per acre per year, maintaining sustainability while minimizing inputs, and maximizing the amount of fuel that can be produced per unit of biomass.

Deconstruction

Deconstruction focuses on developing the science and technology needed to break down lignocellulosic material into usable sugar monomers. This JBEI thrust aims to discover and engineer more efficient cellulases, hemicellulases, and lignases for greater performance and stability in production environments. JBEI will also develop improved pretreatment approaches and discover novel microbes capable of pretreatment and/or hydrolysis of lignocellulosic material.

Fuels synthesis

This step in the biomass-to-biofuels process involves turning processed biomass into ethanol and other fuels for transportation. This thrust area of JBEI will engineer a minimal set of microorganisms to convert the monomer products of deconstruction into fuels and other desirable products. Special effort

will be devoted to integrating monomer utilization and biofuels synthesis in a single pathway or organism."

In a March 5, 2008 presentation at the 59th PITTCON analytical chemistry conference, JBEI vice president for technology, Paul Adams, discussed some of the many challenges. As he noted, Plants have evolved to be resistant to physical and chemical attacks. Plant Lignocellulose is extensively cross-linked and a major challenge is to find the right enzyme mix to break the plant fibers down into a form that can be converted to simple sugars (glucose) that in turn can be fermented into ethanol for fuel use or blending.

Adams stated that Biomass used for fuel feedstock sources should derive from crops that require minimal water and fertilizer. And while the current fuel from plants is predominantly ethanol, we need to think beyond ethanol and consider other possible, more efficient, fuels, like hydrogen.

JBEI will have focused research groups and will look at leveraging the power of DOE's Genomics project to "deconstruct" plants and look for better ways to

unlock that solar power photosynthetically stored in the plant.

Much more detail on the challenges ahead is available with DOE's white paper on BioEnergy <http://genomicsgtl.energy.gov/centers/smGTLBRC/Whitepaper.pdf>

The author acknowledges the review and assistance of JBEI's Dr. Adams in the preparation of the draft article.

References: 1. Website information for the Joint BioEnergy Institute (JBEI) (<http://www.jbei.org/>) 2. Presentation by Dr. Paul Adams on the JBEI at the 59th PITTCON conference on analytical chemistry, New Orleans, March 5, 2008.

DOT News

PHMSA Allows Certain Fuel Cell Cartridges on Passenger Aircraft

By Abdul H. Khalid,
Chemical Engineer, HTIS

On April 30, 2008, the U.S. Department of Transportation's (DOT), Pipeline and Hazardous Materials Safety Administration (PHMSA)

issued a final rule amending the Hazardous Materials Regulations (HMR) thereby permitting certain fuel cell cartridges and fuel cell systems designed for portable electronic devices to be transported by passengers and crew in carry-on baggage on board passenger-carrying aircrafts. According to PHMSA, fuel cell cartridges and fuel cell systems are an emerging energy technology developed to provide a more efficient, longer-lasting, and renewable power source for electrically operated equipment. The full text of this document is available online at:

<http://edocket.access.gpo.gov/2008/E8-9203.htm>.

This final rule covers regulations for transporting fuel cells containing certain hazardous materials such as flammable liquids, including methanol, formic acid, certain borohydride materials, or butane meeting certain performance and consumer use standards for safe transport in the cabin of a passenger-carrying aircraft. PHMSA issues this final rule in cooperation with the Federal Aviation Administration (FAA).

This final rule becomes effective on **October 1, 2008** while a voluntary compliance date is authorized as of May 30, 2008.

For more information on this rule, the point of contact (POC) is Eileen Edmonson, Office of Hazardous Materials Standards, phone: 202-366-8553, PHMSA, 1200 New Jersey Avenue, SE, Washington, DC 20590, fax at: 202-366-7435, or by e-mail at: Eileen.Edmonson@dot.gov

Reference: Federal Register, April 30, 2008, Vol. 73, No. 84, pages-23362-23367; (49 CFR Parts 171, 173, 175).

EPA News

EPA's Final Risk Mitigation Decision for Ten Rodenticides

By Muhammad Hanif,
Chemist, HTIS

After fully assessing human health and ecological effects, as well as benefits, the U.S. Environmental Protection Agency (EPA) announced measures to reduce risks associated with the ten rodenticides below:

Brodifacoum

Bromadiolone
 Bromethalin
 Chlorophacinone
 Cholecalciferol
 Difenacoum
 Difethialone
 Diphacinone
 Warfarin
 Zinc phosphide

New safety measures announced on May 29, 2008, by the EPA will protect children from accidental exposure to rodent-control products. These measures will also reduce the risk of accidental poisonings of pets and wildlife. With the Agency's risk mitigation measures in place, rodenticide products will be safe, effective, and affordable for all consumers. The EPA is requiring that ten rodenticides used in bait products marketed to consumers be enclosed in bait stations, making the pesticide inaccessible to children and pets, and is also prohibiting the sale of loose bait, such as pellets, for use in homes.

According to the EPA's Assistant Administrator, "the new restrictions will better protect our children, pets and wildlife from thousands of accidental exposures that occur every year. These practical and low cost measures provide protection while ensuring rodent control products will continue to be

effective and affordable for all consumers."

Rodenticides are important products for controlling mice, rats and other rodents that pose threats to public health, critical habitats, native plants and animals, crops, and food supplies. However, these products also present human and environmental safety concerns.

Although, rodenticides are an important tool for public health to control mice and rats around the home, the use of these products has been associated with accidental exposures to thousands of children each year. Fortunately, only a small number of exposed children experience medical symptoms or suffer adverse health effects as a result of their exposure. The Agency believes, however, that the number of exposure incidents is unacceptably high. Further, data indicate that children in low income families are disproportionately more exposed to rodenticides. The EPA's risk mitigation measures address this situation by significantly reducing the likelihood of rodenticide exposure to children, including those children who may be more at risk for exposure.

Rodenticides also pose significant risks to non-

target wildlife including birds, such as hawks and owls, and mammals, including raccoons, squirrels, skunks, deer, coyotes, foxes, mountain lions, and bobcats. Rodenticides applied as bait products pose risks to wildlife from primary exposure (direct consumption of rodenticide bait) and secondary exposure (predators or scavengers consuming prey with rodenticides present in body tissues). Per the EPA's assessment report, several reported incidents have involved Federally listed threatened and endangered species, for example the San Joaquin kit fox and Northern spotted owl, in addition to the Bald eagle, which is protected under the Bald and Golden Eagle Act.

The ten rodenticide active ingredients covered by the EPA's Risk Mitigation Decision can be divided into three categories:

- First-generation anticoagulants: warfarin, chlorophacinone, and diphacinone - The anticoagulants interfere with blood clotting, and death can result from excessive bleeding. Warfarin causes organ damage by

- inhibiting blood coagulation. Absorption by the lungs may result in hemorrhagic effects.
- Second-generation anticoagulants: brodifacoum, bromadiolone, difenacoum, and difethialone - The second-generation anticoagulants are especially hazardous for several reasons. They are highly toxic, and they persist a long time in body tissues. The second-generation anticoagulants are designed to be toxic in a single feeding, but since time-to-death is several days, rodents can feed multiple times before death, leading to carcasses containing residues that may be many times the lethal dose. Predators or scavengers that feed on those poisoned rodents may consume enough rodenticide to cause harm to themselves.

- Non-anticoagulants: bromethalin, cholecalciferol and zinc phosphide - The non-anticoagulants are hazardous for their specific affects: Bromethalin is a nerve toxicant that causes respiratory distress. Cholecalciferol is vitamin D3, which in small dosages is needed for good health in most mammals, but in massive doses is toxic, especially to rodents. Zinc phosphide causes liberation of toxic phosphine gas in the stomach.

The EPA's decision reduces rodenticide exposures to children and wildlife, while still allowing residential users, livestock producers, and professional applicators access to a variety of effective and affordable rodent control products. Rodenticide products containing brodifacoum, bromadiolone, difethialone and difenacoum are known to pose the greatest risk to wildlife and will no longer be allowed to be sold or distributed in the consumer market. Bait stations will be required for all outdoor, above-ground uses for products

containing these ingredients. The EPA believes that these steps will significantly reduce the amount of product in the environment, providing additional protection for wildlife from poisonings by these more toxic and persistent products.

The EPA is requiring that companies manufacturing these products respond to the EPA within 90 days regarding their intention to comply with the new requirements. Over the past 10 years, the EPA has used a public process and rigorous scientific information to evaluate and address the risks associated with use of the rodenticides as part of the EPA's mandate to ensure that all pesticides meet current health and safety standards.

For additional information on Rodenticides please visit <http://www.epa.gov/pesticides/reregistration/rodenticides/finalriskdecision.htm> or contact Chemical Review Manager, Kelly Sherman, at Sherman.kelly@epa.gov or (703)305-8401. Hard copy of "Risk Management Decision for Ten Rodenticides" can be downloaded from: <http://www.epa.gov/pesticides/reregistration/rodenticides/finalriskdecision.htm>

[des/rodenticides_mitigation_decision.pdf](#)

References: 1. News Release: "EPA Requires Safety Measures for Rodent-Control Products to Protect Children and Wildlife" by the U.S. Environmental Protection Agency (EPA), Thursday, May 29, 2008. 2. Fact Sheet on EPA's Risk Mitigation Decision for Ten Rodenticides (<http://www.epa.gov/pesticides/reregistration/rodenticides/finalriskdecision.htm>) By the U.S. EPA, May 28, 2008. 3. Risk Mitigation Decision for Ten Rodenticides (PDF Document: http://www.epa.gov/pesticides/reregistration/rodenticides/rodenticides_mitigation_decision.pdf) by the U.S. Environmental Protection Agency (EPA), May 28, 2008.

EPA's New Energy Star Specifications for Boxes that Deliver Television and Video Content

Reprint submitted by
Moraima Lugo-Millán,
HTIS

The EPA announced a new specification for boxes that deliver television and video content, also called

set-top boxes. Effective Jan. 1, 2009, new cable, satellite, and telecom set-top boxes that carry the Energy Star will be at least 30 percent more efficient than conventional models. The new specification is expected to prevent greenhouse gas emissions while allowing consumers to continue to enjoy high-quality content. "With approximately 148 million set-top boxes installed in the United States and 23 million more set-top boxes expected to ship in 2008, the EPA is challenging manufacturers and service providers to deliver boxes that not only offer the newest features, but are also energy-efficient," said Robert Meyers principal deputy assistant administrator for the EPA's Office of Air and Radiation.

After this new specification goes into effect, if all set-top boxes sold in the United States meet the Energy Star requirements, the savings in energy costs will grow to about \$2 billion each year and greenhouse gas emissions will be reduced by the equivalent of greenhouse gas emissions from about 2.5 million vehicles annually.

For the first time, the EPA will also partner with the cable, satellite and telecommunications

companies that deliver content to consumers. As Energy Star partners, these companies agree to improve the energy efficiency of a significant number of set-top boxes by offering newly qualified boxes to subscribers or by upgrading boxes already in homes to help subscribers reduce their carbon footprint and save money. Energy Star was introduced by the EPA in 1992 as a voluntary, market-based partnership to reduce greenhouse gas emissions through energy efficiency. Today, the Energy Star label can be found on more than 50 different kinds of products, new homes as well as schools and commercial buildings. Products that have earned the Energy Star prevent greenhouse gas emissions by meeting strict energy-efficiency specifications set by the government. In 2007 alone, Americans, with the help of Energy Star, saved more than \$16 billion on their utility bills while reducing the greenhouse gas emissions equivalent to those of 27 million vehicles. For more information, visit: <http://www.energystar.gov>

Reference:

<http://yosemite.epa.gov/op/admpress.nsf/bd4379a92ceceac8525735900400c27/9b75a87767c282a08525>

[7435004bbb2!OpenDocument](#)

New EPA Rule Set to Protect Children from Lead Exposure

By Ariel Rosa and Abdul Khalid, HTIS

Builders, painters, electricians and other contractors renovating and or repairing housing, child-care facilities or schools built before 1978 will soon have to take extra safety measures to protect children and pregnant women.

The new "Lead: Renovation, Repair and Painting Program" rule was announced by the US Environmental Protection Agency on March 31, 2008.

After June 23, 2008, persons performing renovations for compensation in pre-1978 housing may use either *Protect Your Family* or *Renovate Right* to comply with the existing requirement to provide a lead hazard information pamphlet to the owners and occupants of target (pre-1978) housing before beginning renovations.

The rule also establishes requirements such as accreditation, certification

and training for paid contractors and maintenance professionals. According to the EPA, unaccredited renovator or dust sampling technician training programs may not advertise or provide training leading to EPA certification to conduct renovations **after June 23, 2008**.

Some other important dates associated with this rule are:

December 22, 2008 - Persons performing renovations for compensation in target (pre-1978) housing or child-occupied facilities **must** provide *Renovate Right* to the owners and occupants before beginning renovations.

April 22, 2009 - Training providers **may** begin applying to EPA for accreditation to provide renovator or dust sampling technician training and persons seeking certification as renovators or dust sampling technicians **may** take accredited training as soon as it is available.

October 22, 2009 - Firms **may** begin applying to EPA for certification to conduct renovations.

Effective April 22, 2010, renovations in target (pre-1978) housing and child-

occupied facilities must be conducted by certified renovation firms, using renovators with accredited training, and following the work practice requirements of the rule.

In addition to child-care facilities and schools the rule covers all rental housing and non-rental homes where children under six and pregnant mothers reside.

The new requirements apply to renovation, repair or painting activities where more than six square feet of lead-based paint is disturbed in a room or where 20 square feet of lead-based paint is disturbed on the exterior.

Trained contractors must post warning signs, restrict occupants from work areas, contain work areas to prevent dust and debris from spreading, conduct a thorough cleanup, and verify that cleanup was effective. Certain work practices (e.g., high heat gun, torch, power sanding, power planing) are prohibited.

Lead was used for many years in paint and was banned for residential use in 1978. Exposure to lead can result in health concerns for both children and adults. Children under six years of age are most at risk because their

developing nervous systems are especially vulnerable to lead's effects and because they are more likely to ingest lead due to their more frequent hand-to-mouth behavior.

According to the EPA almost 38 million homes in the United States contain some lead-based paint, and today's new requirements are key components of a comprehensive effort to eliminate childhood lead poisoning.

To foster adoption of the new measures, the EPA will conduct an extensive education and outreach campaign to promote awareness of and adherence to these new requirements.

For more information, including in Spanish, on the EPA's lead program, or to obtain copies of the rule and information on how to comply, visit:
<http://www.epa.gov/lead>

Reference:
<http://www.epa.gov/lead>

EPA to Provide Monthly Regulatory Updates

Submitted by Eduardo Alvarado, HTIS

Formerly, the public had to wait for Environmental Protection Agency's (EPA) [Semiannual Regulatory Agenda](#) (SRA) which is updated only every 6 months, to learn about new regulatory actions. The EPA is now using Action Initiation Lists (AILs) to notify the public about new regulatory actions. The EPA's AILs are a monthly list of regulations newly approved for development that will appear in the next semiannual regulatory agenda.

The AILs are a snapshot of the rules that the EPA initiates each month. The AILs provide information such as the Regulatory Identifier Number (RIN), regulatory title, stage of action, contact person, abstract and projected publication date on the rules that the EPA has approved for development. Each action appears on only one list. The EPA does not update actions that were listed in previous AILs. Generally, AILs include those actions that will appear in the EPA's upcoming (SRA) and have been approved for commencement by the EPA's Regulatory Policy Officer. In rare instances, an action will not appear on an AIL before it appears in an Agenda. AILs do not post immediately. A given

month's list can be accessed roughly 15 days after the close of the month (e.g., the April 2008 AIL is posted sometime around May 15th).

You can sign up to be notified via email when a new list is added to the EPA AIL docket. To do so: Go to the docket details page for the EPA AIL docket OA-2008-0265 on regulations.gov: <http://www.regulations.gov/dmspublic/component/main?main=DocketDetail&d=EPA-HQ-OA-2008-0265>. Click the "Notification" icon found in the upper, right portion of your screen; and fill out the registration form that is presented to you.

An action may be tracked by its RIN, which appears in both the AILs and the Agendas. A RIN is assigned by the [Regulatory Information Service Center](#), a component of the U.S. General Services Administration, to identify each regulatory action listed in the EPA's SRAs and Annual Regulatory Plans. Also, RINs are included in the headings of the EPA rules when they are published in the Federal Register to make it easier to track EPA actions.

An example of an EPA RIN is 2050-AG37. It is

composed of two parts. The first part (i.e., 2050) identifies which office within EPA is in charge of the action. In this case, it is the Office of Solid Waste and Emergency Response. The second part (e.g., AG37) is an alpha-numeric code automatically generated as rules are assigned a RIN.

EPA Releases its 2008 Report on the Environment

By Tom McCarley,
Chemist, HTIS

On May 20, 2008, the Environmental Protection Agency (EPA) announced the release of its 2008 Report on the Environment (ROE)

The 2008 ROE looks at 23 questions about the state of our environment and seeks to answer those questions with the aid of 86 environmental indicators.

Overall goals of the 2008 ROE are to:

- **Helps EPA and the public assess** the condition of human health and the environment and how it is changing over time.
- **Provides valuable input** to the

EPA's planning and strategic thinking.

- **Creates partnership opportunities** - for monitoring and reporting environmental condition
- **Ask questions** about the environmental trends that are important to the EPA.
- **Answers these questions** to the extent possible, using high quality indicators.
- **Discusses the critical indicator gaps, limitations, and challenges** that prevent the questions from being fully answered.

The entire 366 page report (32MB) can be downloaded by clicking on the report cover icon at <http://www.epa.gov/roe> and then selecting the entire report from a list near the bottom of the referred web page. Individual sections of the report as well as information specific to each EPA region can be accessed as well. A limited number of hard copies may be available by

contacting the EPA's Nation Service Center for Environmental Publications at 800-490-9198 or by e-mail at nscep@bps-lmit.com

Sections of the Report are:

1. Introduction
2. Air
3. Water
4. Land
5. Human Health
6. Ecological Condition
7. Afterward

Appendix A – Acronyms and Glossary
Appendix B – Development of EPA's 2008 ROE
Appendix C – Comparison of Indicators Used in EPA's 2008 ROE and 2003 Draft ROE

References: 1. EPA: 2008 Report on the Environment, EPA/600/R-07/045F, May 2008, <http://www.epa.gov/roe>
2. Federal Register, Vol. 73, No. 98, pp29134-5, May 20, 2008.

NIOSH News**NIOSH Alert on Controlling Excessive Exposures to Lead and Noise for Indoor Firing Ranges**

By Abdul H. Khalid,
Chemical Engineer, HTIS

On April 7, 2008, the National Institute for Occupational Safety and Health (NIOSH) posted a draft document dated November, 2007, entitled, "NIOSH Alert: Preventing Occupational Exposures to Lead and Noise at Indoor Firing Ranges".

It is a useful document that addresses the concerns of Federal, State, and local law enforcement agencies on the occupational exposures of their officers to lead and noise during firearms training and qualifications. This NIOSH document is an advisory in nature and describes useful measures and recommendations to control lead exposure and noise. It is not a legal document and does not have the force of law as that of Occupational Safety and Health Administration (OSHA) rules and regulations.

This alert describes and lists good practices to prevent and control excessive exposure to lead and noise produced by gunfire used by workers or training officers at indoor fire ranges. The sound produced by gunfire becomes louder in smaller indoor spaces due to acoustical energy. The noise level is usually higher than experienced in outdoor ranges. The document is available online at:

<http://www.cdc.gov/niosh/review/public/128/pdfs/DRAFTalertFiringRanges.pdf>

It is a common practice to use hearing protection and the employers provide ear plugs to minimize the health risk to workers and shooters. In this document, NIOSH is more concerned in preventing occupational exposures to lead and noise and recommends double protection using ear plugs and ear muffs.

Workers or officers who are assigned lead cleanup of indoor firing ranges should wear respirators and full protective outer clothing. NIOSH advises employers to take the following steps to protect workers and shooters from exposures to hazardous lead concentrations and noise levels at indoor firing ranges:

- Audiometric testing for their employees.
- Ensuring a well-designed system of supply air and exhaust ventilation installed in the indoor fire ranges.
- Providing health and medical monitoring.
- Designing the range to minimize noise transmission to nearby areas.
- Make sure employees understand safety and health issues associated with lead and noise exposure.
- Provide worker and shooters with appropriate personal protective equipment (PPE) and other protective measures as needed.
- Establish effective engineering and administrative controls when feasible.

For further information or comments on this draft document, send e-mail to: nioshdocket@cdc.gov or fax comments to the

NIOSH Docket Office at 513-533-8285 or write at: NIOSH Mailstop: C-34, Robert A. Taft Lab, 4676 Columbia Parkway, Cincinnati, OH 45225.

Reference: CDC/NIOSH NIOSH Alert, April &, 2008, "Preventing Occupational Exposures to Lead and Noise at Indoor Firing Ranges", NIOSH Docket Number NIOSH-128, web site at: <http://www.cdc.gov/niosh/review/public/128>

Occupational Exposure to Magnetic Fields

By Abdul H. Khalid,
Chemical Engineer, HTIS

Recently, the National Institute for Occupational Safety and Health (NIOSH) launched a web site entitled, "Job-exposure Matrix (JEM) for Power-frequency Magnetic Fields". This web site associates exposure data with diseases due to power-frequency magnetic fields (MF).

NIOSH joined and collaborated with the researchers at the University of Washington to study and assess occupational exposure to magnetic field from electric power. Exposure to magnetic field has been

identified as a possible carcinogen to human. DOD interested personnel can visit NIOSH web site at: <http://www.cdc.gov/niosh/topics/emf/jem-powerfreq/jempowerfreq.html>

"A population-based job exposure matrix (JEM) was developed to assess personal exposures to power-frequency magnetic fields (MF) for epidemiologic studies. The JEM compiled 2317 MF measurements taken on or near workers by 10 studies in the United States, Sweden, New Zealand, Finland, and Italy. A database was assembled from the original data for six studies plus summary statistics grouped by occupation from four other published studies. The job descriptions were coded into the 1980 Standard Occupational Classification system (SOC) and then translated to the 1980 job categories of the U.S. Bureau of the Census (BOC). For each job category, the JEM database calculated the arithmetic mean, standard deviation, geometric mean, and geometric standard deviation of the workday-average MF magnitude from the combined data. Analysis of variance demonstrated that the combining of MF data from the different sources was justified, and that the homogeneity of MF

exposures in the SOC occupations was comparable to JEMs for solvents and particulates. BOC occupation accounted for 30% of the MF variance ($p \ll 10^{-6}$), and the contrast (ratio of the between-job variance to the total of within- and between-job variances) was 88%. Jobs lacking data had their exposures inferred from measurements on similar occupations. The JEM provided MF exposures for 97% of the person-months in a population-based case-control study and 95% of the jobs on death certificates in a registry study covering 22 states. Therefore, we expect this JEM to be useful in other population-based epidemiologic studies."

Reference: "Job-exposure Matrix (JEM) for Power-frequency Magnetic Fields, NIOSH web site at: <http://www.cdc.gov/niosh/topics/emf/jem-powerfreq/jempowerfreq.html>



**This bulletin is printed
on recycled paper**



**Defense Supply Center Richmond
DSCR-VBC
8000 Jefferson Davis Highway
Richmond, Virginia 23297-5609**

**PRE-SORTED STANDARD
U.S. POSTAGE PAID
MECHANICSBURG, PA
PERMIT NO. 15**

The HTIS Bulletin is produced bimonthly.
Correspondence should be addressed to Defense Supply Center Richmond,
DSCR-VBC, 8000 Jefferson Davis Highway, Richmond, VA 23297.5609 or call DSN 695.5168, Commercial
804.279.5168, or Toll Free 800.848.HTIS. Our Fax is 804.279.4194. We can also be reached by e-mail at
htis@dscr.dla.mil or on the Internet at <http://www.dscr.dla.mil/ExternalWeb/UserWeb/aviationengineering/HTIS/>

Commander, Defense Supply Center Richmond
Brig Gen Andrew Busch, USAF

Director, Aviation Engineering
Karron Small

Chief, Hazardous Information Programs Division
A. J. Kendrick

Chief, Hazardous Technical Information Services Branch
Fred J. Tramontin, Ph.D.

HTIS Bulletin Technical Advisor
Fred J. Tramontin, Ph.D.

Editor, HTIS Bulletin
Leonard S. Lambert

If you are presently on our mailing list and wish to make a change, please include your current
mailing address along with your change of address in your notice to us.
No special permission is required to quote or reproduce articles written by the HTIS Staff. However,
proper credit would be appreciated.