



HTIS

azardous Technical Information Services

BULLETIN

Vol. 20, No. 2

March – April 2010

Environmental-Preferred Alternatives to MIL-PRF-680 / P-D-680 Cleaner

By Hem L. Tripathi, Chemical Engineer, Hazardous Minimization & Green Products, DSCR

Three products are now available that meet the requirements of MIL-PRF-32295 (Cleaner, Non-Aqueous, Low-VOC, HAP-Free). These field tested products are on a Qualified Products List (QPL), and can be used to clean weapon systems across DoD maintenance facilities as alternatives to MIL-PRF-680. Furthermore, they are less hazardous, safer to use and environmentally compliant.

Three National Stock Numbers (6850-01-576-2676 (1GL), 6850-01-576-2765 (5 GL CO) and 6850-01-576-2736 (55 GL DR) are assigned and authorized for use against the Type I requirements of MIL-PRF-32295.

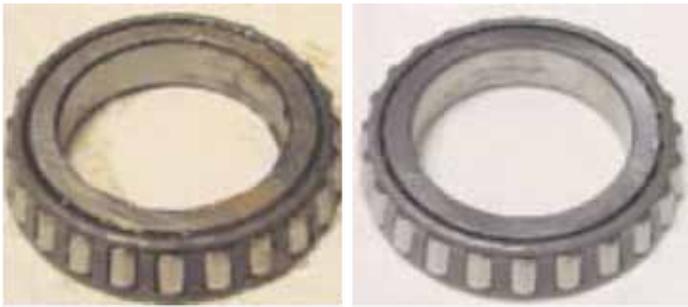
In August 2007, the Defense Supply Center Richmond (DSCR) initiated a program to find chemical alternatives for the MIL-PRF-680/P-D-680 specifications. These specifications contain volatile organic compounds (VOCs) that affect human health and impact the environment. VOCs are organic chemical compounds that have sufficiently high vapor pressures under normal conditions to significantly vaporize, thereby entering the atmosphere. They are released during cleaning operations and contribute to the formation of ground-level ozone (photochemical smog), damage vegetation, and potentially harm the lungs, liver and kidneys. The United States Environmental Protection Agency (EPA) regulates VOCs in the air, water, and the land.

MIL-PRF-680 and P-D-680 establish the requirements for the hydrocarbon-based solvents used for degreasing and cleaning machine parts of aircraft as well as the support equipment for maintenance. There is no commercial specification available to cover these military applications.

The qualified products for MIL-PRF-680 and P-D-680 have VOC content of more than 750 grams per liter, well above the currently regulated level in certain states. Solvent emissions are regulated locally as well as regionally, and the air pollution control districts in California have the most stringent requirements. Several years ago, the San Joaquin Valley Air Pollution Control District (SJVAPCD) imposed restrictions limiting the VOC content in solvents to no greater than 25 grams per liter for immersion cleaning processes (unless the solvent is used in an airtight cleaning system).

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Before Cyclo 147F solvent. After Cyclo 147F solvent.



Before MIL-PRF-680 solvent. After MIL-PRF-680 solvent.

Under this new rule, MIL-PRF-680 could no longer be allowed in solvent degreasing operations in the SJVAPCD. Since MIL-PRF-680 and P-D-680 were the only materials authorized by the applicable maintenance manuals to clean engine parts, an approved alternative was necessary to meet the new environmental regulations.

To identify solvent(s) that were less hazardous, safer to use, and environmentally compliant, DSCR's Hazardous Material Minimization Program branch initiated a collaborative program with the Naval Air Systems Command (NAVAIR), Materials Engineering Division at Patuxent River, MD. The program effort was divided into three major elements:

1. Development of the specification;
2. Laboratory testing of potential alternatives on cleaning performance as well as material compatibility; and,
3. Field testing of alternatives with authentic parts.

NAVAIR developed a new specification, MIL-PRF-32295, titled, "Cleaner, Non-Aqueous, Low-VOC, HAP-Free," and published it on November 5, 2008, for cleaning aircraft components, ground support equipment, and other general applications. Since the Aerospace National Emission Standards for Hazardous Air Pollutants (NESHAP) states that immersion-cleaning solvents and wipe-cleaning solvents must have vapor pressures less than 7 mm Hg and 45 mm Hg respectively, these limits were used to distinguish between Type I and Type II products. The cleaning effectiveness of the tested candidates led to further describing Type I products as being suitable for cleaning light soils such as oils and hydraulic fluids, and Type II products as being suitable for cleaning heavy soils such as greases and carbon residues. The new specification required

that the solvent(s) be free of hazardous air pollutants (HAP), effective on grease and oil, non-toxic, compatible with metals and non-metals, and safe to use. It also could not contain more than 25 grams per liter of VOCs, and also be free of ozone depleting substances.

After a thorough evaluation of numerous commercially available products, NavAir's Materials Engineering Division selected five products for laboratory testing by its Industrial and Operational Chemicals, Material Engineering Laboratories. These cleaners then were tested for cleaning efficiency, material compatibility, corrosion, hydrogen-embrittlement, and the other tests as required by the specification. Of the five selected, three products (QSOL 300, Cyclo-147F, and SB32) met the Type 1 requirements of MIL-PRF-32295. These products have vapor pressures as low as 1 mmHg, zero VOC contents; and meet the most stringent environmental regulatory requirements. Research is in progress to find products that meet the specification's Type II.

Field testing the cleaners involved determining the cleaning performance of the three candidates at various military sites (Navy, Air Force, US Marine Corps, and US Coast Guard) on authentic dirty parts associated with different weapon systems. Each cleaning solvent was tested side-by-side against the current MIL-PRF-680 Type II solvent for the duration of the test (that involved cleaning identical parts). Based on the specific cleaning application, the candidates were utilized in various cleaning techniques, brush, immersion, and wipe-cleaning. Photographs of the parts were taken before and after cleaning to compare the effectiveness of the tested cleaners to the control. Listed below are the cleaners that provided successful results with positive feedback.

Product	Manufacturers
QSOL 300	Safety-Kleen, Baltimore, MD 21230
Cyclo-147F	Clearco Products Co., Inc. Bensalem, PA 19020
SB32 Fluid	Momentive, Friendly, WV 26146

For additional information on these studies, contact:

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- **Dr. El Sayed Arafat**
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Naval Air Systems Command (NAVAIR)
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Minimizing the Use of Hexavalent Chromium (Cr) in the DoD

By Fred Tramontin, Chemical Engineer and Branch Manager, HTIS

On April 8, 2009, the Office of the Under Secretary of Defense (Acquisition, Technology and Logistics) issued a Memorandum for the Secretaries of the Military Departments on "Minimizing the Use of Hexavalent Chromium (Cr6+). The following are among the directive actions:

- Invest in appropriate research and development on substitutes.
- Approve the use of alternatives where they can perform adequately for the intended application and operating environment.
- Update all relevant technical documents and specifications to authorize use of the *qualified* alternatives and, therefore, minimize the use of materials containing Cr6+.
- Document the system-specific Cr risks and efforts to qualify less toxic alternatives in the Programmatic Environment, Safety, and Occupational Health Evaluation for the system. Analyses should include any cost/schedule risks and life cycle cost comparisons among alternatives. Life cycle comparisons should address material handling and disposal costs and system overhaul cycle times/costs due to any differences in corrosion protection.
- Share knowledge derived from research, development, testing and evaluations (RDT&E) and actual experiences with qualified alternatives.
- For such applications where acceptable alternative to Cr6+ do not exist, CR6+ may be used.

This policy applies to all new programs starts, new programs increments, and procurement of infrastructure materials, goods, and services. Application of this policy to legacy systems will be limited to modifications where alternatives can be inserted in the system modification process end process and updated procedures.

As DoD's supply chain integrator, the Defense Logistics Agency will assist the Services in their efforts to eliminate Cr6+ from common hardware and DLA-managed items

The Under Secretary of Defense (OUSD) also asked the Military Departments to provide a report in the 2nd quarter of 2010 that describes the implementation actions taken to minimize Cr6+.

Reference: April 8, 2009 MEMORANDUM from the Under Secretary of Defense (AT&L).

Seeking Assistance on Low Level Radioactive Materials / Wastes

By Abdul H. Khalid, Chemical Engineer HTIS

The DoD and Military Services use a variety of manufactured items of supply (commodities) incorporating in whole or in part sealed and unsealed radioactive material. A sealed radioactive source is any radioactive material that is permanently bound, fixed or encapsulated in a module or matrix designed to prevent the inadvertent release or dispersal of such material under the most severe conditions encountered in its normal use.

Some specific examples of commodities include instrument calibration sources, compasses, exit signs, weapons, artillery, tanks, vehicles, certain electron tubes, spark gaps, depleted uranium counterweights and munitions, and magnesium-thorium aircraft and vehicle components.

Stocked items containing radioactive material that have become unserviceable by reason of age, damage, contamination, or leakage and serviceable items that have been determined by the owning Service/Agency or item manager(s) to be in excess of projected demands, or to be obsolete or superseded are to be considered "waste." The Defense Reutilization and Marketing Service (DRMS) does not have a radioactive materials mission. However, the Defense Reutilization and Marketing Services (DRMOs) will provide Reutilization and Transfer services and contract administration in assisting the owning Service/Agency in the redistribution and reuse by other Services/Agencies of some usable/serviceable radioactive property declared to be excess, obsolete or superseded. However, all DRMOs are prohibited from accepting physical custody of "any item" containing radioactive material. For the purpose of reutilization, DRMOs may accept "accountability of records", for license exempt commodities only on a "wash-post basis", but not physical custody.

DLA has an Inter Service Agreement (ISSA) with the US Army Joint Munitions Command, DoD's Executive Agent for Low Level Radioactive Waste, for the disposal of items of supply containing radioactive material. To ensure compliance for disposal, all DLA activities and applicable DoD components should retain a copy of DoD Regulation 4715.6-R, Low Level Radioactive Waste Disposal Program.

Hazardous Technical Information Services (HTIS) receives numerous technical inquiries on low level radioactive (LLR) materials/wastes requesting information for accepting and /or proper disposing of items such as electron tubes, watches, and articles having very low radioactivity levels.

Generally, LLR materials/wastes are wastes without the presence of isotopes such as U-233, U235, plutonium, spent nuclear fuel, transuranic waste (isotopes with an atomic number greater than uranium that emit alpha particles), and by-product material (mill trailings).

Revisions to OECD Imports and Exports Rule

By Muhammad Hanif and Ariel Rosa, HTIS

On December 28, 2009, the U.S. Environmental Protection Agency announced that it is strengthening the regulations that govern the shipping of hazardous waste for recycling between the United States and other countries. The new measures are meant to increase the level of regulatory oversight, provide stricter controls, and greater transparency. The final rule aligns the EPA's hazardous waste import/export/transit shipment regulations with the procedures of the Organization for Economic Cooperation and Development (OECD), an international consortium that comprises 30 countries including the United States.

The EPA's new measures bolster regulations regarding hazardous waste shipments into or out of the United States and strengthen the extensive set of regulations under the Resource Conservation and Recovery Act (RCRA) which governs the shipment of hazardous waste within the United States.

This rule specifically revises:

- Existing RCRA regulation regarding the transboundary movement of hazardous wastes for recovery among countries belonging to the OECD to conform to the following legally required revisions made by the OECD:
 - ✓ Requiring U.S. recovery facilities to submit a certificate after recovery of the waste has been completed,
 - ✓ Adding provisions to ensure that hazardous wastes are returned to the country of export in a more timely and documented manner when it is necessary to do so, and
 - ✓ Adding new procedures for imported hazardous wastes that are initially managed at U.S. accumulation and transfer facilities to better track and document that subsequent recovery by a separate recycling facility is completed in an environmentally sound manner.
- RCRA regulations for spent lead-acid batteries (SLAB) to add export notification and consent requirements to provide stricter controls and greater transparency for exports of SLABs to any country, and should ensure that the batteries are sent to countries and reclamation facilities in those countries that can manage the SLABs in an environmentally sound manner.
- Hazardous waste import-related requirements for U.S. hazardous waste management facilities to confirm individual import shipments comply with the terms of EPA's consent.
 - The address to which export exception reports are to be sent.

Those activities wishing to dispose of LLR materials/wastes must coordinate their actions with their installation/Command Radiation Protection Officer (RPO). Any material offered to DRMO, that is properly identified in SALD, FLIS, FEDLOG, Services Automated Data Systems or any additional automated data systems as containing radioactive material will require the generator to have a radiological survey performed by a qualified expert (e.g., Radiation Protection Officer, Health Physicist, etc.) to verify the presence or absence of radioactive material. The generator will document the results of the radiological survey, to include the signature of the individual performing the survey, on the DD Form 1348 stating that the material is "free of [any] radioactive material".

For guidance and assistance on properly accepting any item or material containing LLR materials/wastes and disposal procedures, DoD personnel should use the following points of contacts (POCs):

- **DLA/DDC**
Mr. Michael Coogen, HQ DLA
eMail: Michael.Coogen@dla.mil
PH: 703.767.6231 (DSN 427).

Mr David Collins, HQ DDC
eMail: David.M.Collins@dla.mil
PH: 717.770.5623 (DSN 771)
- **Army / Joint Munitions Command (JMSJM-SF)**
Mr. Kelly Crooks
eMail: Kelly.Crooks@us.army.mil
PH: 309.782.0338 (DSN 793)
- **Air Force**
Mr. Brian Harcek
eMail: Brian.Harcek@wpafb.af.mil
PH: 314.260.3933 (DSN 787)
- **Navy**
LCDR Allen Stambaugh
eMail: Allen.stambaugh@navy.mil
PH: 757.887.4692 (DSN 953)
- **COE**
Mr. Brian Hearty
eMail: Brian.P.Hearty@nwd02.usace.army.mil
PH: 402.697.2478.

References:

1. https://headquarters.dla.mil/DLA_Customer/Operations/Publications.aspx
2. <http://www.dla.mil>
(DLA PORTAL: Customer Handbook - MIL ONLY).

The United States participates in a number of bilateral waste agreements between countries and in the multilateral waste agreement controlling the shipment of hazardous waste for recovery between OECD member countries.

Reference:

<http://www.epa.gov/epawaste/hazard/international/oecd-slab-rule.htm>

Côte d'Ivoire Dumping Incident Highlights Need to Properly Manage Toxic Waste

By Philip Saunders, Chemical Engineer, HTIS

In September 2009, the multinational oil and commodity shipping company Trafigura Beheer BV agreed to pay \$48 million dollars to victims of a 2006 incident in which toxic waste was improperly dumped in and around poor areas of Abidjan, Côte d'Ivoire. This settlement came on top of an agreement in which Trafigura agreed to pay the Ivorian government \$198 million to clean up the waste.

The 2006 dumping incident occurred following a sequence of events that began at the port of Amsterdam when a cargo ship chartered by Trafigura attempted to dispose of the contents of the ship's slop tanks. The Trafigura claimed that the waste in the slop tank was the result of onboard caustic washing of gasoline to reduce the mercaptan content of the fuel and was a mixture of water, fuel and caustic sodium hydroxide. The ship transferred some of the contents of the slop tank to another ship operated by a contractor who had agreed to process and dispose of the waste. After employees detected the odor of sulfur compounds such as sulfur dioxide and mercaptans, the contractor determined that the waste was more toxic than they were initially led to believe and increased their treatment and disposal price from 20 Euros to 900 Euros per cubic meter. Trafigura rejected the new quote and had the waste reloaded onto their ship. The ship left the Port of Amsterdam (without obtaining the necessary export licenses) intending to find a less expensive treatment and disposal option.

A month and a half later, the ship arrived at the port in Abidjan, Côte d'Ivoire. Through a local shipping agent, Trafigura arranged for the unloading and treatment of the slop waste with a local contractor who quoted a disposal cost of 30-35 Euros per cubic meter for the job. This contractor, a newly created company, took custody of more than 500 metric tons of waste, loaded the waste onto rented trucks and dumped the material at various sites around the city. According to the UN and the Ivorian government, the gases emitted by the waste were responsible for at least 15 deaths and 30,000 injured, and caused nearly 100,000 people to seek medical attention.

The incident prompted a lawsuit by 30,000 Ivorians against Trafigura, mass resignations by Ivorian government officials, as

A New Look & Feel — The Same Informative Publication

Dear Reader,

As you will note, we have reformatted the Bulletin to enhance both its appearance and readability. With respect to content, we will continue to provide you with articles / information that will assist you in executing your mission / responsibilities; and making these articles more DoD focused.

— Fred Tramontin
Chief, Hazardous Technical Information Services

well as the arrest of two Trafigura executives who investigated the dumping incident. The executives were eventually released after Trafigura paid the Ivorian government for the cleanup of the waste. In addition, the Ivorian head of the agency responsible for dumping the waste was sentenced to 20 years in prison. Furthermore, there is an ongoing criminal prosecution by the Dutch authorities in which Trafigura and others are charged with the illegal importation/exportation of a toxic waste as well as the falsification of the cargo ship's hazardous materials documentation.

The illegal exportation charge likely stems from the European Union's adoption of the Ban Amendments to the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal. The Ban Amendments prohibit the export of hazardous waste to lesser developed countries. The United States is a signatory country of the Basel Convention treaty, but it has not yet been ratified by Congress.

Even though the incident described took place in foreign countries and involved no United States citizens or US-based entities, it highlights the need to properly manage toxic waste and ensure that the transportation, storage and disposal facility chosen to handle that toxic waste is licensed, capable and responsible. Under the 'Cradle-to-Grave' liability requirements of the Resource Conservation and Recovery Act (RCRA) and Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), the generator of a hazardous waste is financially liable for any cleanup or healthcare costs due to the mismanagement of that waste even after the generator has transferred custody of the waste to a disposal facility. Use this incident as an object lesson and do not let something similar happen to your organization.

References:

1. BBC News, "Firm Agrees Ivorian Waste Payouts", September 20, 2009. <http://news.bbc.co.uk/2/hi/africa/8265193.stm>;
2. Reuters, "Trafigura to pay \$198 mil settlement to Ivory Coast", February 13, 2007. <http://www.alertnet.org/thenews/newsdesk/L13338152.htm>;
3. BBC News, "Ivorian Cabinet Quits Over Waste", September 7, 2006. <http://news.bbc.co.uk/2/hi/africa/5321272.stm>.
4. Okechukwu Ibeanu, UN Report "Report of the Special Rapporteur on the adverse effects of the movement and dumping of toxic and dangerous products and wastes on the enjoyment of human rights", September 3, 2009. <http://www2.ohchr.org/english/bodies/.../12session/A-HRC-12-26-Add2.pdf>; AND,
5. International Centre for Trade and Sustainable Development (ICTSD), "Abidjan Waste Dump Reveals Many Loopholes", September 2006. <http://ictsd.net/i/news/bridges/11704/>

Caulk in Older Buildings Contains PCBs

By Ariel Rosa, Environmental Protection Specialist, HTIS

Caulk is a flexible material used to seal gaps to make windows, door frames, masonry and joints in buildings and other structures watertight or airtight. At one time, caulk was manufactured to contain polychlorinated biphenyls (PCBs) because PCBs provided flexibility.

Prior to 1978 PCBs were widely used in construction materials and electrical products. PCBs are man-made chemicals that persist in the environment and can affect the immune, reproductive, nervous and endocrine systems and are potentially cancer-causing as they build up in the body over long periods of time.

Although Congress banned the manufacture and most uses of PCBs in 1976, high levels of PCBs are still present in many buildings including schools, and facilities constructed between the 1950s and the 1970s. It was not until recent years, that the EPA learned that caulk containing PCBs was being used in buildings during that period, prior to its phase out.

On September 25, 2009, the EPA announced a series of steps that building owners and school administrators should take to reduce exposure to PCBs that may be found in caulk in many buildings constructed or renovated during the period that PCBs were used. The agency is also conducting new research to better understand the risks posed by caulk containing PCBs. This research will guide the EPA in making further recommendations on long-term measures to minimize exposure as well as steps to prioritize and carry out actions to remove the caulk to better protect public health.

"We're concerned about the potential risks associated with exposure to these PCBs and we're recommending practical, common sense steps to reduce this exposure as we improve

our understanding of the science," said EPA Administrator Lisa P. Jackson. For building owners and administrators who want to take added and more aggressive immediate steps, EPA is providing additional guidance to help them identify the extent of potential risks and determine whether mitigation steps are necessary. Local communities and governments have constrained resources that make this a particularly challenging and sensitive situation."

Although this is a serious issue, the potential presence of PCBs in buildings should not be a cause for alarm. If buildings were erected or renovated between 1950 and 1978, the EPA recommends that owners implement steps to minimize exposure to potentially contaminated caulk in the following ways:

- Approve the use of alternatives where they can perform
- Cleaning air ducts
- Improving ventilation by opening windows and using or installing exhaust fans where possible
- Cleaning frequently to reduce dust and residue inside buildings
- Using a wet or damp cloth or mop to clean surfaces
- Not sweeping with dry brooms and minimizing the use of dusters in areas near potential PCB-containing caulk
- Using vacuums with high efficiency particulate air filters
- Washing hands with soap and water often, particularly before eating and drinking
- Washing children's toys often

The EPA also recommends testing peeling, brittle, cracking or deteriorating caulk directly for the presence of PCBs and removing the caulk if PCBs are present at the EPA's suggested levels. Alternately, the building owner can assume that PCBs are present and proceed directly to remove deteriorating caulk.

Building owners and facility managers should also consider testing to determine if PCB levels in the air exceed EPA's suggested public health levels. If testing reveals PCBs in the air above these levels, building owners should be especially vigilant in implementing and monitoring ventilation and hygienic practices to minimize exposures. Owners and managers are encouraged to retest PCB levels in the air to determine whether these practices are reducing the potential for PCB exposures. Should these practices not reduce exposure, caulk and other known sources of PCBs should be removed as soon as practicable.

There are several unresolved scientific issues that must be better understood to assess the magnitude of the problem and identify the best long-term solutions. For example, the link between the concentrations of PCBs in caulk and PCBs in the air or dust is not well understood. The agency is doing research to determine the sources and levels of PCBs in buildings in the U.S. and to evaluate different strategies to reduce exposures. The results of this research will be used to provide further guidance to building owners as they develop and implement long-term solutions.

Where buildings were constructed or renovated between 1950 and 1978, the EPA recommends that PCB-containing caulk be removed during planned renovations and repairs (e.g. when replacing windows, doors, roofs, ventilation, etc.). It is critically important to ensure that PCBs are not released to the air during replacement or repair of caulk in affected buildings. The EPA recommends simple, commonsense work practices to prevent the release of PCBs during these operations.

In general, schools and buildings built after 1978 do not contain PCBs in caulk.

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

City of New York Assessing Risk Posed by PCBs in Caulk Found in Schools

By Ariel Rosa, Environmental Protection Specialist, HTIS

On January 19, 2010, the EPA announced an agreement with the City of New York to address the risks posed by PCBs in caulk found in some city schools. The agreement is intended to produce a city-wide approach to assessing and reducing potential exposures to PCBs in the caulk in schools.

“The work that the City of New York has agreed to do will go a long way toward helping us better understand the potential risks posed by PCBs in caulk, and work to reduce the exposure of school children, teachers and others who work in New York City public schools,” said Judith Enck, EPA Regional Administrator. “New York City’s 1,600 public schools make it the largest school system in the nation, and we believe that the program outlined in this agreement, along with general EPA guidance on managing the issue, will serve as a model for school systems across the country.”

The agreement requires the city to conduct a study in five schools to determine the most effective strategies for assessing and reducing potential exposures to PCBs in caulk. The city will then produce a proposed plan for any cleanups needed in the five schools and use this information to develop a recommended city-wide approach. The EPA is also requiring the city to develop and submit for approval best management practices for reducing exposure to PCBs in caulk in school buildings. These may include cleaning the schools, improving ventilation, and addressing deteriorating caulk.

The agreement complements the EPA’s national efforts by helping building owners and managers facing serious PCB problems develop practical approaches to reduce exposures and prioritize the removal of PCB caulk.

The legally binding agreement settles potential violations of the Toxic Substances Control Act by the city for having caulk that contains PCBs above allowable levels in some schools. As

part of the study of the five yet to be determined schools, the city will sample extensively in them, and will ensure that any PCB waste is properly removed. Once the study is concluded the city will work with the EPA to develop and implement a plan to identify, prioritize, and address the presence of PCBs within the New York City school system. In addition, the agreement calls for the development of a citizens’ participation plan to ensure that school administrators, parents, teachers, students, and members of the public are kept fully informed throughout the process.

References:

1. The agreement <http://www.epa.gov/region2> ; and,
2. PCBs in caulk at <http://www.epa.gov/pcbsincaulk>

Final Rules on 2010 HCFC

By Abdul H. Khalid, Chemical Engineer, HTIS

On December 15, 2009, the U.S. Environmental Protection Agency (EPA) issued two rules in the Federal Register, thereby, restricting the production and use of hydrochlorofluorocarbons (HCFCs) including R-22. **These rules became effective as of January 1, 2010.**

The first rule allocates allowances for the production and import / export of HCFCs. The other rule bans the sale or distribution including import and export of pre-charged air-conditioning and refrigeration products and components containing HCFC-22 or HCFC-142b or blends containing one or both of these substances, beginning January 1, 2010. The full texts of these rules, 2010 HCFC Allocation Rule & Pre-Charged Appliance Rule, are available at:

- <http://edocket.access.gpo.gov/2009/E9-29569.htm> ; and,
- <http://edocket.access.gpo.gov/2009/E9-29560.htm>.

The first rule sets HCFC production and import limits for the period 2010-2014 in order to meet the 2010 phase-down caps under the Montreal Protocol. For details visit the EPA’s website at:

- <http://www.epa.gov/ozone/title6/phaseout/classtwo.html#Caps>

The two rules contain some important terms that affect their applicability.

“Appliance” means any device which contains and uses a refrigerant and which is used for household or commercial purposes, including any air-conditioner, refrigerator, chiller, or freezer. Components such as condensing units, line sets, and thermostatic expansion valves are not considered “appliances.”

“Manufactured prior to January 1, 2010” for an appliance, means the date upon which the appliance’s refrigerant circuit

is complete, the appliance can function, the appliance holds a full refrigerant charge, and the appliance is ready for use for its intended purposes. For a pre-charged appliance component, this means the date that such component is completely produced by the original equipment manufacturer, charged with refrigerant, and is ready for initial sale or distribution in interstate commerce.

“Interstate commerce” means the product’s entire distribution chain up to and including the point of sale to the ultimate consumer. It includes the sale or distribution of imported products within the United States, as well as the sale or distribution of products intended for export.

Starting January 1, 2010, the two rules affect the sale, distribution, and installation of air-conditioning and refrigeration products charged with HCFC-22, HCFC-142b, or blends containing one or both of these substances in the following manner:

Sale and distribution of appliances pre-charged with HCFC-22 or HCFC-142b are allowed for self-contained, factory-charged appliances such as pre-charged window units, packaged terminal air-conditioners (PTACs), and some commercial refrigeration units, if manufactured before January 1, 2010. The pre-charged appliance rule does not prohibit sale and distribution of pre-2010 inventory (i.e., stockpiled inventories).

The sale and distribution of appliances pre-charged with HCFC-22 or HCFC-142b are not allowed for self-contained, factory-charged appliances such as pre-charged window units, packaged terminal air conditioners (PTACs), and some commercial refrigeration units, if manufactured on or after January 1, 2010. This prohibition, which is contained in the pre-charged appliance rule, applies regardless of when the refrigerant was produced and whether it is virgin or reclaimed. Under the allocation rule, neither stockpiled HCFC-22 produced prior to January 1, 2010, nor new HCFC-22 produced after that date can be used to manufacture new appliances on or after January 1, 2010.

Sale and distribution of appliance components pre-charged with HCFC-22 or HCFC-142b are allowed if the components (e.g. condensing units, line sets, and coils that are charged with refrigerant) were manufactured before January 1, 2010. The pre-charged appliance rule does not prohibit sale and distribution of pre-2010 inventory (i.e., stockpiled inventories). Such pre-charged components are allowed to replace components of existing air-conditioning and refrigeration appliances.

For example, an existing R-22 split air-conditioning system (i.e., appliance); undergoing service in 2010 or later, may have individual components of the system replaced with pre-charged R-22 components that were manufactured prior to January 1, 2010.

Pre-charged components manufactured before January 1, 2010, may be used to service appliances manufactured before January 1, 2010, but may not be assembled to create new appliances unless there is no use of virgin HCFC-22 or HCFC-142b, in the components or otherwise. The allocation rule prohibits

use of virgin HCFC-22 and HCFC-142b in manufacturing new appliances.

There is no exemption from the pre-charged appliance rule for the sale or distribution of pre-charged appliances and pre-charged components that are charged with reclaimed HCFC-22 or HCFC-142b refrigerant. In other words, the provisions banning sale and distribution apply equally regardless of whether the appliances or components contain virgin or reclaimed refrigerant.

Under the allocation rule, virgin HCFC-22 and HCFC-142b may only be used to service existing appliances. Virgin HCFC-22 and HCFC-142b may not be used to manufacture new pre-charged appliances or appliance components. Virgin HCFC-22 and HCFC-142b also may not be used to charge new appliances assembled onsite on or after January 1, 2010, though new appliances (not pre-charged) may be charged with reclaimed refrigerant.

The EPA has provided an exception to the allocation rule that allows virgin HCFC-22 to be used in the onsite “manufacture” of appliances for a particular project between January 1, 2010, and December 31, 2011, if the components have been specified for use at that project under a building permit or contract dated before January 1, 2010.

Under the allocation rule, HCFC-22 produced prior to January 1, 2010, may be used until January 1, 2015, for the manufacture of thermostatic expansion valves (TXVs) and medical equipment.

The sale and distribution of used appliances is not affected by either rule.

Point of contact (POC) is the EPA’s Stratospheric Protection Division, Office of Atmospheric Programs, Office of Air and Radiation Washington, DC, Phone: 202-343-9870 or Julius, e-mail at: banks.julius@epa.gov

For technical information, POC is Staci Gatica, phone: 202-343-9469 or e-mail at: gatica.staci@epa.gov.

Defense Reserve of Ozone Depleting Substances

By Fred Tramontin, Chemical Engineer and Branch Manager, HTIS

The Ozone Depleting Substances (ODS) Reserve is DoD’s central manager for the turn-in, storage, reclamation and issuance of mission-critical ODS for all of the military services and the Coast Guard. It was established by the Secretary of Defense in August of 1992 following the United States Government ratification of the Montreal Protocol and passage of the 1990 Amendments to the Clean Air Act.

The Reserve supports US military weapons systems worldwide with certain critical use ozone depleting refrigerants, halons

and solvents that are no longer manufactured, as required by the Montreal Protocol and the Clean Air Act.

The Military Service or Defense Agency are required to turn in to the Reserve the following excess CFCs 11, 12, 114, 500, 502; Halons 1202, 1211, 1301; and HCFC-22. The Reserve accepts both used and new CFCs, Halons, and HCFC-22 in a relatively pure state (i.e. not as a component of other products). These chemicals may have been purchased under the Federal Supply Classes (FSC) 6830 and 4210, or from a commercial source.

Government activities having the above the cited ODS assets should contact the Program office (DSCR.ODSReserve@dla.mil) for further information and guidance as well as review the "Turn-In Procedures" located at: <http://www.dscr.dla.mil/ExternalWeb/UserWeb/aviationengineering/OZONE/index.htm>.

EPA Issues Guidance to Help Federal Facilities Better Manage Stormwater

By Ariel Rosa, Environmental Protection Specialist, HTIS

One of the most exciting new trends in water quality management today is the movement by many cities, counties, states, and private sector developers toward the increased use of this next generation stormwater management practices to help protect and restore water quality.

The Environmental Protection Agency (EPA) has issued guidance to help Federal agencies minimize the impact of federal development projects on nearby water bodies. The guidance is being issued in response to a change in law and an Executive Order signed by President Obama, which calls upon all federal agencies to lead by example to address a wide range of environmental issues, including stormwater runoff.

"EPA is proud to issue this new guidance to help federal facilities reduce stormwater pollution," said Peter S. Silva, assistant administrator for EPA's Office of Water. "By taking these steps to create more sustainable facilities, federal agencies can lead by example in reducing impacts in the local watershed."

The EPA worked closely with other Federal agencies to develop this document, which provides background information, key definitions, case studies and guidance on meeting the new requirements of the Energy Independence and Security Act of 2007.

Under the new requirements, Federal agencies must minimize stormwater runoff from federal development projects to protect water resources. Federal agencies can comply using a variety of stormwater management practices often referred to as "green infrastructure" or "low impact development" practices, including reducing impervious surfaces, using vegetative practices, using porous pavements and installing green roofs.

The EPA is using sustainable techniques for reducing the effects

of stormwater runoff, such as installing a 3,000 square foot green roof as well as using rain gardens and cisterns to capture and reuse stormwater at its facilities.

Stormwater runoff in urban and suburban areas is one of the leading sources of water pollution in the United States. Runoff can cause increased flooding and erosion and more pollution to surface waters.

Reference: <http://www.epa.gov/owow/nps/lid/section438/>

Occupational Safety & Health News

New OSHA Booklet Outlines Hexavalent Chromium Standards

By Ariel Rosa, Environmental Protection Specialist, HTIS

The Occupational Safety and Health Administration recently published Hexavalent Chromium, a booklet outlining industry requirements for hexavalent chromium standards that give readers an overview of the provisions and requirements of the Hexavalent Chromium standards for general industry (29 CFR 1910.1026), shipyards (29 CFR 1915.1026), and construction (29 CFR 1926.1126).

Hexavalent chromium is used in pigments, metal finishing, wood preservatives and fungicides.

Workers may be exposed to hexavalent chromium fumes generated during welding of chromium metal alloys. Those exposed to this toxic chemical can develop lung cancer and damage to the nose, throat and respiratory system. Inhaling the chemical's fumes can cause allergic reactions or asthmatic symptoms, such as wheezing and shortness of breath.

"Hexavalent chromium is a powerful lung carcinogen and exposure to this chemical must be minimized," said Assistant Secretary of Labor for OSHA David Michaels. "OSHA provides guidance on its standards to ensure that employers and workers know the best ways to prevent workplace injuries and illnesses."

The booklet explains OSHA's hexavalent chromium standards in a reader-friendly format and is a companion document to the Small Entity Compliance Guide for the Hexavalent Chromium Standards published in 2006. Requirements for exposure limits, exposure monitoring and determination, protective work clothing and equipment, medical surveillance, communication of hexavalent chromium hazards and recordkeeping are described.

Reference: <http://www.osha.gov>

Executive Order 13514 Sets Sustainability Goals for Federal Agencies

By Abdul H. Khalid, Chemical Engineer, HTIS

On October 5, 2009, President Obama issued an Executive Order (EO) that focuses on "Federal Leadership in Environmental, Energy, and Economic Performance" and further has set sustainability goals for Federal agencies making improvements in their environmental, energy and economic performance. The full text document is available online at: <http://edocket.access.gpo.gov/2009/E9-24518.htm>. The EO 13514 was published in the Federal Register on October 8, 2009.

Federal agencies are required to set a 2020 greenhouse gas emissions reduction target within 90 days; increase energy efficiency; reduce fleet petroleum consumption; conserve water; reduce waste; support sustainable communities; and leverage Federal purchasing power to promote environmentally-responsible products and technologies.

The new EO requires agencies to measure, manage, and reduce greenhouse gas emissions toward agency-defined targets. It describes a process by which agency goals will be set and reported to the President by the Chair of Council on Environmental Quality (CEQ). According to the White House news release, the EO also requires agencies to meet a number of energy, water, and waste reduction targets, including:

- 30% reduction in vehicle fleet petroleum use by 2020;
- 26% improvement in water efficiency by 2020;
- 50% recycling and waste diversion by 2015;
- 95% of all applicable contracts will meet sustainability requirements;
- Implementation of the 2030 net-zero-energy building requirement;
- Implementation of the storm water provisions of the Energy Independence and Security Act of 2007, section 438; and
- Development of guidance for sustainable Federal building locations in alignment with the Livability Principles put forward by the Department of Housing and Urban Development, the Department of Transportation, and the Environmental Protection Agency.

Reference:

1. The White House, Office of the Press Secretary, October 5, 2009, "President Obama signs an Executive Order Focused on Federal Leadership in Environmental, Energy, and Economic Performance".

2. Federal Register, October 8, 2009, Vol. 74, No. 194, pages 52115-52127; and, Website @:

- <http://edocket.access.gpo.gov/2009/E9-24518.htm>

Designation of Bio-based Items for Federal Procurement

By Abdul H. Khalid, Chemical Engineer, HTIS

The US Department of Agriculture (USDA) amended its Guidelines for Designating Bio-based Products for Federal Procurement and added nine sections to designate items within which "Bio-based Products" would be afforded Federal procurement preference as provided under section 9002 of the Farm Security and Rural Investment Act of 2002, as amended by the Food, Conservation, and Energy Act of 2008 (FCEA) (referred to in this document as "section 9002"). The USDA has also established a minimum bio-based content for each of these items. This rule became effective on November 27, 2009. The full text of this document is available online at: <http://edocket.access.gpo.gov/2009/E9-25756.htm>.

The final rule requires the following products contain the shown minimum percentage of bio-based content:

- Chain and Cable Lubricants- 77%: Products designed to provide lubrication in such applications as bar and roller chains, sprockets, and wire ropes and cables. Products may also prevent rust and corrosion in these applications.
- Corrosion Preventives-53%: Products designed to prevent the deterioration (corrosion) of metals.
- Food cleaners- 53 %: Anti-microbial products designed to clean the outer layer of various food products, such as fruit, vegetables, and meats.
- Forming lubricants-68 %: Products designed to provide lubrication during metalworking applications that are performed under extreme pressure. Such metalworking applications include tube bending, stretch forming, press braking, and swaging.
- Gear lubricants 58 %: Products, such as greases or oils, those are designed to reduce friction when applied to a toothed machine part (such as a wheel or cylinder) that meshes with another toothed part to transmit motion or to change speed or direction.
- General purpose household cleaners-39 %: Products designed to clean multiple common household surfaces. This designated item does not include products that are formulated for use as disinfectants. Task-specific cleaning products, such as spot and stain removers, upholstery cleaners, bathroom cleaners, glass cleaners, etc., are not included in this item.
- Industrial cleaners-41 %: Products used to remove contaminants, such as adhesives, inks, paint, dirt, soil, and

grease, from parts, products, tools, machinery, equipment, vessels, floors, walls, and other production-related work areas. The cleaning products within this item are usually solvents, but may take other forms. They may be used in either straight solution or diluted with water in pressure washers, or in hand wiping applications in industrial or manufacturing settings, such as inside vessels. Task-specific cleaners used in industrial settings, such as parts wash solutions, are not included in this definition.

- Multipurpose cleaners 56 %: Products used to clean dirt, grease, and grime from a variety of items in both industrial and domestic settings. This designated item does not include products that are formulated for use as disinfectants.
- Parts wash solutions 65 %: Products that are designed to clean parts in manual or automatic cleaning systems. Such systems include, but are not limited to, soak vats and tanks, cabinet washers, and ultrasonic cleaners.

For additional information on this final rule, contact:

- Ron Buckhalt
USDA, Office of Procurement and Property Management,
Washington, D.C.
PH: 202.205.4008; or,
eMail: biopreferred@usda.gov

Reference:

1. Federal Register, October 27, 2009, Volume 74, No. 206, pages- 55089-55094.
2. <http://www.biopreferred.gov/Default.aspx>

ECHA Guidance on Classification, Labeling, and Packaging

By Abdul H. Khalid, Chemical Engineer, HTIS

On August 28, 2009, the European Chemicals Agency (ECHA) published its "Introductory Guidance" on the European Union (EU) classification, labeling and packaging (CLP) regulation and guidance on the application of the "CLP Criteria". They provide a comprehensive guidance to companies having obligations to meet under this legislation which became effective on January 20, 2009.

The guidance documents have been developed by the European Commission (EC) to support companies manufacturing or supplying chemicals, in particular SMEs, to comply with their obligations under the CLP Regulation (Regulation (EC) No 1272/2008 on classification, labeling and packaging of substances and mixtures). This new legislation will progressively replace the former EU classification and labeling legislation.

The introductory guidance presents basic features of the CLP Regulation. This includes information on the CLP notification

deadline of January 3, 2011. It also provides information in relation to the classification-based provisions of the REACH (Registration, Evaluation and Authorization of Chemicals) regulation.

The guidance on the application of the CLP criteria explains the general principles of classification and labeling and provides detailed guidance on how to classify and label substances and mixtures (physical, health and environmental hazards).

Reference: http://guidance.echa.europa.eu/docs/guidance_document/clp_en.htm

OSHA's Guidance Document on Protecting EMS Responders

By Abdul H. Khalid, Chemical Engineer, HTIS

On November 30, 2009, the Occupational Safety and Health Administration (OSHA) released a guidance document, titled, "Best Practices for Protecting EMS Responders during Treatment and Transport of Victims of Hazardous Substances Releases. This guidance document addresses adequate training and personal protective equipment for emergency medical services responders who assist victims of hazardous substance release incidents. The full text of this document is available online from the OSHA's website at: <http://www.osha.gov/publications/OSHA3370-protecting-EMS-respondersSM.pdf>

This document, a companion to OSHA's Best Practices for Hospital - Based First Receivers, advises that employers provide, at a minimum, awareness level training to EMS responders. Workers receiving awareness-level training are not permitted to rescue or treat contaminated patients, but are responsible for notifying authorities if they suspect hazardous substances at a scene. Operations-level training teaches EMS responders skills for entering hazardous areas and caring for contaminated individuals.

"Healthcare workers, including EMS personnel, play a critical role in a community's emergency response program," said acting Assistant Secretary of Labor for OSHA Jordan Barab. "Emergency workers who protect the lives of victims at dangerous incidents should not risk becoming victims themselves because they lack proper training and protective clothing."

The guidance document helps employers to determine the type of training and PPE needed by anticipating the EMS responder's role in a worst-case scenario, identifying hazards associated with the responder's assigned duties, and developing an emergency response plan detailing safe accomplishment of those duties.

Reference: OSHA Trade News Release, November 30, 2009, "OSHA guidance document focuses on training, personal protective equipment for safeguarding emergency medical responders"



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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.

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