HTIS
Hazardous Technical Information Services
BULLETIN

VOL. 19 NO. 1 JAN – FEB 2009

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Moving On

Solid Waste Definition Revised

By Eduardo Alvarado, Muhammad Hanif and Beverly Howell, HTIS

On October 7, 2008, the Environmental Protection Agency (EPA) Administrator signed a final rule that revises the definition of solid waste at 40 CFR 261.2. The revised definition of solid waste is used to exclude certain hazardous secondary materials (i.e. spent materials, listed sludges, and listed byproducts) from regulation under Subtitle C of the Resource Conservation and Recovery Act (RCRA). The new rule provides additional exclusions to EPA's definition of solid waste for certain recycling activities. By adopting the revised definition, the EPA is streamlining its regulation of hazardous secondary materials to encourage beneficial recycling by reclamation and help conserve resources. By doing so, recycling these materials will not only be safe, but also less costly and more efficient.

The terms "recycling" and "reclamation" are not necessarily synonymous. **"Recycling"** typically involves a series of activities, including storage and other handling steps that culminate in the production of a valuable end product of some kind. Thus, if materials need to be reclaimed in order to produce a valuable end product, the **reclamation activity** can be thought of as one step in the overall recycling process. Further explanation of the term "reclamation" can be found in the preamble to the October 2003 proposal at 68 FR 61564 (published on October 28, 2003).

In October 2003, the EPA proposed a regulatory exclusion from the

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definition of solid waste which would streamline requirements for the recycling of hazardous secondary materials. After evaluating public comments and conducting independent analyses, the Agency published a supplemental proposal in March 2007. This current ruling finalizes the March 2007 supplemental proposal by establishing streamlined requirements for the following:

- Materials that are generated and legitimately reclaimed under the control of the generator (i.e., generated and reclaimed on-site including same geographically contiguous property, by the same company, or under "tolling" agreements);
- Materials that are generated and transferred to another company for legitimate reclamation (40 CFR 261.4(a)(24)) under specific conditions; and
- Materials that EPA or an authorized state determines to be non-wastes through a case-by-case petition process.

The rule also contains a provision to determine which recycling activities are legitimate under the new exclusions and non-waste determinations. This provision ensures that only authentic recycling, and not treatment or disposal under the guise of recycling, receives the benefits of these streamlined regulations. To determine whether a recycling activity is "legitimate", the following factors must be taken into account:

- The secondary material must provide a useful contribution to the recycling process;
- The recycling process must make a valuable new intermediate or final product;
- The recycled material must be managed as a valuable product; and
- The recycled material does not contain toxic constituents at levels higher than a non-recycled product manufactured from virgin materials.

These exclusions are not available for materials that are: (1) considered inherently waste-like; (2) used in a manner constituting disposal; or (3) burned for energy recovery.

The restrictions for the exclusions in this final rule are substantially similar to those contained in the supplemental proposal published on March 26, 2007 (72 FR 14172) with certain modifications regarding:

- Reporting and recordkeeping;
- Reasonable efforts required of generators to ensure that their hazardous secondary materials are safely and legitimately recycled;
- Intermediate facilities storing hazardous secondary materials for more than 10 days are eligible under the transfer-based exclusion; and
- Tailoring the financial assurance requirements to

intermediate facilities and reclaimers of hazardous secondary materials.

The Agency estimates that about 5,600 facilities handling approximately 1.5 million tons of hazardous secondary materials annually may be affected by this rule. The activities most affected are metals and solvent recycling. This action is expected to result in cost savings of approximately $95 million per year for all affected industry sectors.

"Removing barriers to legitimate recycling is good for business and the environment," said Susan Parker Bodine, assistant administrator for the Office of Solid Waste and Emergency Response. "This rule will help conserve natural resources, save energy, and, reduce costs."

The final rule became effective on December 29, 2008, that is, 60 days after the Federal Register publication date of October 30, 2008. For more information on the new rule, including the pre–publication rulemaking, please see EPA's DSW Rulemakings http://www.epa.gov/epawaste/hazard/dsw/rulemaking.htm

References: 1. U.S. Environmental Protection Agency, News for Release, 7 October 2008, "Definition of Solid Waste Revised to Encourage Recycling". 2. U.S. Environmental Protection Agency, Fact Sheet "Final Definition of Solid Waste Rule, EPA530-F-08-006". 3. Federal Register, Vol 73, Pages 64667-64788, October 30, 2008.

The REACH Regulation List of Pre-registered Substances

By Abdul H. Khalid, Chemical Engineer, HTIS

On October 7, 2008, the European Chemicals Agency (ECHA) published an intermediate list of nearly 40,000 chemicals that have been pre-registered under the European Union's (EU) Registration, Evaluation and Authorization of Chemicals (REACH) regulation. These chemicals or substances were registered for information in a central database by the ECHA which is located in Helsinki, Finland. The REACH regulation applies to substances manufactured in or imported to the EU in annual quantities of one ton or more per company, unless the regulation indicates otherwise.

Article 28 (4) of the REACH regulation requires ECHA to publish the list of substances which have been pre-registered within a time period starting on June1, 2008 and ending on December 1, 2008. Pre-registration requires only limited data and is free and simple.

This intermediate list covers substances registered as of October 1, 2008. According to the ECHA, this list provides downstream users or companies that purchase chemicals, a chance to determine whether substances of their interest have already been pre-registered and the status of pre-registration. A complete list of chemicals pre-registered before the December 1, 2008 deadline will be published by January 1, 2009.

Pre-registration of chemicals is important because the chemicals that are not pre-registered will be considered illegal on the market after December 1, 2008. The users can remind their manufacturers and importers that companies can only benefit from REACH's extended registration deadlines if they have pre-registered their substances as of December 1, 2008.

Preregistered chemicals can be registered by November 30, 2010, May 31, 2013, or May 31, 2018, depending on their production volume and toxicity profile. Failure to meet the deadline means that a company cannot continue manufacturing or importing the substances until they have submitted full registration information including related data and paid the registration fee.

ECHA can contact the company for clarification in case there are doubts with the validity of chemicals submitted for pre-registration. The substances identified as doubtful on the validity of chemicals may not appear on the intermediate list. The database containing the pre-registered substances can be searched in a number of ways or the complete list can be downloaded. The database of pre-registered chemicals is available at: http://apps.echa.europa.eu/preregistered/pre-registered-sub.aspx/

Reference: The European Chemicals Agency (ECHA), Press Release ECHA/PR/08/33, Helsinki, October 7, 2008, "ECHA Publishes an Intermediate List of Pre-Registered Substances".

DOE News

DOE's Guidance Document on "Nano Worker" Safety

By Tom McCarley, Chemist, HTIS

Nanotechnology holds tremendous promise for all of our lives. Being able to assemble atoms and molecules on an almost individual basis into new and useful molecular structures is a long dream of chemists and material scientists. But the science and technology of working with extremely small particles is causing increasing concern among environmental, safety, and health (ES&H) professionals due to the ease with which such ultrafine or smaller particles can enter the body via inhalation, dermal contact, or ingestion. Nanoparticles are those solid particles where at least one dimension is less than 100 nanometers or so in size. A nanometer is one billionth of a meter and at this size you are talking about a small finite number of individual atoms or molecules.

The Department of Energy (DOE) via its network of national laboratories, is establishing some five research centers for nanoscience research. Because the toxicological properties of bulk materials may not apply directly to those materials at the nanoscale, workers and researchers preparing and using nanoparticles are entering somewhat "uncharted territory" from an occupational safety and health perspective. Engineering systems such as air circulation and filtration need to be looked at anew as does laboratory housekeeping and spill handling. DOE has issued a guidance document which attempts to address many of the issues for those working with nanoparticles. Entitled "Approach to Nanomaterial ES&H", the current reversion 2 of the document is available as a 25 page pdf document online from http://orise.orau.gov/emi/scapa/files/biosafety/NSRC%20ESH%20Approach.pdf

DOE's Guidance Document contains the following main sections:

1. Introduction
2. Conceptual Foundations
3. Controls for R&D Laboratory Operations
4. Verifying Program Effectiveness
5. Transportation of Nanomaterials

6. Management of Nanomaterial-Bearing Waste Streams
7. Management of Nanomaterial Spills

Workers in the nanoparticle industry will find the DOE guidelines handy, though lacking more specific information on the particular materials to which they are exposed. Those involved in the fabrication of carbon nanotubes and other nanoparticles with longer-term exposure to free, dispersible particles need to be especially cautious and seek expert ES&H advice.

References: Department of Energy Nanoscale Science Research Centers, Approach to Nanomaterial ES&H, revision 2, June 2007 - http://orise.orau.gov/emi/scapa/files/biosafety/NSRC%20ESH%20Approach.pdf Presentations of the Division of Chemical Health and Safety at the 234th national meeting of the American Chemical Society, Boston, August 2007.

EPA News

EPA Revises Community Right–to–Know Reporting Rule

By Muhammad Hanif, Beverly Howell, and Ariel Rosa, HTIS

On October 17, 2008, the Environmental Protection Agency (EPA) finalized reporting requirements under the Emergency Planning and Community Right-to-Know Act (EPCRA) regulations at Title 40 Code of Federal Regulations (CFR) parts 355 and 370 (40CFR355 and 370). The changes under EPCRA to the Emergency Planning (Section 302), Emergency Release Notification (Section 304), and Hazardous Chemical Reporting (Sections 311 and 312) regulations were proposed on June 8, 1998 (63 FR 31268). These changes include clarification on how to report hazardous chemicals in mixtures, and changes to Tier I and Tier II forms. Additionally, the rules at parts 355 and 370 of 40 CFR now use a question and answer format in plain language to make the rules more understandable and to improve the compliance. Facilities subject to EPCRA reporting, State Emergency Response Commissions (SERCs), Local Emergency Planning Committees (LEPCs) and fire departments should become familiar with the new regulations. The final rule does not address the EPA's proposed exclusion from particular notification requirements under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and EPCRA for releases of hazardous substances to the air where the source of the release is animal waste at farms. That proposal will be addressed in a separate rulemaking package.

The additional significant changes include:

- Removal of the Tier I and Tier II forms and their instructions from the CFR. They may now be found on the EPA's website: www.epa.gov/emergencies.
- Revisions to the Tier I and Tier II inventory reporting forms.
- Inclusion of North America Industrial Classification System (NAICS) code of the

reporting facilities on the Tier I or Tier II form.

- Inclusion of chemical or common name of the chemical from Material Safety Data Sheets on the Tier II forms.

- Revised rules for determining thresholds for chemical inventory reporting (40 CFR Part 370) for chemicals in mixtures. For hazardous chemical mixtures that are mixtures and **do not contain** any extremely hazardous substances (EHS), facilities have one of the following options for determining whether a reporting threshold quantity is present:

  1. Aggregate the quantities present in pure form and as a component in all mixtures (even if the mixture is also being reported as a hazardous chemical) or
  2. Consider the total quantity of each mixture separately.

- When determining whether the threshold quantity of an **EHS has been met**, facilities must include the total quantity of that EHS present in the pure form as well as in any mixture, even if any mixture including the EHS is also being reported as a hazardous chemical.

- Addition of the terms SERC (state emergency response commission) and LEPC (local emergency planning committee) to the rules at 40 CFR 355 and 370. The definitions of these terms can be found in sections 355.61 and 370.66 of 40 CFR.

- Changes to the emergency planning requirements, including notification to both LEPC and SERC when the emergency planning rules are triggered (current rules only specified notification to SERC).

The final rule was published in the Federal Register (FR), Vol. 73, pages 65451-65484 (73 FR 65451) on October 3, 2008. A fact sheet and the final rule for public reference are available at: http://www.epa.gov/oem/content/epcra/index.htm. The rule is effective December 3, 2008, and can be downloaded from http://www.epa.gov/fedrgstr/EPA-WASTE/2008/November/Day-03/f25329.pdf.

For further information on the final rule, you may contact Sicy Jacob, Office of Emergency Management, Mail Code 5104A, Environmental Protection Agency, 1200 Pennsylvania Avenue, NW, Washington DC 20004; telephone number: (202) 564-8019; fax number: (202) 564-2620; e-mail address: jacob.sicy@epa.gov.

References: 1. Federal Register (FR) volume 73, pages 65451 – 65484 (73FR65451), Monday, November 3, 2008. 2. U.S. EPA, News Releases - Emergency Response, 17 October 2008, “EPA Amends Community

Right-to-Know Reporting Regulation". 3. U.S. EPA, Fact Sheet, "Amendments to Emergency Planning and Notification; Emergency Release Notification and Hazardous Chemical Reporting." EPA550-F-08-001.

EPA Finalizes Academic Laboratory Rules

By Muhammad Hanif and Abdul Khalid, HTIS

The Environmental Protection Agency (EPA) has been involved in several efforts to facilitate improved reuse and recycling of chemicals and better waste management overall in educational institutions. Existing Federal and state hazardous waste regulations were designed primarily for industrial settings and are, in certain aspects, difficult to apply to academic teaching and research laboratories. However, until now, the EPA or Agency has treated generators of hazardous waste in both industrial/commercial and academic worlds the same. The challenge for these academic laboratories is that they typically use small amounts of a large variety of chemicals on a sporadic basis. Under Resource conservation and Recovery Act (RCRA) at Title 40, Code of Regulations (CFR), parts 261 – 268 (4CFR 261-268) requirements, generators of hazardous waste were required to identify their hazardous waste at the point of generation and to commence managing that hazardous waste according to the RCRA rules, regardless of whether the generator was an industrial entity or an academic one.

The EPA has issued the final version of the Academic Laboratory Rules, establishing a new subpart -- Subpart K to the RCRA hazardous waste generator regulatory requirements. The new rule, that establishes subpart K within 40 CFR part 262 was published in volume 73 of the Federal Register (FR) on December 1, 2008 and **became effective on December 31, 2008**. This rule provides incentives for eligible academic entities to clean-out old and expired chemicals that may pose unnecessary risk. Further, this rule requires the development of a Laboratory Management Plan (LMP) which is expected to result in safer laboratory practices and increased awareness of hazardous waste management. Eligible academic entities may also choose to remain subject to the pre-existing hazardous waste generator requirements. Eligible academic entities are colleges and universities, and teaching hospitals and nonprofit research institutes that are either owned by or formally affiliated with a college or university. **Under the alternative set of regulations, there will be an optional set of alternate management standards that those eligible academic entities can choose to follow in place of the established hazardous waste identification requirements.**

The EPA has finalized this alternative rule because the Agency believes laboratories at eligible academic entities have different hazardous waste generation patterns than typical industries. Industrial waste generators typically produce large volumes of a few waste streams. Eligible academic entities' laboratories, on the other hand, produce a relatively small volume of many different types of waste. As such, academic laboratories find it challenging to manage these wastes under the existing regulations. The Academic Laboratory Rule gives eligible academic entities more flexibility, while helping them safely

manage their hazardous waste.

The new rule includes the following provisions for:

- Identifying the waste at some place other than the point of generation, as long as it is performed by qualified personnel professionally trained under RCRA requirements. Under the new rule, the identification of hazardous waste may be done:

  a. in the laboratory,

  b. at an on–site central accumulation area, or

  c. at an on–site treatment, storage, or disposal facility (TSDF).

- Designation of the hazardous waste as "unwanted materials" while they remain in the laboratory until the waste identification is completed.

- Removal of the "unwanted materials" on a regular basis not to exceed six months, unless the lab accumulates:

  a. more than 55 gallons of "unwanted material" (including reactive acutely hazardous unwanted material), at which point all unwanted materials must be removed from the laboratory within ten calendar days, or

  b. more than one quart of "reactive acutely hazardous unwanted material" before the regularly scheduled removal, then the reactive acutely hazardous unwanted material must be removed from the laboratory within ten calendar days.

- Encouraging laboratories to remove old, unneeded, or expired chemicals (i.e. "legacy chemicals") that may pose a risk to human health through "laboratory clean–outs," provided the "laboratory clean–out" occurs

  a. only once per 12 months per lab,

  b . over the course of a 30–day period, and

  c. in which case the portion of the clean–out that is unused commercial chemical products (either listed or characteristic) will not be counted towards the entity's generator status

- Encouraging academic entities to develop and implement an LMP to show that the laboratory will meet certain performance–based standards as described in the Final Rule.

A fact sheet and the final rule for public reference are available at: http://www.epa.gov/osw/h

azard/generation/labwaste/ and can be downloaded in pdf format from URL: http://www.epa.gov/fedrgstr/EPA-WASTE/2008/December/Day-01/f27863.pdf.

Detailed description and justification of the changes are discussed in Section III of the final rule's preamble.

For further information regarding specific aspects of the final rule, you may contact Kristin Fitzgerald, Office of Solid Waste (703) 308-8286, Fitzgerald.Kristin@epa.gov; Patricia Mercer, Office of Solid Waste, (703) 308-8408, Mercer.Patricia@epa.gov; or Jessica Biegelson, Office of Solid Waste, (703) 308-0026, Biegelson.Jessica@epa.gov. Mail inquiries may be directed to the Office of Solid Waste, (5304P), 1200 Pennsylvania Avenue NW., Washington, DC 20460.

References: 1. Federal Register (FR) volume 73, pages 72911 - 72960 (73FR72911), Monday, December 1, 2008. 2. U.S. EPA, News Releases – November 18, 2008, "New Rule Will Improve Environmental Performance of Academic Labs"

Is the Viability of EPA's IRIS Database in Jeopardy?

By Ariel Rosa, Environmental Protection Specialist, HTIS

The Environmental Protection Agency's (EPA) mission includes evaluating and regulating toxic chemicals. The EPA's Integrated Risk Information System (IRIS) program is a chemical evaluation program that is a critical component of the EPA's capacity to support scientifically sound environmental regulations and policies. The IRIS database contains the EPA's scientific position on the potential human health effects due to exposure to more than 540 chemicals.

In a new report and in testimony before the U.S. Senate Committee on Environment and Public Work, released on April 29, 2008, the Government Accountability Office, (GAO) highlighted its work on toxic substances, focusing on:

- Its March 2008 report, *Chemical Assessments: Low Productivity and New Interagency Review Process Limit the Usefulness and Credibility of EPA's Integrated Risk Information System* and
- Key changes to the IRIS assessment process that the EPA included in its revised IRIS assessment process released on April 10, 2008.

In this testimony, (GAO-08-743T) "*EPA's New Assessment Process Will Increase Challenges EPA Faces in Evaluating and Regulating Chemicals*", the GAO also highlights the findings of two reports on the EPA's regulation of toxic chemicals. For the IRIS report, the GAO analyzed EPA data and interviewed officials at relevant agencies, including the Office of Management and Budget (OMB). For this testimony, the GAO supplemented the IRIS report with a review of the EPA's revised IRIS assessment process announced in early April.

Given the importance of the IRIS program to the EPA's ability to protect public health and the environment, Congress should consider requiring the EPA to suspend its new process and develop one that is responsive to

the GAO's recommendations.

The IRIS database is at serious risk of becoming obsolete because the EPA has not been able to routinely complete timely, credible assessments or decrease its backlog. Of 70 assessments being conducted as of December, 2007, 48 had been ongoing for more than five years, and 12 had taken more than nine years. A total of four were completed in fiscal years 2006 and 2007, the report said. In addition, recent assessment process changes, as well as other changes the EPA was considering at the time of the GAO's review, further reduce the timeliness and credibility of IRIS assessments.

Although the EPA has taken steps to improve the IRIS program since 2000 and has developed a number of draft assessments for external review, its efforts to finalize assessments have been thwarted by a combination of factors, including two new OMB-required reviews of IRIS assessments by the OMB and other federal agencies; the growing complexity of and scope of risk assessments; EPA management decisions, such as delaying some assessments to await new research; and the compounding effect of delays (even one delay can have a domino effect), requiring the process to essentially be repeated to incorporate changing science and methods.

Naphthalene, Formaldehyde, Royal Demolition Explosive (RDX), and Trichloroethylene are examples of some key IRIS assessments that have been in progress for a number of years, in part because of delays stemming from one or more of the key factors identified that have hindered the EPA's productivity.

The OMB/interagency reviews of draft assessments involve other federal agencies in the EPA's IRIS assessment process in a manner that limits the credibility of IRIS assessments and hinders the EPA's ability to manage them. For example, the OMB/interagency reviews lack transparency, and the OMB required the EPA to terminate five assessments that the EPA had initiated to help it implement the Clean Air Act. The changes to the IRIS assessment process that the EPA was considering, but had not yet issued at the time of the GAO's review, would have added to the already unacceptable level of delays in completing IRIS assessments and further limited the credibility of the assessments.

On April 10, 2008, the EPA issued a revised IRIS assessment process, effective immediately. In its February 2008 comments on the GAO's draft report, the EPA said that it would consider the report's recommendations, which were aimed at streamlining the process and better ensuring that the EPA has the ability to develop transparent, credible assessments. However, the EPA's new process is largely the same as the draft GAO evaluated, and some key changes also are likely to further exacerbate the productivity and credibility concerns GAO identified. For example, while the draft process would have made comments on IRIS assessments from other federal agencies part of the public record, the EPA's new process expressly defines such comments as "deliberative" and excludes them from the public record.

The GAO continues to believe it is critical that input from all parties (particularly agencies that may be affected by the outcome of IRIS

assessments) be publicly available. As recommended in the GAO's March 2008 report, to effectively maintain IRIS, the EPA must, among other things, streamline its lengthy assessment process and adopt transparency practices that provide assurance that IRIS assessments are appropriately based on the best available science and that they are not inappropriately biased by policy considerations. Since the EPA's new process is not responsive to the GAO's recommendations, the viability of this critical database has been further jeopardized.

Reference: http://www.gao.gov/docsearch/abstract.php?rptno=GAO-08-743T

Guidance Document for Implementing EPA SW-846 Method 8330B

By Abdul H. Khalid, Chemical Engineer, HTIS

The Department of Defense (DOD) Data Quality Workgroup recently developed a guidance document for implementing the Environmental Protection Agency (EPA)'s SW-846 Method 8330B. The method provides instructions for the trace analysis of explosives and propellant residues by high performance liquid chromatography (HPLC) including sampling procedures. DOD interested environmental protection specialists and managers can access this document online at: http://www.navylabs.navy.mil/.

Reference: DOD Environmental Data Quality Workgroup-Guide for Implementing EPA SW-846 Method 8330B. July 7, 2008

New Guidelines Encourage Responsible Recycling of Electronics

Reprint submitted by Ariel Rosa and Abdul Khalid, HTIS

Electronics recyclers have a new guide on how to run safe and environmentally protective recycling operations. The EPA, as part of a group of recycling stakeholders, developed the "Responsible Recycling (R2) Practices for Use in Accredited Certification Programs for Electronics Recyclers" to promote better environmental, worker safety, and public health practices for electronics recyclers.

"There should be no doubt that choosing to reuse or recycle used electronics is the right choice for our environment," said Susan Parker Bodine, assistant administrator for EPA's Office of Solid Waste and Emergency Response. "These voluntary guidelines will help assure Americans that their used electronics will be recycled safely and responsibly."

The R2 guide lists 13 principles to help electronics recyclers ensure their material is handled safely and legally in the U.S. and foreign countries. It calls on recyclers to establish a management system for environmental and worker safety; develop a policy that promotes reuse and material recovery over landfill or incineration; and use practices that reduce exposures or emissions during recycling operations. The principles also call for recyclers to use diligence to assure appropriate management of materials throughout the recycling chain, including materials that are exported to foreign countries.

Reusing and recycling used electronics helps the environment by saving

energy and conserving natural resources. When improperly managed, however, used electronics can release materials that increase environmental and health concerns.

The workgroup that developed the guidelines represent federal and state governments, electronics manufacturers and recyclers, and trade associations. The workgroup will now focus on establishing a certification process, which will allow consumers easily to recognize responsible recyclers in the marketplace.

Reference:
http://www.epa.gov/epawaste/conserve/materials/ecycling/r2practices.htm

EPA's New Exhaust Emission Standards

By Abdul H. Khalid, Chemical Engineer, HTIS

On September 4, 2008, the U.S. Environmental Protection Agency (EPA) announced a final rule on a new emission control program that would control and reduce hydrocarbon (HC), nitrogen oxides (NOx), and carbon monoxide (CO) emissions from marine spark-ignition engines and small land-based non road engines. The new emission control program will reduce the harmful health effects of ozone and carbon monoxide from these engines resulting in health and environmental benefits. The EPA's final rule also adopts new standards to reduce evaporative emissions from these fuel systems. **The new exhaust emission standards are applicable only to newly manufactured products and are effective in 2010 and 2011**.

The EPA anticipates that the final rule will cut nitrogen oxide and hydrocarbon emissions from engines used in lawn mowers, chain saws, and other small equipment by 35 percent. For marine engines, the rule will result in a 70 percent reduction in emissions of both hydrocarbons and nitrogen oxides and a 20 percent reduction in carbon monoxide emissions with a 70 percent decrease in evaporative emission.

The EPA defines two groups (separate emission standards) because of differences in their design and use but the controls for these products have been combined into one rulemaking because these engines and vehicles share many common characteristics. The two groups are:

Small Nonroad Spark-Ignition Engines and Equipment: Spark-ignition (SI) nonroad engines rated below 25 horsepower (19 kW) used in household and commercial applications, including lawn and garden equipment, utility vehicles, generators, and a variety of other construction, farm, and industrial equipment.

Marine Spark-Ignition Engines and Vessels: Spark-ignition engines used in marine vessels, including outboard engines, personal watercraft, and sterndrive/inboard engines.

The EPA also estimates that by 2030 this rule will yield annual emission reductions of 600,000 tons of hydrocarbons, 130,000 tons of nitrogen oxide (NOx), 5,500 tons of direct particulate matter, and 1.5 million tons of carbon monoxide (CO) when fully implemented, thus, saving 190 million gallons of gasoline each year approximately. To meet the new exhaust emissions standards, the EPA will require manufacturers to use catalytic converters for the first time in many types of small watercraft, lawn, and garden

equipment. The EPA's fact sheet shows the numerical values of the standards and is available at: http://www.epa.gov/otaq/regs/nonroad/marinesi-equipld/420f08013.htm.

For more information on this new rule visit the EPA's web site at: http://www.epa.gov/OMS/regs/nonroad/marinesi-equipld/420f08013.pdf or contact the Assessment and Standards Division at EPA, Office of Transportation and Air Quality, Ann Arbor, MI 48105, phone: 734-214-4636 or E-mail: asdinfo@epa.gov.

Reference: Gasoline Boats and Personal Watercraft, September 4, 2008: Final Rule: Control of Emissions of Air Pollution from New Nonroad Spark-Ignition Engines, Equipment, and Vessels, EPA's web page at: http://www.epa.gov/otaq/marinesi.htm#regs.

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Cleaner New Generation of Outdoor Wood Heaters is Good News for New Englanders ~ Energy

Reprint submitted by Moraima Lugo-Millán, HTIS

Significantly cleaner models of outdoor wood-burning heaters – also called outdoor wood boilers, outdoor wood furnaces, or outdoor wood-fired hydronic heaters – will soon be available for New England families and businesses that choose to burn wood as a heat and hot water source.

Under the second phase of a voluntary partnership with the EPA, several manufacturers of outdoor wood-fired heaters have already pledged to market a new generation of units that are more efficient and which will emit about 90 percent less air pollution than unqualified units.

In northern rural areas of New England, outdoor wood heaters are relied upon by thousands of families to provide heat and hot water for homes and other buildings. Further, with skyrocketing costs of other energy sources prompting more people to turn to wood burning, the EPA's voluntary program to reduce emissions from outdoor wood heaters provides a cleaner alternative to consumers. Outdoor wood heaters can be a significant local source of smoke and particle pollution.

"Here in New England, while many families and businesses are choosing wood as their winter heating fuel source, the new Phase 2 outdoor wood heaters will help people choose a model that is better for air quality than older, unqualified units" said Robert Varney, regional administrator of the EPA's New England office.

In response to concerns about smoke and particle pollution, in 2005, Vermont was the first New England state to propose a regulation for outdoor wood heaters that includes emission limits. Now, Maine and New Hampshire have adopted, and Massachusetts has proposed, similar regulations.

"Vermont is proud to be the first state to take steps to encourage cleaner and more efficient outdoor wood heaters," said George Crombie, secretary of the Vermont Agency of Natural Resources.

"Vermonters have a long tradition of heating with wood, but as regulators we must ensure the cleanest burning units are available." Qualified Phase 2 models of both outdoor and indoor wood-fired heaters will be marked by a white hang tag showing that a unit meets the requirements of the program. Some manufacturers already have units available that meet the new emission levels.

The voluntary EPA program was first launched in 2007, providing criteria for units to be 70 percent cleaner than unqualified models. Today the program has evolved to Phase 2, and EPA-qualified units will be up to 90 percent cleaner than older unqualified units. So far, this program has reduced nearly 1,200 tons of fine particle emissions annually. Under Phase 2, new models must emit no more than 0.32 pounds of particle pollution per million BTUs of heat output. The models must be tested by an EPA-accredited third-party laboratory to verify that they meet these levels.

Exposure to fine particle pollution, also called PM 2.5, is linked to a number of serious health problems, including decreased lung function, aggravated asthma, irregular heartbeat, nonfatal heart attacks and premature death in people with heart and lung disease. Children, people with heart or lung disease, and older adults are the most susceptible to the effects of particle pollution.

Reference:
http://yosemite.epa.gov/opa/admpress.nsf/f0d7b5b28db5b04985257359003f533b/3703a2bb86188bb7852574ea0076239a!OpenDocument

More POPs Substances for Review

By Ariel Rosa, Environmental Protection Specialist, HTIS

From 13-17 October 2008, 31 members of the Persistent Organic Pollutants Review Committee (POPRC) met in Geneva, Switzerland to review the chemicals proposed for listing under Annex A, B, and/or C of the Stockholm Convention on Persistent Organic Pollutants and to discuss other relevant issues.

The POPRC is composed of government-designated experts assisted with observers from other parties and Non-Government Organizations (NGOs). POPRC reviews chemicals with Persistent Organic Pollutants (POPs) characteristics and recommends them for listing under the Stockholm Convention.

POPs are organic compounds that are resistant to environmental degradation through chemical, biological and photolytic, processes. Because of this, they have been observed to persist in the environment, to be capable of long-range transport, bioaccumulate in human and animal tissue, biomagnify in food chains, and to have had unforeseen effects on human health and the environment.

In May 1995, the United Nations Environment Programme Governing Council (GC) decided to begin investigating POPs. The initial short list consisted of the following twelve POPs, better known as the "dirty dozen"; *aldrin, chlordane, DDT, dieldrin, endrin, heptachlor, hexachlorobenzene, mirex, polychlorinated biphenyls, polychlorinated dibenzo-p-dioxins, polychlorinated dibenzofurans*, and *toxaphene*.

At the October 2008 meeting, scientists

reviewed four chemicals to be added to a list of five short-listed last year for consideration under the Convention.

The four additional chemicals are:

Commercial uses of *octabromodiphenyl ether*, a brominated flame retardant used in textiles and carpets

Pentachlorobenzene, found in electrical transformer fluids and as an impurity in herbicides, fungicides and wood treatments

Alpha and beta hexachlorocyclohexane w hich are by-products of the production of the pesticide Lindane.

Last year, at the Review Committee held in, Geneva, Switzerland (19-23 November 2007), the Committee approved the risk management evaluation for five chemicals, and recommended that the Conference of the Parties (COP-4) consider listing them under Annex A: *lindane*; *chlordecone*; *hexabromobiphenyl (HBB); pentabromodiphenyl ether (pentaBDE)*; and under Annex A or B: *perfluorooctane sulfonate (PFOS), its salts* and *PFOS fluoride (PFOSF)*.

The groups of compounds that make up POPs are also classed as PBTs (**P**ersistent, **B**ioaccumulative and **T**oxic) or TOMPs (**T**oxic **O**rganic **M**icro **P**ollutants.)

Many people are familiar with some of the most well-known POPs, such as PCBs, DDT, and dioxins. Though there are a few natural sources of POPs, most POPs are created by humans in industrial processes, either intentionally or as byproducts.

- Intentionally produced chemicals currently or once used in agriculture, disease control, manufacturing, or industrial processes. Examples include PCBs, which have been useful in a variety of industrial applications (e.g., in electrical transformers and large capacitors, as hydraulic and heat exchange fluids, and as additives to paints and lubricants) and DDT, which is still used to control mosquitoes that carry malaria in some parts of the world.

- Unintentionally produced chemicals, such as dioxins, that result from some industrial processes and from combustion (for example, municipal and medical waste incineration and backyard burning of trash).

What Domestic Actions Have Been Taken to Control POPs?

The United States has taken strong domestic action to reduce emissions of POPs. None of the POPs pesticides listed in the Stockholm Convention are registered for sale and distribution in the United States today. In 1978, Congress prohibited the manufacture of PCBs and severely restricted the use of the remaining PCB stocks.

Since 1987, the EPA and the states have effectively reduced environmental releases of dioxins and furans to land, air, and water from U.S. sources. These regulatory actions, along with voluntary efforts by U.S. industry, resulted in a greater than

75 percent decline in total dioxin and furan releases between 1987 and 1995 from known industrial sources. The EPA anticipates that environmental dioxin and furan releases will be reduced by more than 90 percent from the 1987 levels.

The Stockholm Convention continues to fulfill it mandate and meet its responsibilities by reviewing others chemicals for potential listing and reaffirming the Review Committee's mandate regarding the identification of POPs in current use.

Reference:
http://www.epa.gov/oia/toxics/pop.htm#pops

FDA News

U.S. Opens Food and Drug Administration Office in China

By Ariel Rosa, Environmental Protection Specialist, HTIS

On November 18, 2008, after so many months of a steady growth of recalls and unsafe products such as seafood, pet food, toys and toothpaste imported to the United States from China, the U.S. Department of Health and Human Services (HHS) officially announced the opening of three offices of its Food and Drug Administration (FDA) in Beijing, Guangzhou and Shanghai.

"We're opening up a new era, not just new offices," Secretary Leavitt said. "By having a presence in other parts of the world, we can work more closely with manufacturers and other governments, better share best practices and further ensure that quality and safety are built into food and consumer products at the point of manufacture."

In December 2007, the United States signed two Memoranda of Agreement on the safety of food, feed, drugs and medical devices with agencies of the Chinese government. The agreements, signed by Secretary Leavitt for the United States, contain a framework for closer collaboration between HHS/FDA and its Chinese counterpart agencies to help assure Chinese products under HHS/FDA jurisdiction that come to the United States will be safer. As a result, the transmission of information between the agencies of the two countries has especially improved, and they have worked more closely to address safety concerns.

Eight senior experienced FDA officials have been selected to work in the offices located in China. The employees are inspectors and senior technical experts in foods, medicines and medical devices. The HHS/FDA office in Beijing will be located in the US Embassy. In Guangzhou, it will be located in the U.S. Consulate General, and in Shanghai it will be part of the U.S. consular mission there, but will be situated in the Shanghai Centre, a well-established business complex in the city where several other U.S. government agencies have staff.

HHS/FDA officials will also assist the Chinese Government, as requested, in its ongoing efforts to improve its regulatory systems for exports to help assure product safety.

Establishing a permanent HHS/FDA presence in China will enhance the speed and effectiveness of regulatory cooperation and efforts to protect consumers in both countries.

In addition to China HHS is working to have a FDA presence in other geographic regions including - India, Europe,

Latin America and the Middle East.

Reference: 1. http://www.importsafety.gov/. 2. www.globalhealth.gov.

NIOSH News

NIOSH Update on Occupational Exposure to Hexavalent Chromium

By Abdul H. Khalid, Chemical Engineer, HTIS

The National Institute for Occupational Safety and Health (NIOSH) recently released its updated draft of "Criteria Document Update Occupational Exposure to Hexavalent Chromium" for public review. NIOSH lowers the recommended exposure limit (REL) for hexavalent chromium to one fifth of the agency's previous level and 25 times lower than the Occupational Safety and Health Administration (OSHA)'s permissible exposure limit (PEL).

This document is derived from reviews of information related to human, animal, and experimental studies of the toxicity of hexavalent chromium Cr (VI) compounds and is intended to describe the potential health effects of occupational exposure to this group of chemical compounds. The updated NIOSH policies document on occupational exposure to hexavalent chromium compounds include:

- Critical animal, human, and in vitro studies on occupational exposure to hexavalent chromium;
- Relevant quantitative risk assessments about occupational exposure to hexavalent chromium;
- Appropriate methods for sampling and analysis of hexavalent chromium compounds in the workplace;
- Basis for the NIOSH revised Recommended Exposure Limit for hexavalent chromium compounds; and
- NIOSH recommendations for protecting workers from occupational exposure to hexavalent chromium.

NIOSH requests written public comments on the draft document on or before January 31, 2009.

Reference: 1. http://www.cdc.gov/niosh/review/public/144/ 2. http://www.cdc.gov/niosh/topics/hexchrom/#review

OHSA News

OSHA New Resources Focus on Metal Scrap Recycling and Hazardous Waste Operations

Reprint submitted by Ariel Rosa, HTIS

Employers and employees in the metal scrap recycling industry stand to benefit from a new publication known as *Guidance for the Identification and Control of Safety and Health Hazards in Metal Scrap Recycling*. The document, produced by OSHA, can be found at http://www.osha.gov/Publications/OSHA3348-metal-scrap-recycling.pdf. The document offers ways to recognize and manage the hazards associated with exposure to various metals and processing chemicals and with related processes and equipment used in metal scrap recycling operations.

OSHA also revised its *Hazardous Waste Operations and Emergency Response*s booklet highlighting the requirements for hazardous waste operations and emergency response at uncontrolled hazardous waste sites and treatment, storage and disposal facilities. This booklet also discusses the steps an employer must take to protect the health and safety of employees in recycling environments.

Reference: http://www.osha.gov/Publications/OSHA3114/OSHA-3114-hazwoper.pdf

OSHA Publishes Regulatory Agenda

By Ariel Rosa, Environmental Protection Specialist, THIS

Federal agencies, including OSHA, published their semiannual regulatory agenda on November 24, 2008. The Regulatory Flexibility Act (under Section 610) requires agencies to periodically review rules ''which have or will have a significant economic impact upon a substantial number of small entities'' and to annually publish a list of the rules that will be reviewed during the succeeding 12 months. The purpose for the review is to determine whether the rule should be continued without change, amended, or rescinded.

Since the fall of 2007, the Federal Register no longer contains the complete agenda. Therefore all other entries to the Agenda may now be viewed in the online Unified Agenda at http://reginfo.gov. Click on Current and Past Agendas and Plans and How to Use Them and select Department of Labor from the pull-down menu to view OSHA entries.

Some of the topics on the current OSHA agenda include:

- Occupational exposure to chrystalline silica - peer review of health effects and risk assessment to be completed February 2009.
- Occupational exposure to beryllium- SBREFA Report Completed 01/23/08. Peer review of health effects and risk assessment to be completed March 2009.
- Methylene chloride— Review Section 610 ends May 2009.
- Occupational exposure to diacetyl and food flavorings containing diacetyl-complete SBREFA report February 2009.
- Bloodborne pathogens begin the Section 610 review in December 2008. Request for comments March 2009.
- Confined Spaces in Construction - Preventing Suffocation/Explosions in Confined Spaces - close record November 2008.
- Electric power transmission and distribution; electrical protective equipment—close record November 2008 -- analyze record February 2009.
- Cranes and Derricks -notice of proposed rulemaking comment period

ends December 8, 2008.

OSHA lists deadlines for 18 other pre-rules, proposed rules, and final rules, along with one long-term action. Included among those rules are Hazard Communication, General Working Conditions for Shipyard Employment, Explosives, Fall Protection, and Hearing Conservation for Construction Workers.

Reference: http://reginfo.gov

Other News

Web site looks at Defense-related Surface Coatings

By Tom McCarley, Chemist, HTIS

A new website is online which gathers information on surface coatings technologies with a goal towards developing anti-corrosion coatings for weapons systems which are alternatives to hexavalent chromium and other toxic surface coatings technologies. Known, as Asets Defense, the site is available at http://www.asetsdefense.org/ Assets Defense with one 's' in Asets stands for "Advanced Surface Engineering Technologies for a Sustainable Defense" Hard chrome plating is a 7 decades old tried and true process for laying down a hard, corrosion resistant coating on a metal surface. But the chromium plating process is beset by the health and environmental concerns of toxic hexavalent (+6 valence) chromium compounds such as chromates and dichromates. The Asets Defense site helps to collect and disseminate knowledge on chromium alternatives.

The web site contains:

- A hard chromium alternatives team (HCAT) members only area,
- Reports and Joint Test Protocols,
- Publications and Presentations,
- Aircraft systems being validated – include Landing gear, gas turbine engines, propeller hubs, hydraulics, helicopter rotor heads,
- Related web sites, and
- Contact information.

Reference: Asets Defense web site at http://www.asetsdefense.org/

Moving On

The following three individuals, **Eddie Alvarado, Thomas McCarley and Thomas McElwee**, who contributed immensely to the success of HTIS, and to the establishment of the HTIS Bulletin as a worthy source of environmental, health and safety information, have all retired.

HTIS Web Site

The new web site for the HTIS Bulletin is http://www.dscr.dla.mil/ExternalWeb/UserWeb/aviationengineering/HTIS/

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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
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