

# OPPT Accomplishments Report 2005-2006

EPA's Office of Pollution Prevention and Toxics (OPPT) works to ensure that chemicals manufactured, imported or used in the United States do not pose unreasonable risks to health or the environment. It also strives to promote the prevention of pollution before it occurs and to improve environmental stewardship practices in business and government operations. This report describes OPPT's progress in accomplishing these goals, which are key components of EPA's overall "Strategic Plan." Indeed, every accomplishment is a part of a larger effort to meet one of the agency's specific strategic objectives.



**Introduction** - Read how OPPT's mission and legislative authorities provide a framework for success.



**Reviewing New Chemicals** - Learn about the New Chemicals Program, one of the Agency's premier risk assessment and management programs. Find out about new biotechnology programs, enzyme nomenclature, and international efforts.



**Managing Existing Chemicals** - Investigate how the Existing Chemicals Program regulates chemicals in commerce. Find out more about inventory update reporting, the Toxic Substances Control Act, global chemical safety, and more.



**Reducing Risks from Specific Existing Chemicals** - See how OPPT protects against specific priority chemicals - lead, asbestos, polychlorinated biphenyls (PCBs), and mercury. OPPT develops regulations and policies designed to reduce risks to human health and the environment from these National Program Chemicals.



**Working to Prevent Pollution** - Read how OPPT's innovative, environmental stewardship programs encourage pollution prevention as both a critical environmental strategy and a sustainable business practice. The programs include Green Chemistry, Design for the Environment, and the Resource Conservation Challenge, to name a few.



**Cross-Cutting Programs** - Use tools and models developed by OPPT to support and enhance multiple program areas. OPPT's cross-cutting accomplishments encompass a range of activities - assisting with IT support, program assessment, state and tribal partnerships, and risk assessment tools.

*Note: As of the publication of this report, external links are current and accurate, and are offered by way of example only for reference purposes. The EPA is not responsible for content of non-EPA links.*

# Introduction - What We Do



Chemicals are in just about everything we use. Every day we are surrounded by chemicals - in fact, the way we live would be impossible without them. Yet, some chemicals can be potentially dangerous to our health and the environment. It's the job of EPA's

Office of Pollution Prevention and Toxics (OPPT) to ensure that commercial and industrial chemicals manufactured, imported, or used in the United States do not pose any unreasonable risks to human health or the environment. Promoting the prevention of pollution before it occurs is central to our work.

## Legislative Authorities

Tens of thousands of chemicals are manufactured, imported, or used in the United States annually. Many new chemicals are being developed each year, and emerging technologies such as nanotechnology and biotechnology are changing the types of materials used in commerce and in the environment. Under the Toxic Substances Control Act (TSCA) of 1976, OPPT establishes reporting, record-keeping, testing, and control-related requirements for new and existing chemicals. Read about OPPT programs' accomplishments for new, existing, and national program chemicals. Under the Pollution Prevention Act (PPA) of 1990, the office works to reduce pollution before it occurs through innovative changes in production, operation, and use of raw materials. Read about our pollution prevention programs' accomplishments.

## Two Different Roles

One of the office's major roles is to serve as a gatekeeper/guardian, using its traditional "command and control," congressionally-mandated regulatory authorities to keep potentially risky new chemicals out of the market while assessing and managing the potential risks of existing chemicals. Read about OPPT programs' accomplishments for new, existing, and national program chemicals.

The organization's other key role is to promote environmental stewardship and sustainability. We do this through collaborative programs with our stakeholders and educational initiatives. Working to eliminate sources of pollution, we create tools and make information available to enable industry and the public to make wise chemical choices. Read about our accomplishments in pollution prevention and cross-cutting programs.

### Strategic Plan

Our work fulfills two of the five major goals outlined by EPA in its 2003 - 2008 "Strategic Plan"

(<http://www.epa.gov/ocfo/plan/2003sp.pdf>):\*

- Through 2008, prevent and reduce chemical and biological organism risks to humans, communities and ecosystems, and (Goal 4; Objective 1; Sub-objective 3)
- Through 2008, reduce pollution and improve environmental stewardship practices in business and government operations and by the public by adopting more efficient, sustainable, and protective policies, practices, materials and technologies. (Goal 5; Objective 2; Sub-objective 2)

\* EPA submitted the Agency's 2006 - 2011 Strategic Plan

(<http://www.epa.gov/cfo/plan/plan.htm>) to Congress on September 29, 2006 as required under the Government Performance and Results Act (GPRA) of 1993 (<http://www.whitehouse.gov/omb/mgmt-gpra/gplaw2m.html>).

OPPT works in both roles internationally to confront chemical risks that cross national boundaries.

This report highlights accomplishments achieved during 2005-2006 in key areas of OPPT's programs that relate to the major aspects of our mission. For example:

- Making High Production Volume (HPV) chemical data, including basic hazard information, publicly available through the newly-created web-based HPV Information System (HPVIS) (<http://www.epa.gov/hpvis/>).
- Initiating the PFOA Stewardship Program, in which eight companies committed voluntarily to reduce emissions and product content of perfluorooctanoic acid (PFOA), a persistent and toxic man-made chemical, and of related chemicals by 95 percent no later than 2010, and to work toward elimination by 2015.
- Proposing work-practice standards and training requirements for those engaged in renovation, repair and painting activities that disturb lead-based paint, with the aim of reducing lead exposure.
- Developing the "Mercury Roadmap" with other EPA offices that describes the Agency's progress and major ongoing and planned actions to address health and environmental risks associated with mercury.

# Reviewing New Chemicals



Under the Toxic Substances Control Act (TSCA), EPA uses its traditional regulatory authorities to control or keep potentially hazardous new chemicals out of the market. EPA's New Chemicals Program (NCP)

(<http://www.epa.gov/oppt/newchemicals/index.htm>) is one of the Agency's premier risk management programs, and serves a key gatekeeper function.

## Strategic Plan

Goal Four of EPA's Strategic Plan "assigns the program the responsibility to prevent the introduction of new chemicals or organisms into commerce which pose unreasonable risks to workers, consumers, or the environment, through review of Pre-Manufacture Notifications (PMNs)" and regulate as appropriate.

Specifically, under TSCA Section 5, EPA must be given notice before a new chemical substance can be manufactured or imported into the United States. This pre-manufacture notice (PMN) must be submitted at least 90 days prior to the manufacture or import of the chemical.

The New Chemicals Program reviews submissions to determine if any of the chemicals warrant prohibiting or limiting their manufacture, processing, or use. Because many PMNs include little or no toxicity or fate data, the program uses several risk screening approaches to facilitate assessment in the absence of specific data. This enables rapid evaluation of potential risks and making risk-management decisions for the new chemicals within the 90-day timeframe prescribed by TSCA.

More information on the New Chemicals Program (<http://www.epa.gov/oppt/newchemicals/>).

## Accomplishments

- A total of 1,227 valid Section 5 notices were received in 2005 and 1,187 were received in 2006. The majority of the submissions were pre-manufacture notifications (PMNs) - 772 in 2005 and 752 in 2006. The next largest group was low-volume exemptions - 444 in 2005 and 419 in 2006.
- To provide added protections against potential risk, OPPT proposed to amend the Polymer Exemption Rule to exclude from eligibility polymers containing, as an integral part of their composition (except as impurities), certain perfluoroalkyl groups consisting of a CF<sub>3</sub> or longer chain length. The proposed rule was published in the Federal Register March 7, 2006 (<http://www.epa.gov/fedrgstr/EPA-TOX/2006/March/Day-07/t2152.htm>). Read guidance materials about the Polymer Exemption Proposed Rule Amendment (<http://www.epa.gov/opptintr/newchemicals/pubs/guideman.htm>). This action is related to work on perfluorooctanoic acid (PFOA) described later in this report.
- To encourage "greener chemistry," NCP developed a program to recognize innovative new chemical submissions that are inherently safer than those currently in use and that reduce sources of pollution. The program is

## Strategic Plan

Goal Four of EPA's Strategic Plan calls for the Agency to train chemical developers to use EPA's risk screening tools early in research and development. EPA's target is to receive at least 40 percent pre-screened PMNs per year.

especially interested in promoting chemistries that substitute for existing chemicals that pose greater risks. NCP recognized three companies in 2005 (<http://www.epa.gov/oppt/newchems/pubs/p2awards-archive/p2-awards-2005/p2-2005.htm>) and four in 2006 (<http://www.epa.gov/oppt/newchems/pubs/p2.htm>) that provided new, less polluting, innovative chemistries and processes. More information on the NCP Recognition Program (<http://www.epa.gov/oppt/newchems/pubs/p2.htm>).

- An innovative approach is encouraging companies to "pre-screen" their chemical submissions: Those who submit low-hazard, low-risk new chemical notices may receive an expedited review, if they have pre-screened the chemical for hazard and risk concerns using the Sustainable Futures (SF) models (<http://www.epa.gov/oppt/newchems/pubs/sustainablefutures.htm>).
- In FY 2005, EPA's New Chemicals Program saw 109 PMNs self-assessed using Sustainable Futures models, which accounted for 15 percent of the PMN submissions. In FY 2006, that number rose slightly to 110 which was 17 percent of the PMNs submitted that fiscal year.

### ***New Biotechnology Products***

The New Chemicals Program (NCP) is also home to the Toxic Substances Control Act (TSCA) Biotechnology Program. This program is responsible for the safe commercial introduction of new microorganisms with industrial applications, such as bioremediation, or the production of specialty enzymes.

EPA published final rules on Microbial Products of Biotechnology in 1997 that fully implemented its screening program for new microorganisms under Section 5 of TSCA. These regulations create a reporting vehicle specifically designed for microorganisms, the Microbial Commercial Activity Notice (MCAN). EPA reviews the submission in order to determine whether the microorganism may present an unreasonable risk to human health or the environment.

The rules also address microorganisms used in research and development for commercial purposes and create a vehicle for reporting on the testing of new microorganisms in the environment, a TSCA Experimental Release Application (TERA). In recognition of the needs of researchers, TERA is designed to provide a high measure of flexibility and a shorter review period.

Since 1997, EPA has received 17 notifications of commercial intent and 19 applications for experimental field trials. A multi-disciplinary team of scientists conducts a health and environmental review of each of these submissions, working closely at times with the submitter to ensure that the microorganisms do not present a risk to human health or the environment.

### **Accomplishments**

- In 2005, EPA received two Notifications of Commercial Intent and one application for experimental field trials and issued three Certifications of Exemption for closed systems, which do not release chemicals into the environment.

- In 2006, EPA received one Microbial Commercial Activity Notice and three Environmental Release Applications for experimental field trials. EPA also granted one Test Marketing Exemption and three Certifications of Exemption for closed systems.

### ***TSCA Inventory Nomenclature and Reporting for Enzymes***

TSCA requires EPA to compile, keep current and publish an inventory of chemical substances that are manufactured, imported or processed in the United States. In order to support EPA's TSCA programs and accurately inform the public, the TSCA Inventory must be continuously and accurately updated as new chemicals enter U.S. commerce.

OPPT determined in the mid- to late-1980s that existing reporting requirements for enzymes were inadequate for uniquely and unambiguously defining and listing these substances on the TSCA Inventory. The enzymes already on the TSCA Inventory (approximately 150) are actually categories of enzymes and not individual substances. In 1989, OPPT established an interim enzyme policy and began issuing "Company X" letters to respond to Notices of Bona Fide Intent to Manufacture (<http://www.epa.gov/oppt/newchems/pubs/findsubs.htm>) which prompt for the status of the TSCA Inventory listing of the substance intended for commerce. The "Company X" letter advised that EPA may modify how enzymes are listed in the future and encouraged continued submission of bona fide inquiries on all "newly developed" enzymes.

On November 15, 2004, EPA published an advanced notice of proposed rulemaking (ANPR) announcing the Agency's intention to consider new reporting requirements for naming and listing enzymes and proteins on the TSCA Inventory (69 FR 65565). The ANPR outlined four identification elements that EPA currently believes are appropriate for use in developing unique and unambiguous names for proteinaceous enzymes: function, sequence, source and processing.

### **Accomplishments**

- In January 2005, EPA convened a panel of experts under the auspices of the FIFRA Scientific Advisory Panel (SAP) to address scientific issues associated with developing an identification system for comprehensively listing and distinguishing among enzymes on the TSCA Inventory.
- EPA held a public meeting of the SAP on May 3-4, 2005. The SAP concluded that "each of four elements (function, sequence, source and processing) has merit for cataloging and distinguishing among enzymes and that the Agency's proposed nomenclature system is useful and should be retained." The panel also noted that "...improvements in identification and classification were needed and reported that in many instances information from one or more of the proposed [elements], when added to a functional description, could materially aid in developing and maintaining an improved classification scheme without overly burdening either industry or the government for collecting and categorizing such information."
- Since January 2006, EPA has been drafting a proposed rule and a technical guidance document that is consistent with the SAP findings and EPA's statutory obligations.

More information on the FIFRA SAP public meeting on Enzyme Nomenclature (<http://www.epa.gov/scipoly/sap/meetings/2005/index.htm> - may) (background paper, agenda, minutes).

The ANPR (OPPT-2003-0058) and the FIFRA SAP public meeting announcement (OPP-2005-0060) can be found at <http://www.regulations.gov>. More information on FIFRA SAP (<http://www.epa.gov/scipoly/sap/>).

## ***International Efforts***

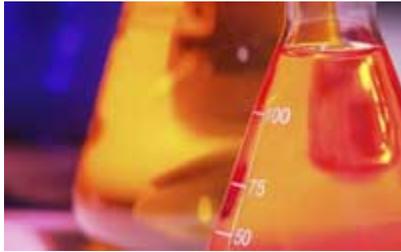
OPPT has continued to be involved in international chemical risk assessment and management by working with international organizations and through collaborative efforts with countries and stakeholders. We provide leadership to help other governments, industry and the public make informed chemical decisions. Our sharing and receiving chemical data and assessments helps leverage scarce resources here and in other countries.

OPPT scientists participate in the Organization for Economic Cooperation and Development (OECD) Test Guidelines Program to develop protocols for studies to assess physicochemical properties, environmental fate, ecotoxicity, and health effects endpoints. The OECD is an international organization consisting of 30 industrialized countries in Europe, North America, Asia, and the Pacific. A foundation of the OECD chemicals program is the Mutual Acceptance of Data (MAD) agreement among OECD countries to accept for review studies generated in accordance with OECD Test Guidelines and Principles of Good Laboratory Practice regardless of where the study is performed in or among OECD countries.

## **Accomplishments**

- Sharing U.S. experience with other countries is a key objective. To that end, EPA, in conjunction with Department of Commerce and U.S. industry stakeholders, held a series of four digital videoconferences (DVCs) on chemical risk management to share information with China's State Environmental Protection Administration. Most recently, these DVCs have offered unique insights and practical applications offered by technical and regulatory experts from various disciplines, based on their experiences in managing chemicals in the United States.
- OPPT continued to participate in the work of the OECD New Chemicals Task Force. This work includes further development of a database to generate a consolidated new chemicals notification form that integrates the reporting elements from all OECD countries. It also includes further development of OECD new chemicals working definitions, exemptions and reduced notification requirements.
- OPPT participated with other governments in a parallel review process of three new chemical submissions, two in the fall of 2005, and one in the winter of 2006, to explore the concept of Mutual Acceptance of Notifications among OECD countries. This process was created in response to concerns over the need to better align new chemicals systems in the global market.

# Managing Existing Chemicals



Working under authorities and requirements of the Toxic Substances Control Act (TSCA), EPA's Existing Chemicals Program gathers and reviews data, assesses risk and regulates chemicals in commerce. For example, under TSCA, EPA can require companies (manufacturers, importers and processors) to conduct testing on selected chemicals for which data are needed to evaluate potential health or environmental hazards. Such data development

requirements may be established through a test rule (regulation) or through an Enforceable Consent Agreement (ECA), which is negotiated among interested parties and generally provides an alternative to formal rulemaking.

Under TSCA Section 5, EPA may promulgate a Significant New Use Rule (SNUR), when it identifies a "significant new use" that could result in exposures to, or releases of, a substance of concern. Under SNURs, subject entities must give EPA a 90-day advance notice of their intent to manufacture, import, or process a chemical for a significant new use. The required notice provides EPA with the opportunity to evaluate intended new uses and associated activities, and if necessary, prohibit or limit those uses and activities before they occur.

TSCA gives EPA responsibility to maintain the TSCA Inventory containing more than 82,000 chemicals. As new chemicals are manufactured, they are placed on the list.

Strategic Plan
A target in Goal Four of EPA's Strategic Plan, through 2008, is to reduce relative risks to chronic human health [issues] associated with environmental releases of industrial chemicals in commerce by 7 percent from 2001 levels as measured by EPA's "Risk Screening Environmental Indicators" model.

OPPT's work to ensure the safety of existing chemicals has focused on making basic hazard information available to the public on the approximately 2,200 High Production Volume (HPV) chemicals for which manufacturers and importers pledged to provide information. HPV chemicals are produced and/or imported in annual volumes of 1 million pounds or greater per year. The HPV Challenge Program (<http://www.epa.gov/hpv/>) has made chemical data and assessments accessible to the public to help industry and citizens make wise chemical choices. The information will provide input for future efforts to evaluate potential risk from exposures to these chemicals.

## Accomplishments

- EPA issued a proposed SNUR in late December 2004 to protect the public from exposure to certain polybrominated diphenylethers (PBDEs). These chemicals are used in flame retardant products in furniture foam (pentaBDE) and plastics for personal computers and small appliances (octaBDE). EPA had concerns regarding the environmental fate and the exposure pathways that lead to the presence of PBDE in wildlife and people. EPA is also concerned about the persistence, bioaccumulation and toxicity (PBT) potential of pentaBDE and octaBDE and other chemicals similar to PBDEs that comprise these products and that are also subject to this rule. Great Lakes Chemical Corporation, formerly the sole manufacturer of the commercial pentaBDE and octaBDE products in the United States, voluntarily discontinued their

manufacture for all uses by December 31, 2004. Work in 2005 included evaluating public comments on the proposed SNUR and developing a final rule. EPA issued the final rule on June 13, 2006.

- In November 2005, OPPT published a final SNUR for four glycol ethers: 2-ethoxyethanol; 2-ethoxyethanol acetate; 2-methoxyethanol; and 2-methoxyethanol acetate. The four chemicals are in the glycol ether family, which are used as solvents and as ingredients in cleaning compounds, liquid soaps and cosmetics. The significant new uses include domestic use in a consumer product and, for one of the glycol ethers, manufacture or import at levels greater than 10,000 pounds.
- In March 2006, EPA issued a proposed SNUR for 183 perfluoroalkyl sulfonate (PFAS) chemicals that were not included in prior perfluorooctyl sulfonate (PFOS)-related SNURs. Public comments resulted in information about the ongoing use of some PFAS chemicals in the surface-finishing industry. The Agency began evaluating the comments to determine the approach that should be taken in the final SNUR.
- On July 11, 2006, EPA issued a proposed SNUR for elemental mercury used in convenience light switches, anti-lock braking system (ABS) switches, and active-ride-control-system switches in certain motor vehicles. The comment period ended in September 2006, and EPA is drafting the final rule.

For related information, visit Chemical Information Collection and Data Development (<http://www.epa.gov/opptintr/chemtest/index.htm>) and the HPV Challenge Program (<http://www.epa.gov/hpv/>).

## ***Inventory Update Reporting***

The aim of the Inventory Update Reporting (IUR) program is to collect the highest quality screening-level, exposure-related information and to make that information available to EPA and the public.

Chemical manufacturing, processing and use information is reported to EPA under the IUR rule, amended in 2003 and issued under TSCA. Manufacturers (including importers) of about 9,000 chemicals (of the more than 82,000 chemicals listed on the TSCA Chemical Substances Inventory) report basic manufacturing information for chemicals produced in volumes of 25,000 pounds or more at a site. For chemicals produced or imported in volumes of 300,000 pounds or more at a site, manufacturers also report processing and use information.

The most comprehensive source of basic screening-level exposure-related information, the IUR data are used to support risk screening, assessment, priority setting and management activities. Since major amendments to the IUR were published in 2003 (<http://www.epa.gov/fedrgstr/EPA-TOX/2003/January/Day-07/t32909.pdf>), EPA has implemented the changes and begun the 2006 IUR collection.

## **Accomplishments**

- To facilitate industry reporting, EPA developed guidance materials, including an instruction manual, two question and answer documents and a case studies document. The Agency also made further changes to the IUR by publishing the IUR

Revisions final rule (<http://www.epa.gov/fedrgstr/EPA-TOX/2005/December/Day-19/t24196.pdf>).

- Outreach efforts included one-day workshops held at locations throughout the United States, presentations at various industry meetings and communication with industry.
- EPA has made it easier for business to report. EPA's new software program - eIUR - allows IUR submitters to more easily complete and electronically file the IUR reporting form. For the first time, IUR submitters are able to submit their reports through the Internet, using EPA's Central Data Exchange (CDX). Data from the 2006 IUR will be collected and disseminated through a new information management system.

This automated workflow and document management system will facilitate receipt, tracking, logging and processing of submission documents using ECMS-Electronic Content Management System. The use of this new workflow tool will create data and time efficiencies for OPPT and industry submitters. As with hard-copy and CD-ROM submissions, EPA built in protections throughout the process to assure the security of information claimed by companies as Confidential Business Information (CBI). Resource savings will be realized as we move from a paper approach to this electronic approach for handling IUR submissions.

- The 2003 Amendments also instituted a partial exemption and petition process for chemicals for which there is low current interest in IUR processing and use information. EPA has responded to 71 petitions to partially exempt about 384 chemicals. Of those, the petitions for 15 chemicals were granted, resulting in the publication of three direct final rules to add the chemicals to the partial exemption list.
- EPA redesigned the IUR Web site to communicate information about reporting under the IUR, the status of petitions, and data submitted through past IUR collections.

More information on the Inventory Update Reporting program (<http://www.epa.gov/oppt/iur>).

### ***New Nanotechnology Products***

EPA is considering how best to evaluate and, where appropriate, manage the risks associated with engineered nanoscale materials (NMs). Nanoscale materials are chemical substances at dimensions of roughly 1 to 100 nanometers, where unique phenomena enable novel applications. A nanometer is about one ten-thousandth the diameter of a human hair.

Nanoscale materials are "chemical substances" as defined under TSCA and are subject to the law unless otherwise excluded. Thus premanufacture notifications (PMNs) are required under TSCA prior to manufacturing a NM "new" chemical substance. To assist potential submitters, EPA is developing a general approach to the TSCA inventory status of nanoscale substances in making the distinction between "new" and "existing" chemicals that are nanoscale materials. EPA is also developing an umbrella approach for evaluating both new and existing chemicals in NMs.

## Accomplishments

- A number of new chemical submissions for NMs have been reviewed or are in the review process. In addition to the typical new chemical review, OPPT reviews these NMs for any special concerns that may be a result of their nano-size and possible unique properties. OPPT will issue TSCA section 5(e) orders and significant new use rules (SNURs) on nano-sized material, where appropriate, to help ensure that workers, the public and the environment are protected from unreasonable risks. To facilitate and expedite the review and decision-making process, potential submitters are being strongly encouraged to use the pre-notice consultation process. This process allows potential PMN submitters to interact with EPA before submitting a notice to the Agency.
- In order to better understand the views of stakeholders, OPPT held a public meeting on a potential stewardship program for NMs in June 2005. It subsequently invited the National Pollution Prevention and Toxics Advisory Committee (NPPTAC) to provide additional input. NPPTAC is the federal advisory committee established in 2003 to give OPPT informed stakeholder and public feedback on its policies and strategies. A NPPTAC "Overview Document on Nanoscale Materials" (<http://www.epa.gov/oppt/npptac/pubs/nanowgovoverviewdocument20051125.pdf>) was forwarded to EPA in November 2005.
- In May 2006 OPPT formed an Agency-wide workgroup to develop a Nanoscale Materials Stewardship Program, and on October 18, 2006, EPA launched a collaborative process to design a Nanoscale Materials Stewardship Program under TSCA, to complement and support its efforts on new and existing nanoscale materials. On October 19-20, 2006, OPPT held a public scientific peer consultation meeting on risk management practices for nanoscale materials in the workplace. Peer panel participants included experts from the National Institute for Occupational Safety and Health, the Occupational Safety and Health Administration, industry, NGOs, and academia.
- Components of the Stewardship Program could include:
  - Assembling existing data and information from manufacturers and processors of existing chemical nanoscale materials;
  - Encouraging the development of test data needed to provide a firm scientific foundation for future work and regulatory/policy decisions; and
  - Identifying and encouraging use of a basic set of risk management practices in developing and commercializing nanoscale materials.
- EPA will be working collaboratively with stakeholders to develop and implement the Nanoscale Materials Stewardship Program, and will announce a variety of opportunities for public input. The Agency will use the information resulting from the stewardship program to support the further development of its TSCA program for nanoscale materials, including any regulatory actions that may be needed to protect human health and the environment.
- The carbon nanotube Low Volume Exemption, L-04-0488, was converted into a Low Release and Exposure Exemption (LoREX) under 40 CFR 723.50(c)(2) September 16, 2005. The low volume exemption met the LoREX criteria by demonstrating that the new chemical substance will yield no exposures to the general public, no releases to water, no releases to air, and all worker exposure will be adequately controlled

through use of engineering controls, work practices, and/or personal protective equipment. The submitting company is bound to the terms of the submission which include using specific engineering controls and personal protective equipment which they have claimed as confidential business information.

## ***Managing Potential PFOA Risks***

Perfluorooctanoic Acid (PFOA) is a persistent, man-made chemical that animal studies have shown can cause systemic and developmental toxicity. It has been found in human blood and it remains in the body for years. OPPT began an investigation of PFOA in 2000 to determine what risk it may present to humans and the environment and what, if any, action may be needed to control that risk.

In 2003, OPPT released a preliminary draft risk assessment and initiated an enforceable consent agreement (ECA) process to develop information on the sources of PFOA in the environment and the pathways leading to human and environmental exposures.

## **Accomplishments**

- EPA brought civil administrative actions against DuPont in 2004 and 2005 for failing to report information concerning PFOA to the Agency as required by Section 8(e) of TSCA. On December 14, 2005, EPA forwarded to the Environmental Appeals Board a settlement with DuPont for the largest civil administrative penalty EPA has ever obtained under any federal environmental statute. The settlement package requires DuPont to pay \$10.25 million in civil penalties and perform Supplemental Environmental Projects (<http://www.epa.gov/compliance/civil/seps/index.html>) worth \$6.25 million.
- OPPT worked with EPA Regions 3 and 5, the Office of Water, and the Office of Enforcement and Compliance Assurance to develop an interim site-specific action level for PFOA in drinking water in the vicinity of the DuPont Washington Works facility (Washington, WV), which was implemented through a Consent Order signed with DuPont in November 2006.
- OPPT is taking action to help minimize the potential impact of PFOA on the environment. In January 2006, EPA Administrator Stephen Johnson initiated the PFOA Stewardship Program, in which the eight major companies in the industry committed voluntarily to reduce facility emissions and product content of PFOA and related chemicals on a global basis by 95 percent no later than 2010, and to work toward eliminating emissions and product content of these chemicals by 2015. Companies submitted their baseline year emissions and product

### **Working with Enforcement**

Actions taken in connection with PFOA are a good example of how OPPT works hand-in-hand with EPA's Office of Enforcement and Compliance Assurance. Each year a number of enforcement actions are taken under TSCA. A significant one in the 2005- 2006 timeframe was the \$1.5 million settlement reached in April 2006 between EPA and the 3M Company. 3M agreed to pay the penalty for 244 separate counts under TSCA. In connection with an audit of 28 separate business units, the company voluntarily disclosed and corrected a number of violations, including failures to notify EPA on new chemicals, late reporting on substantial-risk information, and other reporting violations. During the course of the audit, 3M produced valuable, previously unreported information that will help the scientific community to better understand the presence of toxic substances in the environment.

content data (<http://www.epa.gov/oppt/pfoa/pubs/sumrpt.htm>) in March 2007, and will submit annual progress reports.

- In 2005, OPPT submitted a draft risk assessment (<http://www.epa.gov/oppt/pfoa/pubs/pfoarisk.htm>) to the Science Advisory Board (SAB) (<http://www.epa.gov/sab/>) for public peer review and recommendations for further work. OPPT also entered into two ECAs with industry in July 2005 to determine whether incineration of fluoropolymers and telomers could be a source of PFOA.
- In November 2005, OPPT entered into a Memorandum of Understanding (MOU) with DuPont, similar to the MOU signed with 3M Company in 2004, for environmental monitoring at a fluoropolymer facility.
- OPPT has worked with EPA's Office of Research and Development (ORD) to establish a research program to address the toxicological uncertainties identified by the SAB and to establish a program of telomer biodegradation testing to determine whether telomeric polymers can break down to PFOA. ORD will also be conducting testing to determine whether fluoropolymer and telomer-treated articles can release PFOA as they age.
- OPPT has made the international community aware of PFOA-related issues. Under the auspices of the Organization for Economic Cooperation and Development (OECD), the United States and Germany have developed a draft, initial hazard assessment of PFOA. OPPT also participated in the creation of an OECD workshop on PFOA and related chemicals held in Sweden in November 2006.

More information on the Agency's activities concerning PFOA and related chemicals (<http://www.epa.gov/oppt/pfoa/>).

### ***Using TSCA Section 8(e)***

Section 8(e) of the Toxic Substances Control Act (TSCA) states that, "Any person who manufactures, processes or distributes in commerce a chemical substance or mixture and who obtains information which reasonably supports the conclusion that such substance or mixture presents a substantial risk of injury to health or the environment shall immediately inform the [EPA] Administrator of such information unless such person has actual knowledge that the Administrator has been adequately informed of such information."

OPPT screens all of these TSCA §8(e) submissions, as well as voluntary "For Your Information" (FYI) submissions, to identify chemicals for further assessment or testing, to refer information of interest to other regulatory authorities and stakeholders, and to follow-up with submitters regarding risk management actions. FYI submissions (<http://www.epa.gov/oppt/tsca8e/pubs/basicinformation.htm - fyi>) are not required by law, but are submitted by industry and public interest groups for a variety of reasons.

TSCA §8(e) and FYI data are used to support hazard and risk assessments of commercial chemicals and to estimate the effects of closely related chemicals. TSCA §8(e) submissions also provide chemical hazard and exposure information to the public to aid in risk assessment and risk management, promote pollution prevention through improved understanding of comparative toxicities and can be instrumental in avoiding unnecessary testing. New TSCA §8(e) submissions are available to the public through EPA's TSCA §8(e) Web page (<http://www.epa.gov/oppt/tsca8e/>).

TSCA §8(e) and FYI submissions are entered into the TSCA Test Submissions (TSCATS) database (<http://yosemite.epa.gov/oppts/epatscat8.nsf/ReportSearch?OpenForm>), a submission and document tracking system. EPA continues to provide TSCATS information to the National Library of Medicine for inclusion in the Toxline database and to others to maintain various databases.

## **Accomplishments**

- There were 653 initial and 444 supplemental TSCA §8(e) submissions for the period of January 2005 through August 2006. This unusually high number was due to one large industry self-audit. During the same period, EPA received 31 voluntary FYI submissions. All TSCA §8(e) and FYI submissions received during this time received initial screening evaluations.
- During the same period, OPPT sent 85 letters to TSCA §8(e) and FYI submitters requesting additional information to complete the initial screen and determine the need for further assessment. These requests were primarily for exposure-related information on commercial chemicals or products, or cases for which commercial status has not been provided to EPA.
- During the same period, OPPT prepared 11 chemical summaries of exposure, toxicity, environmental fate and existing risk management status on chemicals identified for further assessment in the initial screen. Also prepared were 105 robust summaries of TSCA §8(e) and FYI studies on brominated flame retardants. OPPT prepared eight evaluations of industry TSCA §8(e) studies to determine the need for further assessment and/or to follow-up with TSCA §8(e) submitters.
- There were more than 220 TSCA §8(e) information referrals, primarily to the High Production Volume (HPV) Challenge Program, Screening Information Data Set (SIDS) and PMN programs, as well as to contacts in various programs within and outside EPA on such activities as PFOA, brominated flame retardants, pesticide inerts, dioxins, fibers, chlorofluorocarbons and worker exposure issues.
- In addition to these targeted referrals, OPPT sends monthly TSCA §8(e) summary tables to all persons within and outside EPA requesting them via e-mail and posts these tabular summaries on the TSCA §8(e) Web page (<http://www.epa.gov/oppt/tsca8e/index.htm>).
- OPPT coordinated with other EPA offices to develop 38 new "Questions and Answers" pertaining to EPA's TSCA §8(e) reporting guidance based on the June 3, 2003 republication of the TSCA Section 8(e) Policy Statement and Guidance (68FR33137). These 38 questions along with three additional questions have been posted to the TSCA §8(e) Web page.
- In December 2006 OPPT redesigned the TSCA §8(e) website to better serve stakeholders.

More information on TSCA §8(e) (<http://www.epa.gov/oppt/tsca8e/>).

## ***TSCA 12(b) Export Notifications***

The Toxic Substances Control Act (TSCA) Section 12(b) requires EPA to notify importing countries of the export or the intended export of industrial chemicals or mixtures that are

subject to certain regulatory actions under U.S. law. Approximately 2,000 chemicals come under this requirement.

As a member of the Organization for Economic Cooperation and Development (OECD), the United States participates in a Complementary Information Exchange Procedure intended to help countries coordinate their chemical control activities.

## Accomplishments

- For the period of January 2005 through March 2006, 115 countries were sent export notifications.
- On February 9, 2006 (71 FR 6733) EPA proposed amendments to the TSCA Section 12(b) export notification regulations (<http://www.epa.gov/fedrgstr/EPA-TOX/2006/February/Day-09/t1797.htm>). The final amendments to the regulations (<http://www.epa.gov/fedrgstr/EPA-TOX/2006/November/Day-14/t19182.htm>) were promulgated on November 14, 2006 (71 FR 66234) and a technical correction notice was issued on November 28, 2006 (71 FR 68750) (<http://www.epa.gov/fedrgstr/EPA-TOX/2006/November/Day-28/t20148.htm>). These amendments:
  - focus importing governments' attention on chemicals for which EPA has made an "unreasonable risk" finding under TSCA;
  - reduce overall burden on exporters and the Agency. Amendments include a change in the current annual notification requirement to a one-time requirement for exporters of certain chemicals, and a corresponding one-time notification of foreign governments by EPA.

The Agency also issued de minimus concentration levels below which notification would not be required, as well as other minor amendments that update the EPA addresses to which export notifications must be sent and that clarify exporters' and EPA's obligations.

## HPV Program

The purpose of the High Production Volume (HPV) Challenge Program is to ensure that basic health and environmental fate data on HPV chemicals are made available to the public. HPV chemicals are considered to be those manufactured or imported in amounts equal to or greater than 1 million pounds per year. A basic premise of the program is that the public has a right to know about the hazards associated with chemicals in their environment and that this information helps them to make wise choices in selecting which chemicals or consumer products to use.

Strategic Plan
Under Goal Four of EPA's Strategic Plan, EPA has committed to eliminating or effectively managing risks identified as priority concerns through the HPV Program.

Since the program's inception in 1998, industry chemical manufacturers and importers have participated in the HPV Challenge Program by sponsoring more than 2,200 chemicals. Sponsorship involves a commitment to develop data summaries of relevant existing information and to conduct testing to fill any data gaps. More than 350 companies and 100 consortia have sponsored 1,387 chemicals directly in the program, and an additional 861 chemicals have been sponsored indirectly in an international counterpart to the HPV

Challenge Program: the International Council of Chemical Associations (ICCA) HPV Initiative.

## Accomplishments

- As of December 2006, 407 test plans and data summary submissions have been submitted to the Agency, covering 1,352 (97 percent) of the 1,387 chemicals sponsored directly in the HPV Challenge Program.
- The program has resulted in the submission of a large amount of existing data that included approximately 6,500 published studies and 8,100 previously unpublished studies. This large collection of existing data meant that less new testing had to be conducted which lowered laboratory costs and resulted in fewer animal studies. EPA is using the data collected on HPV chemicals to set priorities for initial EPA assessment.
- The National Pollution Prevention and Toxics Advisory Committee (NPPTAC) recommended that OPPT implement a two-tier approach for the screening and review of HPV chemical data. In Tier I, OPPT conducts a screening process to prioritize the order in which chemical data submissions are reviewed. In Tier II, OPPT reviews the data for quality and to determine any hazards associated with the HPV chemicals. (NPPTAC is a federal advisory committee that was established in 2003 to give OPPT informed stakeholder and public feedback on its policies and strategies.)
- In an effort to increase accessibility to HPV data, OPPT launched the HPV Information System (HPVIS) Web database in April 2006 to allow users to easily and comprehensively search for specific HPV chemical property data. For more information on HPVIS, read the HPVIS section of this report and visit HPVIS (<http://www.epa.gov/hpvis>).
- OPPT is continuing to review new data and enter it into HPVIS.
- As the HPVIS data input process nears completion, OPPT is beginning to apply the two-tiered screening and review process recommended by NPPTAC (see box).
- The Agency is currently addressing chemicals that have been sponsored but for which test plans or completed data submissions have not been submitted to EPA.
- To address "orphan" chemicals that were eligible for sponsorship but were not sponsored, the final first HPV test rule concerning 17 chemicals (<http://www.epa.gov/fedrgstr/EPA-TOX/2006/March/Day-16/t2483.htm>) was published on March 16, 2006. EPA also anticipates proposing a second HPV test rule. Data are also being received from industry for an additional 243 orphan chemicals covered under

### Two Tier Approach: Screening, Reviewing

EPA is implementing a two-tier approach for screening and reviewing the HPV chemical data. Tier I is an automated process in which key endpoints data are screened against predetermined criteria derived generally from the Globally Harmonized Systems (GHS) (<http://www.epa.gov/oppfead1/international/globalharmon.htm>) criteria to group chemicals/categories by priority level for subsequent OPPT review. Tier II involves a more in-depth review of the data for quality and completeness and develops a screening-level hazard assessment based on the Organization for Economic Cooperation and Development Screening Information Data Set (SIDS) and non-SIDS hazard data provided by the sponsors. Tier II can include any additional information available to OPPT.

the TSCA 8(a) Preliminary Assessment Information Reporting and TSCA 8(d) Health and Safety Data Reporting Rules (<http://www.epa.gov/fedrgstr/EPA-TOX/2006/August/Day-16/t13479.htm>) which were published in August.

- A report, Status and Future Directions of the High Production Volume Challenge Program (<http://www.epa.gov/hpv/pubs/general/hpvreport.pdf>), was issued by EPA in November 2004.

More information on the HPV Challenge Program (<http://www.epa.gov/hpv>) and on HPVIS (<http://www.epa.gov/hpvis>).

### ***HPVIS - Making HPV Available Online***

The High Production Volume Information System (HPVIS) was developed to assist in the collection, review and reporting of High Production Volume chemicals. The information contained in HPVIS provides critical basic information about the environmental fate and potential hazards associated with these chemicals.

HPVIS contains data on more than 50 endpoints organized into the following four disciplines:

- Physical/chemical properties (e.g., melting point, vapor pressure);
- Environmental fate and pathways (e.g., biodegradation, stability in soil);
- Ecotoxicity (e.g., fish toxicity, toxicity to terrestrial plants); and
- Mammalian health effects (e.g., reproductive toxicity, developmental toxicity).

When combined with information about exposure and uses (e.g., from the Inventory Update Reporting program), the data will enable EPA and others to evaluate potential health and environmental hazard and exposure and identify priorities for appropriate follow-up action.

### **Accomplishments**

- eChemPortal, the Global Portal to Information on Chemical Substances (<http://webnet3.oecd.org/echemportal/Home.aspx>), represents a global commitment to coordinate database development to realize an integrated information capability by providing free public access to chemical data prepared for international government chemical review programs. It is an effort of the Organisation for Economic Co-operation and Development (OECD) in collaboration with the European Commission, the United States, Japan, Canada, the World Health Organization (WHO) International Programme on Chemical Safety (IPCS), the United Nations Environment Programme Chemicals (UNEP), the Business and Industry Advisory (BIAC), the International Council of Chemical Associations (ICCA) and environmental non-governmental organizations. The U.S. High Production Volume Information System (HPVIS) (<http://www.epa.gov/hpvis/>) is a key component of the health and environmental effects data that will be directly accessible from this one website.
- At two OECD meetings held in 2005, the United States reviewed and presented assessments for 34 chemicals and reviewed data on an additional 48 chemicals presented by other countries. EPA hosted one of these meetings in Washington, DC in October 2005.

- EPA successfully completed the structure of the database and put it on the Web for public use in April 2006 after considering significant input from stakeholder groups, including industry associations, environmental groups and state and tribal representatives. As of December 2006, HPVIS contained 327 submissions, representing 790 chemical substances, either as a single chemical submission or as a member of a chemical category.
- "Characterizing Chemicals in Commerce," the first HPV-data users conference, was held December 12-14, 2006, in Austin, Texas. The conference was co-sponsored by OPPT and the Northeast Waste Management Officials Association. Approximately 200 attendees learned about the HPV Challenge as well as other sources of chemical toxicity information. Attendees shared information about their experiences using HPV data and ideas to make it more user-friendly and accessible to diverse audiences. They discussed how the Agency could move forward in preparing technical information for non-technical audiences. Co-sponsors included the Environmental Council of the States, the National Pollution Prevention Roundtable, and the Lowell Center for Sustainable Production.

More information on the High Production Volume Information System (HPVIS) (<http://www.epa.gov/hpvis/>).

### ***Potential Chemical Risks to Children***

Developed via a public stakeholder process, the Voluntary Children's Chemical Evaluation Program (VCCEP) is helping the public better understand the potential health risks to children associated with certain chemical exposures.

VCCEP is a three-tiered assessment program designed to fully evaluate hazards, exposures and risks of chemicals to children and to develop needed information to adequately assess the risks to children. Under VCCEP, EPA collects three tiers of increasingly detailed information on a chemical's toxicity and exposure and resulting potential risk to children. So far EPA has asked companies to volunteer to sponsor their chemical(s) for Tier 1. After completing the evaluation of some Tier 1 chemical assessments, EPA asked companies to volunteer to sponsor Tier 2 testing for some chemicals. VCCEP is more an information collection program than a testing program. Rigorous chemical selection criteria were used to identify 23 chemicals for the pilot program. Companies have agreed to sponsor 20 of the 23 chemicals in the pilot. And EPA, in its Strategic Plan has committed to completing data needs documents for 10 of these chemicals by 2008 - six were completed by December 2006.

Similar to the HPV Challenge Program, the goal of VCCEP is to make data publicly available. The implementation process builds on and models the HPV Challenge Program whenever possible.

### **Accomplishments**

- From January 2005 through December 2006, chemical sponsors submitted Tier 1 chemical assessments for four more chemicals (totaling 13 of the 20 chemical assessments).
- In the same period, Toxicology for Excellence in Risk Assessment (TERA) - a third party organization that organizes and facilitates peer consultation meetings to

evaluate the chemical assessments - held a peer consultation meeting for four of the 20 chemicals (m-xylene, o-xylene, benzene and toluene) and wrote summary reports of the meetings for six chemicals (n-dodecane, undecane, decane, m-xylene, o-xylene and benzene).

- Since January 2005, EPA reviewed TERA's reports of the peer consultations, and by the end of 2006, issued Data Needs Decisions for six of the 12 chemicals addressed by TERA's reports. In its Data Needs Decisions, EPA decided that additional data were needed for three of the six chemicals. A consortium of three companies organized by the American Chemistry Council (ACC) agreed to proceed to Tier 2 of the VCCEP pilot and sponsor the additional information collection for one of the chemicals, decabromodiphenyl ether. Tier 2 sponsorship was declined for the other two chemicals, pentabromodiphenyl ether and octabromodiphenyl ether.
- For the three chemicals for which "data needs decisions" have been issued, acetone, methyl ethyl ketone and vinylidene chloride, EPA concluded that the Tier 1 assessments provide sufficient information to adequately characterize the risk to children of exposure to those chemicals. By the end of March 2006, evaluation of these three chemicals was considered by EPA to have been completed for purposes of the VCCEP pilot.
- In late 2006, EPA issued a Federal Register request asking stakeholders to evaluate the pilot program with the intention of identifying efficiencies and making mid-course corrections as needed.

More information on the Voluntary Children's Chemical Evaluation Program (VCCEP) (<http://www.epa.gov/chemrtk/vccep>).

### ***SIDS - An International Effort***

The Organization for Economic Cooperation and Development (OECD) HPV Screening Information Data Set (SIDS) Program is an international voluntary program in which EPA is an active participant. The program works with industry to obtain screening-level toxicity data and other basic information on high production volume (HPV) chemicals. It also prepares assessments of these data for presentation at biannual meetings. Under the OECD SIDS Program, EPA is sponsoring a growing number of HPV chemicals. While the United States has committed to be responsible for 25 percent of the chemicals in this program, in practice it has currently handled 45 percent and has committed to review approximately 500 chemicals between 2005 and 2010.

Through its participation in the OECD SIDS program, the United States benefits from the review of HPV chemicals by a wide group of international experts. Further, the United States strengthens relationships with the international community through this cooperative effort. Publication of the final OECD screening-level assessments offers the public a concise view of the human health and ecological hazards associated with international HPV chemicals.

### **Accomplishments**

- eChemPortal, the Global Portal to Information on Chemical Substances (<http://webnet3.oecd.org/echempportal/Home.aspx>), represents a global commitment to coordinate database development to realize an integrated information capability by providing free public access to chemical data prepared for international government chemical review programs. It is an effort of the Organisation for

Economic Co-operation and Development (OECD) in collaboration with the European Commission, the United States, Japan, Canada, the World Health Organization (WHO) International Programme on Chemical Safety (IPCS), the United Nations Environment Programme Chemicals (UNEP), the Business and Industry Advisory (BIAC), the International Council of Chemical Associations (ICCA) and environmental non-governmental organizations. The U.S. High Production Volume Information System (HPVIS) is a key component of the health and environmental effects data that will be directly accessible from this one website.

- At two OECD meetings held in 2005, the United States reviewed and presented assessments for 34 chemicals and reviewed data on an additional 48 chemicals presented by other countries. EPA hosted one of these meetings in Washington, DC in October 2005.
- During an April 2006 OECD meeting, EPA forwarded for publication finalized assessments for 32 chemicals. It also presented 35 chemical cases. At an October 2006 meeting EPA presented 28 cases which were discussed and approved during the meeting with only minor changes. View published cases on specific chemicals (<http://www.chem.unep.ch/irptc/sids/OECDsids/sidspub.html>). In addition to presenting chemical assessments, each meeting provides a forum for technical and policy discussions. Comments on specific documents are compiled and updated documents are forwarded to appropriate committees for review and to determine next steps.

### ***Stockholm Convention on POPs***

The Stockholm Convention is intended to eliminate or restrict the production, use and/or release of 12 chemicals that, due to their persistence, bioaccumulative potential, toxicity and potential to be transported long distances in the environment, can affect human health or the environment in locations distant from their use. The convention obligates all parties to take measures to eliminate or restrict the production, use and trade of intentionally produced persistent organic pollutants (POPs); to develop action plans that address the release of byproduct POPs; and to address the safe handling and disposal of POPs stockpiles and wastes.

The Administration supports the United States becoming a party to the Stockholm Convention, as well as to the Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade (PIC) and the Protocol on POPs to the 1979 Convention on Long-Range Transboundary Air Pollution (LRTAP), which are discussed in other sections of this report. Legislative changes to the Toxic Substances Control Act (TSCA) and the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA) that would provide the authority needed to implement the respective agreements are being considered in Congress.

### **Accomplishments**

- The United States has not yet ratified the POPs treaty which entered into force in May 2004; however, the Administration is interested in ensuring the passage of implementing legislation, and EPA has been an active member of the legislative dialogue with Congress.
- As an EPA office responsible for the regulation of chemicals, OPPT -- together, or in consultation, with other interested EPA offices and federal agencies -- also

participates as appropriate as an observer in the "review committee" where proposals to add substances to the convention are considered.

The following chemicals have been proposed for addition to the treaty and are currently under review:

- PFOS
  - pentaBDE
  - octaBDE
  - hexabromobiphenyl
  - Lindane
  - alpha- and beta-hexachlorocyclohexane
  - Chlordane
  - pentachlorobenzene
  - short-chained chlorinated paraffins
- In addition, EPA testified before Congress in July 2004 and March 2006, on behalf of the Administration, in support of U.S. ratification of the Convention.

More information on the Stockholm Convention (<http://www.pops.int/>).

More information on the 12 subject chemicals (POPs) (<http://www.chem.unep.ch/pops/alts02.html>).

### ***LRTAP - Regional POPs Protocol***

The 2003 Long-Range Trans-Boundary Air Pollution (LRTAP) Persistent Organic Pollutants (POPs) Protocol is a regional agreement to control, reduce or eliminate discharges, emissions and losses of persistent organic pollutants crossing national borders. The Protocol contains requirements similar to the Stockholm Convention concerning the elimination or reduction of the same 12 substances covered by the Stockholm Convention, plus four additional substances:

- chlordecone
- hexabromobiphenyl (HBB)
- technical hexachlorocyclohexane (HCH)
- polycyclic aromatic hydrocarbons (PAHs)

The United States is a party to the LRTAP Convention but has not ratified the POPs Protocol.

### **Accomplishments**

OPPT participates in the LRTAP task force on POPs which prepares technical reviews of proposals to add chemicals. As of spring 2006, the following substances have been proposed for addition to the protocol:

- Pentabromodiphenyl ether (pentaBDE)
- PFOS
- Hexachlorobutadiene

- Octabromodiphenyl ether
- Pentachlorobenzene
- Polychlorinated naphthalenes
- Short-chained chlorinated paraffins

More information on the LRTAP POPs Protocol (<http://www.unece.org/env/lrtap/welcome.html>).

### ***Rotterdam Convention - PIC***

The 1998 Rotterdam Convention on Prior Informed Consent (PIC) was developed with strong U.S. support to promote information exchange and informed risk-based decisions in the trade of hazardous chemicals and pesticides. The premise of the convention is that countries require sound information to support decision-making on: 1) chemicals and pesticides that have been banned or severely restricted due to health or environmental concerns and 2) "severely hazardous" pesticide formulations that pose particular concerns under conditions of use in developing countries.

Among other provisions, the convention gives force to importing country decisions on listed chemicals by prohibiting unwanted exports and requiring that exports meet conditions specified by importing governments. This is particularly important in the case of developing countries that may lack resources to enforce regulatory requirements fully at points of entry.

### **Accomplishments**

- While the United States has not ratified the Rotterdam Convention, which entered into force in February 2004, it participates in meetings as an observer and engages in technical assistance and information exchange. OPPT has participated in these efforts. This has included analyses of possible additions of new chemicals and pesticides to the convention. It originally included 22 pesticides or severely hazardous pesticide formulations and 5 industrial chemicals. Several substances have been added so that the new totals are 24 pesticides, 11 industrial chemicals and four severely hazardous pesticide formulations. Chemicals added were:
  - binapacryl
  - dinitro-ortho-cresol (DNOC) and its salts
  - ethylene dichloride
  - ethylene oxide
  - tetraethyl lead
  - tetramethyl lead
  - toxaphene
  - asbestos (actinolite, anthophyllite, amosite, and tremolite)
  - dustable power formulations containing benomyl at or above 7%, carbofuran at or above 10 percent, thiram at or above 15 percent

More information on the Rotterdam Convention (<http://www.pic.int/>).

## *International Work*

The Organization for Economic Cooperation and Development (OECD) is an international organization consisting of 30 industrialized countries in Europe, North America, Asia, and the Pacific. OPPTS participates actively in the OECD Chemicals Committee, a comprehensive program of expert working groups and projects that includes activities such as the Screening Information Data Set (SIDS) to facilitate the coordinated investigation of high production volume (HPV) chemicals; the Globally Harmonized System (GHS) of Classification and Labeling to promote better exchange of information on the hazards of chemicals and mixtures to human health and the environment (as well as to harmonize information on labels and safety data sheets for chemicals in commerce).

### **Accomplishments**

- In the past two years, OECD member countries have approved 10 test guidelines and five guidance documents (on, for example, vapor pressure and terrestrial plants). OPPTS is currently leading the development of 16 new and updated test guidelines (to keep OECD test guidelines current with scientific developments). OPPTS relies on test guidelines and Good Laboratory Practices to ensure the development of quality data under its regulatory testing programs and to ensure that data generated in the United States is also acceptable to other OECD countries under the Mutual Acceptance of Data (MAD) agreement.
- The Strategic Approach to International Chemicals Management (SAICM) is a voluntary initiative that was finalized in February 2006 in which OPPTS is involved. It reinforces the Johannesburg World Summit on Sustainable Development (WSSD) Plan of Implementation's goal that, by 2020, chemicals will be produced and used in ways that minimize significant adverse effects on human health and the environment. The goal is to achieve this using transparent, science-based risk assessment and risk management procedures.

SAICM provides a flexible framework to continue progress toward existing obligations and commitments, like the United Nations Environmental Programme (UNEP) mercury partnerships, while seeking to build capacity in the sound management of chemicals in developing countries and in countries with economies in transition. It draws from the wealth of existing tools and approaches, such as those found in the OECD, and provides suggested priorities for risk assessment and risk reduction, including socio-economic factors and informed substitution.

- OPPTS is involved in a number of regional undertakings that stem from the North American Agreement for Environmental Cooperation among the governments of Canada, Mexico, and the United States. For example, OPPTS has assisted in the development of North American Regional Action Plans for several substances of international concern, including PCBs, mercury and dioxin.
- In 2006, the Commission for Environmental Cooperation (CEC) Council directed the Sound Management of Chemicals (SMOC) Working Group to move towards the realization of a strategy that addresses issues of mutual concern, supports the CEC's priorities, and advances the Parties' shared international objectives, including realizing SAICM implementation in the North American region.
- The United States hosted an OECD workshop on the safety of manufactured nanomaterials resulting in better cooperation, coordination and communication

among interested countries. On the basis of the results of the workshop, the OECD agreed to establish a Working Party to advance this issue and invited the United States to chair the work.

More information on OEDC Screening Information Data Sets (SIDS) program.

## Reducing Risks From Specific Chemicals



OPPT develops regulations and policies designed to reduce risks to human health and the environment from several specific priority chemicals, known as National Program Chemicals. The National Program Chemicals include chemicals that have specific statutory requirements (e.g., lead, asbestos, polychlorinated biphenyls (PCBs)) as well as other multimedia pollutants of concern (e.g., mercury and dioxin).

Among the activities that OPPT has focused on are:

- Issuing a proposed rule to implement practice standards and training requirements for those engaged in renovation, repair, and painting activities that disturb lead-based paint (<http://www.epa.gov/lead/>).
- Developing grant programs to address populations at risk for elevated blood-lead levels.
- Working with community partners to remind local educational authorities of federal asbestos (<http://www.epa.gov/asbestos/>) requirements.
- Developing the PCB Site Revitalization Guidance for complying with Toxics Substances Control Act (TSCA) regulations for cleanup and disposal of PCB (<http://www.epa.gov/oppt/pcb/>) contamination.
- Publishing EPA's Roadmap for Mercury (<http://www.epa.gov/mercury/roadmap.htm>), which describes the Agency's progress to date in dealing with mercury issues and outlines its major ongoing and planned actions to address mercury risks, both domestically and internationally.
- Developing the United Nations Environment Programme Mercury Products Partnership to reduce mercury in products internationally by (1) helping build the necessary capacity for countries to take further action on mercury and (2) promoting information and technology transfer to better characterize and address the global mercury problem.

### *Lead Poisoning Prevention*

Lead is a highly toxic metal that was used for many years in products found in and around our homes. Lead may cause a range of health effects, from behavioral problems and learning disabilities to seizures and death. Children under six years of age are most at risk. Research suggests that the primary sources of lead exposure for most children are deteriorating lead-based paint, lead-contaminated dust, and lead-contaminated residential soil.

EPA has played a major role in addressing these residential lead hazards. EPA has largely completed the regulatory framework assigned to it by Congress in Title X of the Residential Lead-Based Paint Hazard Reduction Act of 1992 by:

#### Strategic Plan

Goal Four of EPA's Strategic Plan includes a goal to eliminate childhood lead poisoning in the United States as a major public health concern by the year 2010.

- Issuing rules creating a training and certification program for individuals and firms engaged in lead-based paint activities;
- Establishing hazard standards for lead in paint, dust, and soil; and
- Requiring pre-renovation education and lead hazard disclosure in target housing.

As a result of these efforts and other efforts across the federal government, children's elevated blood-lead levels in the United States have declined dramatically. In 1978, 3-4 million children had elevated blood-lead levels. By 2002, that number had dropped to 310,000 and it continues to decline. While we still have a significant challenge to eliminate childhood lead poisoning in the United States as a major public health concern by the year 2010, EPA is very proud of how federal, state, tribal, and private sector partners have coordinated efforts with the public to better protect our children. More recently, EPA has made even more progress.

### **Accomplishments**

- In January 2006, EPA proposed a regulation to implement some simple but effective work practice standards that can reduce potential exposure to dangerous levels of lead resulting from residential housing. These work practice standards and training requirements would apply to persons engaged in renovation, repair, and painting activities that disturb lead-based paint in housing built before 1978. This proposal is one component of a comprehensive program that will also include an education and outreach campaign to promote lead-safe work practices.

The proposed rule, issued under the authority of section 402(c)(3) of TSCA, would require that renovators be trained in the use of lead safe work practices, that renovators and firms be certified, that providers of renovation training be accredited, and that renovators follow renovation work practice standards. The standards would apply to all persons who do renovation for compensation, including renovation contractors, maintenance workers in multi-family housing, painters, and other specialty trades.

Additional information on the proposed rule for lead safe work requirements (<http://www.epa.gov/lead/pubs/renovation.htm>).

- In order to meet the 2010 federal government goal of eliminating childhood lead poisoning as a major public health concern, EPA recognizes that additional attention and assistance must be given to our most vulnerable populations-those that have rates of lead poisoning in excess of the national average and those in areas where conditions are ripe for lead poisoning but where screening has not yet occurred with sufficient frequency to determine actual lead poisoning rates. To address this issue, EPA has developed a new competitive grant program to address populations still at risk for elevated blood-lead levels. The grants are available to a wide range of applicants, including state and local governments, federally recognized Indian tribes and tribal consortia, territories, institutions of higher learning, and nonprofit organizations.
- The first round of grant availability was announced on December 1, 2004, and over 220 applications, totaling almost \$18 million, were received. Out of these, 23 proposals were recommended for funding, with a total funding level of approximately \$1.8 million. Although only a small portion of the applicants could be funded, a wide range of projects received grants, including projects in each of EPA's 10 Regional offices, both small and large projects, urban and rural projects, and projects focusing

on areas of documented high rates of lead poisoning and projects focusing on areas that were suspected of having high levels of lead poisoning. The funding available for the second round of grants has been increased to \$3 million. Availability of these grants was announced in November 2006. The Agency is currently evaluating more than 200 applications for assistance.

- In 2005, EPA's lead poisoning prevention campaign with Head Start, "Give Your Child a Chance of a Lifetime," received an award at the Silver Inkwell Communications Award competition. The lead-awareness materials developed included a brochure for parents, a number of fact sheets for Head Start staff, and a curriculum for Head Start teachers, including a puppet show, songs and snack recipe. Download or print a copy of the documents (<http://www.epa.gov/lead/pubs/leadpbed.htm>).

More information about EPA's lead poisoning prevention programs (<http://www.epa.gov/lead>).

### ***Asbestos Project Plan***

Asbestos is the common name for a group of naturally occurring mineral fibers with the ability to be woven and resistance to heat and most chemicals. Because of these properties, asbestos fibers have been used in a wide range of manufactured goods, including construction materials and friction products. Exposure to asbestos can be harmful to human health if fibers are released into the air when asbestos is disturbed or because it is in poor condition. These fibers can cause serious health problems when inhaled into the lungs. Asbestos exposure has been associated with a number of serious health problems and diseases, including asbestosis, lung cancer, or mesothelioma. EPA is committed to providing the public with accurate and timely public health information and is continuing to address concerns about asbestos.

### **Accomplishments**

- In late 2005, OPPT published EPA's Asbestos Project Plan, which provides an overview of EPA's key ongoing and planned asbestos activities to identify, evaluate, and reduce risk to human health from asbestos exposure. EPA has identified three key areas:
  1. Improving the state of the science for asbestos. Among other things, this involves activities to assess exposures, improve sample collection and analysis, and carry out applied science in the field.
  2. Identifying opportunities to address ways people are exposed to asbestos in products, schools, and buildings.
  3. Assessing and reducing exposure associated with areas that require asbestos cleanup.
- OPPT worked with community partners, such as the National Parent-Teachers Association, the National Education Association, the American Association of School Administrators, and the Department of Education, to remind Local Education Authorities of the federal requirements relating to asbestos in schools and the Asbestos Hazard Emergency Response Act (AHERA). In particular, EPA focused on making charter schools aware of the requirements, since many of today's charter schools were not in existence when the EPA requirements were first established. Part of this education campaign involved distributing updated outreach materials on

asbestos in schools and on AHERA compliance, with versions in Spanish where appropriate. EPA also worked with other federal agencies, such as the Bureau of Indian Affairs, to distribute information to tribes.

View EPA's Asbestos Web page (<http://www.epa.gov/oppt/asbestos/>) and the Asbestos Project Plan (<http://www.epa.gov/oppt/asbestos/pubs/asbprojplan.html>) for more information about specific asbestos issues. In addition to this web site, EPA has a toll-free hotline for asbestos issues (1-800-471-7127).

## ***PCBs***

Polychlorinated biphenyls (PCBs) are mixtures of synthetic organic chemicals with the same basic chemical structure and similar physical properties ranging from oily liquids to waxy solids. Due to their non-flammability, chemical stability, high boiling point and electrical insulating properties, PCBs were used in hundreds of industrial and commercial applications including electrical, heat transfer, and hydraulic equipment; as plasticizers in paints, plastics and rubber products; in pigments, dyes and carbonless copy paper and many other applications. More than 1.5 billion pounds of PCBs were manufactured in the United States prior to cessation of production in 1977.

PCBs have been demonstrated to cause a variety of adverse health effects, including cancer in animals, and a number of serious non-cancer health effects in animals, including effects on the immune system, reproductive system, nervous system, endocrine system and other health effects.

PCBs were specifically regulated by Toxic Substances Control Act (TSCA) when the law passed in 1976 because Congress believed that the chemical and toxicological properties of PCBs posed unacceptable risks to public health and the environment. TSCA §6(e) specifically directs EPA to regulate the manufacturing, processing, distribution in commerce, use, and disposal of PCBs and generally prohibits the use of PCBs except in a totally controlled manner. It allows EPA to authorize uses of PCBs provided that they do not present an unreasonable risk.

More than a dozen major and minor rules have been promulgated since 1978 to implement the bans, provide authorizations for use, and control the disposal of PCBs. Our current efforts regarding PCBs are focused on the reduction and elimination of the use of PCBs and encouraging cleanup and safe disposal of PCBs.

## **Accomplishments**

- Issued in November 2005, the Polychlorinated Biphenyl Site Revitalization Guidance (<http://www.epa.gov/opptintr/pcb/pubs/guidance.html> - revitalization) is a guide for complying with TSCA regulations for the cleanup and disposal of PCB contamination. The purpose of the document is to provide assistance in navigating the TSCA PCB regulations in Title 40 of the Code of Federal Regulations at Part 761 (40 CFR Part 761). The document's primary focus is the PCB Remediation Waste provision at 40 CFR 761.61, which governs the management of PCB waste generated as the result of PCB spills and associated cleanup activities (e.g., contaminated environmental media, rags, debris).

This document may be useful to Brownfields grant recipients and other individuals involved in PCB cleanups under TSCA. The document discusses:

- Factors for consideration when determining appropriate cleanup levels (e.g., intended use and type of PCB waste);
  - Requirements for verifying that the cleanup standard has been met and for establishing deed restrictions (where necessary);
  - Options available for disposing of PCB wastes; and
  - Other relevant TSCA PCB requirements such as caps, waste storage, marking, manifesting, and recordkeeping.
- On February 15, 2006, EPA Region 4 in Atlanta issued a risk-based PCB disposal permit to the Navy and the State of Florida to sink the Ex-Oriskany, a former U.S. Navy aircraft carrier containing PCBs, as an artificial reef. This completed a 22-month permitting process involving OPPT, Office of Research and Development, Office of Water, and Region 4. The vessel was sunk as a reef, in compliance with the permit, on May 17, 2006.

More information on PCBs (<http://www.epa.gov/oppt/pcb/>) and information and guidance on PCBs and ship scrapping (<http://www.epa.gov/Compliance/resources/publications/civil/federal/shipscrapguide.pdf>).

### ***Reducing Risks From Mercury***

Mercury is contained in some of the products we use and in some of the fish we eat. It can be found in your home, in health-care facilities and in schools. Whether an exposure to mercury will harm a person's health depends on a number of factors. Almost all people have at least trace amounts of mercury in their tissues, reflecting mercury's widespread presence in the environment. Mercury can affect the nervous system. People are mainly exposed to methylmercury, an organic compound, when they eat fish and shellfish that contain methylmercury. Still developing, fetuses, infants and children are particularly sensitive to the effects of methylmercury on the nervous system.

Because mercury is a problem that knows no geographic boundaries, our work has an international component. Mercury can travel thousands of miles in the atmosphere before it is eventually deposited back to the earth in rainfall or in dry gaseous forms (see Mercury Emissions: The Global Context) ([http://www.epa.gov/mercury/control\\_emissions/global.htm](http://www.epa.gov/mercury/control_emissions/global.htm)). Current estimates are that less than half of all mercury deposition within the United States comes from U.S. sources (see Mercury: Basic Information) (<http://www.epa.gov/mercury/about.htm>).

### **Accomplishments**

- OPPT led the development of EPA's Roadmap for Mercury (<http://www.epa.gov/mercury/roadmap.htm>) published in July 2006. The Roadmap describes the Agency's progress to date in dealing with mercury issues domestically and internationally, and outlines EPA's major ongoing and planned actions to address risks associated with mercury. It focuses on six key areas:
  - Addressing mercury releases to the environment;
  - Addressing mercury uses in products and industrial processes;

- Managing commodity-grade mercury supplies;
  - Communicating risks to the public;
  - Addressing international mercury sources; and
  - Conducting mercury research and monitoring.
- In 2006, OPPT worked to implement key commitments made in the Roadmap for Mercury. These include launching an interagency discussion on the long-term management of commodity-grade mercury. This interagency group is represented by EPA and other key federal agencies with an interest in commodity-grade mercury. During this interagency process, the Department of Energy announced its decision not to sell its supply of excess mercury and store it long term, thus keeping mercury out of the environment. The interagency group will be facilitating a stakeholder discussion to get input on how to manage long-term excess supplies of non-federal commodity-grade mercury.
  - In 2006, OPPT developed a booklet, Chemical Management Resource Guide for School Administrators (<http://www.epa.gov/oppt/pubs/chemmgmt/index.htm>), which focuses on preventing chemical spills and eliminating harmful chemicals, such as mercury, in schools altogether. This resource guide is geared towards non-technical school administrators and provides resources for establishing prevention and cleanup programs in their schools.
  - On August 11, 2006, EPA announced a national program that will help cut mercury air emissions by up to 75 tons over the next 15 years. The National Vehicle Mercury Switch Recovery Program is designed to remove mercury-containing switches (in convenience lights and anti-lock braking systems) from scrap vehicles before the vehicles are flattened, shredded, and melted to make new steel. Together with existing state mercury switch recovery efforts, this program will significantly reduce mercury air emissions from the fourth leading source in the United States - the furnaces used in steel making.
  - On July 11, 2006, OPPT proposed a Significant New Use Rule (SNUR) under TSCA to address the use of new mercury switches in motor vehicles (<http://yosemite.epa.gov/opa/admpress.nsf/b6f538027a6b8c37852572a000650c04/babd5401e44f45b8852571c70050f80e%21OpenDocument>). Although motor vehicle manufacturers voluntarily discontinued the use of certain mercury switches in vehicles prior to 2003, should they intend to resume such a use, the SNUR will allow EPA the opportunity to evaluate the use of mercury in these switches and, if necessary, to prohibit or limit this use before it is resumed.

## **International Accomplishments**

- At the 23rd session of the United Nations Environment Programme (UNEP) Governing Council in February 2005, governments agreed to the development and implementation of partnerships as one approach to reducing the risks to human health and the environment from the release of mercury and its compounds to the environment. EPA has taken an active leadership role in the partnerships, the goal of which is to achieve actual reductions in mercury release to the environment, to facilitate the use of alternate substances and to promote best management practices that result in decreased exposure to mercury.
- Current partnerships include pilot projects in five key sectors that can achieve reductions: chlor-alkali facilities, mercury products, artisanal and small-scale gold

mining, coal combustion, and fate and transport research. OPPT has provided leadership and resources to support the UNEP Partnerships, and OPPT is managing the Mercury Products Partnership.

- In 2006, OPPT made substantial progress in developing formal partnerships with other countries to reduce mercury in products. Through UNEP, OPPT has developed projects to reduce and ultimately eliminate mercury products in neo-natal units of 33 hospitals in Argentina and two hospitals in China. OPPT has also negotiated an agreement with the United Nations Institute for Training and Research to implement mercury reduction projects in Ecuador, Chile, and Panama. In addition, OPPT is supporting a mercury products data assessment in Peru.

Information on OPPT's work on a mercury related partnership: Partnership for Sustainable Healthcare (PSH) (<http://www.epa.gov/p2/pubs/psh.htm>) and see PSH in this report.

View EPA's Mercury Web page (<http://www.epa.gov/mercury/>).

# Working to Prevent Pollution



The Pollution Prevention Act of 1990 established that prevention, or "source reduction," is the Agency's first priority for addressing pollution and waste. Therefore, EPA's guiding principle is to reduce when possible potential sources of waste and pollution rather than controlling pollution or treating or recycling waste after it is created.

The Office of Pollution Prevention and Toxics (OPPT) has been complementing traditional "command and control" approaches with innovative, collaborative programs that encourage environmental stewardship as both a critical environmental strategy and a sustainable business practice. OPPT also is working to integrate pollution prevention into its traditional "command and control" regulatory activities across air, water and waste regulations.

## Accomplishments

- In the area of chemicals, Sustainable Futures (<http://www.epa.gov/oppt/newchems/pubs/sustainablefutures.htm>) and the PBT Profiler (<http://www.epa.gov/oppt/pbtprofiler/>) provide online software enabling chemical manufacturing companies to assess and identify safer and greener chemicals early in their design phase.
- OPPT's Existing Chemicals Program has been using pollution prevention (P2) approaches to encourage replacement of existing chemicals of concern in the marketplace by improving incentives for innovative technology and safer substitute chemicals.
- OPPT helped create and now co-manages the EPA Office Directors' Multimedia and Pollution Prevention Forum (M2P2). This is the principal venue within the Agency for reviewing and exchanging information among media programs on activities to promote a multimedia approach to pollution prevention (e.g., rules with significant cross-media impacts, identification of regulatory/voluntary synergies, joint issue sessions with Forum on State and Tribal Toxics Action (FOSTTA) state members, etc.).
- The Environmental Assistance Network was created to coordinate activities within EPA's Strategic Goal 5, Environmental Stewardship. EPA has five major strategic goals (<http://www.epa.gov/ocfo/plan/2003sp.pdf>). EPA's environmental stewardship goal includes OPPT's cross-cutting coordination on P2 opportunities in enforcement and compliance, small business development, and P2 research and development.
- EPA's Green Building Workgroup is a cross-Agency group guiding EPA's development of policies, programs, partnerships, communications, and operations affecting building and development.

### Strategic Plan

Goal Five of EPA's Strategic Plan is to reduce pollution by 76 billion pounds, conserve 360 billion BTUs of energy and 2.7 billion gallons of water, and save \$400 million by 2008, from a baseline year of 2003.

OPPT's pollution prevention program received an 82.7 percent rating from the Office of Management and Budget on its Program Assessment Rating Tool (PART) effectiveness review, the third highest among the 60 EPA programs assessed to date.

## ***Green Suppliers Network***

The Green Suppliers Network is an OPPT program helping companies that comprise the supply chain of large manufacturers to save money while reducing pollution and preserving resources. By providing technical assistance in lean manufacturing and pollution prevention techniques, the Green Suppliers Network improves suppliers' productivity, efficiency, and environmental performance.

The Green Suppliers Network is a collaborative venture among industry, EPA, and the U.S. Department of Commerce's Manufacturing Extension Partnership (MEP). The Green Suppliers Network works with all levels of the manufacturing supply chain to improve processes and minimize waste generation. Through onsite technical reviews, suppliers continuously learn ways to increase energy efficiency, identify cost-saving opportunities, and optimize resources and technologies to eliminate waste. The result has been more effective processes and products with higher profits and fewer environmental impacts.

The Green Suppliers Network is available to any manufacturing sector. Currently, the aerospace, automotive, healthcare/pharmaceutical, and office furniture industries are leading the way and benefiting from the Green Suppliers Network.

### **Accomplishments**

- Identified in the Green Suppliers Network's first 40 technical reviews were more than \$26 million in potential, annual, cost-saving opportunities, including \$6.9 million from potential reduced environmental impacts. Also identified were opportunities to conserve 71.9 million kWh of energy (245K MM Btu); more than 10.4 million gallons of water; and opportunities to reduce more than 960,000 pounds of solid waste.
- Worked with the Lean and Environment Initiative in EPA's Office of Policy, Economics and Innovation to create a toolkit for companies that combines ways to reduce costs while reducing waste and resource use.
- Successfully collaborated with Environment Canada to help them adopt the Green Suppliers Network model for its, "Green Business Network."
- Enhanced the infrastructure of the program by creating:
  - a database to track technical reviews and results;
  - a Web site with its Department of Commerce partner; and,
  - marketing materials.
- Supported development of training for state pollution prevention technical assistance providers and MEP centers to facilitate the integration of lean manufacturing and pollution prevention concepts during their delivery of services.
- Launched a collaborative effort between Goodwill and the Green Suppliers Network Automotive Sector (Suppliers Partnership for the Environment) and collected 80,000 pounds of plastic grind, recycled 30,000 pounds of corrugated cardboard per month, and created 50 jobs.
- Organized Green Suppliers Network's First National Multi-Sector meeting at the National Association for Environmental Managers.

More information on the Green Suppliers Network (<http://www.greensuppliers.gov/>).

## ***Partnership for Sustainable Healthcare***

EPA's Partnership for Sustainable Healthcare (PSH) evolved from the agency's previous partnership program, Hospitals for a Healthy Environment. In February 2006 the original EPA partnership became a fully independent entity - a mark of its success in meeting its primary goal of virtually eliminating mercury waste from health-care facilities.

Although the new entity, a 501(c)(3) non-profit organization (<http://www.h2e-online.org/>), is totally independent and has no legal connection to the Agency, it retained the name "Hospitals for a Healthy Environment" (H2E), and has an agenda and mission consistent with EPA's goals.

The new H2E is a sub-recipient of an EPA cooperative agreement with the National Center for Manufacturing Sciences (NCMS). EPA's involvement in the day-to-day operations of H2E has diminished as the independent organization has assumed responsibility for administering the H2E program. The Agency continues to provide technical assistance to help NCMS and the new H2E carry out the cooperative agreement. However, oversight of the H2E program is being handled by NCMS, the American Hospital Association, American Nurses Association, and Health Care Without Harm. Under this structure, the private parties will have the ability to raise funds through other avenues, including charging fees for services to the healthcare sector, provided the fees are properly accounted for as program income under the NCMS cooperative agreement.

The new independent H2E non-profit organization continues to provide hands-on help and information to hospitals, as well as sponsoring a prestigious award program to provide incentives to health-care facilities to be good environmental stewards.

### **Accomplishments**

Prior to the advent of the independent H2E organization, EPA's partnership program enlisted 1,170 partners representing 6,431 health care facilities to join in achieving the goal of virtually eliminating mercury-containing waste, as well as to reduce all waste, especially hazardous waste. The healthcare sector continues to show signs of growing environmental awareness, as evidenced by the environmental results achieved by the hospitals recognized by H2E 2005 and 2006 award programs:

- Eliminating nearly 4 million grams of mercury;
- Recycling 31,000 tons of waste;
- Reducing 4,300 tons of hazardous waste;
- Conserving 43 million gallons of water; and
- Saving more than \$2 million.

More information on Partnership for Sustainable Healthcare (PSH) (<http://www.epa.gov/p2/pubs/psh.htm>).

## ***Design for the Environment***

Design for the Environment (DfE) focuses on collaborating with industries that possess the potential for chemical risk reduction and a strong motivation to make lasting changes. DfE convenes representatives from those industries and environmental groups in partnership

programs that evaluate alternative technologies, materials and process improvements based on human health and environmental considerations, as well as performance and cost. As incentives for participation and driving change, DfE offers unique technical tools, methodologies, and expertise.

## Accomplishments

- The DfE Program has reached more than 200,000 business facilities and approximately 2 million workers and is reducing the use of chemicals of concern by approximately 237 million pounds per year.
- DfE **Lead-free Solder Partnership** is helping industry focus on products and processes that reduce solders' environmental impacts, including releases of toxic chemicals and reductions of potential risks. In 2005, the DfE Lead-Free Solder Partnership completed a study of the life-cycle environmental impacts of tin/lead solder and leading candidate lead-free solders: "Solders in Electronics: A Life-Cycle Assessment." (<http://www.epa.gov/dfe/pubs/solder/lca/index.htm>) With annual worldwide tin/lead solder use at about 180 million pounds, the study results will allow industry to direct efforts toward products and processes that reduce solders' environmental footprint, including releases of toxic chemicals, and potential risks to human health and the environment.
- The DfE **Wire and Cable Partnership** was formed to evaluate the impacts of standard and alternative wire and cable formulations. The wire and cable partnership is using a life-cycle assessment approach to assess heat stabilizers, flame retardants, and polymer systems used in wire and cable insulation and jacketing. Results of a DfE and the Toxics Use Reduction Institute Wire & Cable Partnership study will help companies make environmentally sound product and material choices and reduce the overall environmental and health impacts of the products.
- DfE's **Furniture Flame Retardancy Partnership** is helping industry factor environmental and human health impacts into its decision-making as companies choose alternatives to pentabromodiphenyl ether (pentaBDE) for flame-retarding furniture foam. The Partnership was formed in 2004 as the result of stakeholder concerns about widespread occurrence of pentaBDE in the environment and human tissues. PentaBDE was the primary flame retardant used in the manufacture of low-density, flexible polyurethane foam for furniture, with production volumes of approximately 19 million pounds per year. When industry agreed to voluntarily phase out PentaBDE, the Partnership's work took on a new urgency. With broad-based stakeholder membership, the Partnership was formed to develop and disseminate information on alternative technologies for achieving furniture fire safety standards. EPA published the final partnership report in September 2005 on alternatives to pentaBDE: "Environmental Profiles of Chemical Flame-Retardant Alternatives for Low-Density Polyurethane Foam." (<http://www.epa.gov/dfe/pubs/flameret/ffr-alt.htm>)
- DfE has convened the **Printed Circuit Board Partnership** with the electronics and chemical manufacturing industries, environmental groups, and other interested stakeholders on flame retardants used in printed circuit boards. The results of the Partnership, along with information on cost and performance, will be used by the electronics industry in selecting flame retardants for printed circuit boards.  
  
The Partnership's aim is to better understand environmental health and safety aspects of commercially available flame retardants that can be used to meet fire

safety requirements for the majority of printed circuit boards. Tetrabromobisphenol A (TBBPA) is the largest-volume brominated flame retardant with an annual production of approximately 330 million pounds, and is the primary flame retardant for printed circuit boards. Alternative flame retardant materials, developed in response to concerns over the use of some brominated flame retardants, are becoming available for use in printed circuit boards. The Partnership is conducting an alternatives assessment to focus on environmental impacts and will build on the groundbreaking methodology of DfE's Furniture Flame Retardancy Partnership.

- DfE's **Formulator Program**, which has more than 40 stakeholder partners, encourages these partner companies to reformulate products to be environmentally safer, cost competitive and effective. By providing chemical and toxicological information and suggesting safer substitutes, the Formulator Program reduced the use of an estimated 40 million pounds of chemicals of concern in 2005. Formulator Partnerships have become respected and sought-after in the industrial and institutional cleaning sector, and the program is now working to reformulate products in the consumer cleaning products sector.
- DfE is developing the **Safer Detergents Stewardship Initiative (SDSI)** in collaboration with the Office of Water. This initiative will assist in attainment of the Aquatic Life Criteria (<http://www.epa.gov/fedrgstr/EPA-WATER/2006/February/Day-23/w2558.htm>) for Nonylphenol (NP), which was published in the Federal Register in February 2006. These criteria are designed to protect aquatic life in both fresh and saltwater and can form the basic for improved state and tribal water quality standards. SDSI will recognize companies and others who voluntarily phase out or commit to phasing out the manufacture or use of nonylphenol ethoxylate surfactants, commonly referred to as NPEs. These surfactants are used in detergents in cleaning and other products. Both NPEs and their breakdown products, such as NP, can harm aquatic life. NP is both an intermediate in the manufacture of NPE surfactants and an ultimate degradation product. NPE surfactants are used in many sectors including cleaning and industrial processes.

DfE has identified safer alternatives through its partnership work with industry and environmental advocates. These safer alternative surfactants are comparable in cost and are readily available. SDSI will encourage the manufacture and use of safer surfactants, reducing the amount of NPE surfactants and NP in streams.

- Through its **Automotive Refinishing Partnership**, DfE demonstrated that developing best practices helps small businesses reduce emissions of toxic chemicals. The program developed estimates that implementation of best practices on a national level in 50,000 auto body shops would reduce releases of toxic pollutants by over 110 million pounds per year, saving auto body shops up to \$650 million through reduced paint costs.
- EPA's Design for the Environment (DfE) (<http://www.epa.gov/dfel/>) has been working collaboratively with the Agency's **Community Action for a Renewed Environment (CARE) Program** and its Office of Air Quality Planning and Standards (OAQPS) Community Air Toxics Campaign to implement best practices that reduce hazardous air pollutants (HAPs) and volatile organic compounds (VOCs) in community initiatives focused on auto body and refinishing businesses. OAQPS is considering including several cost-effective DfE best practices as a pollution-prevention component in the area source regulation being developed. The chemicals used in auto body shop operations are highly toxic and pose a threat to the health of workers, neighbors,

and the environment. They include diisocyanates (the leading cause of occupational asthma), volatile organic solvents, sanding dusts containing lead and hexavalent chromium, and metal fumes from welding operations. Implementation of best practices in all 50,000 auto body shops nationwide could reduce VOCs and HAPs by 174 million pounds per year, while saving businesses money by reducing paint and solvent costs, as well as related hazardous waste disposal costs.

More information on the DfE Program and partnerships (<http://www.epa.gov/dfe>).

## ***Green Chemistry***

EPA's Green Chemistry Program works with the chemical community to promote the environmentally conscious design of chemical products and processes that are safer to human health and the environment. The program's flagship activity, the annual Presidential Green Chemistry Challenge Awards, recognizes the significant scientific, economic, human health, and environmental benefits that green chemistry technologies offer.

The Presidential Green Chemistry Challenge Awards Program celebrated its 11th year at its June 2006 awards ceremony. To date the program has given out 57 awards - 12 academic awards, 11 small business awards, and 34 awards to larger businesses and organizations.

### **Accomplishments**

- Together all Green Chemistry award-winning technologies have resulted in:
  - 145 million pounds of hazardous chemicals and solvents eliminated each year - enough to fill 660 railroad tank cars or a train 8 miles long;
  - 55 million gallons of water saved each year - the amount used by 2,100 people annually; and
  - 57 million pounds of carbon dioxide releases to air eliminated each year - equal to taking 6,000 automobiles off the road.
  
- A total of 975 innovative technologies have been nominated for the Green Chemistry awards, and, according to preliminary numbers from its recently updated metrics tool, the total benefits from all of these technologies include:
  - 1 billion pounds per year of hazardous chemicals eliminated;
  - 16 billion gallons of water per year saved (this includes both water used and waste water eliminated);
  - 350 million pounds of carbon dioxide emissions prevented; and
  - 9 million BTUs saved.
  
- **2005 Presidential Green Chemistry Challenge Award Recipients**  
(<http://www.epa.gov/greenchemistry/pubs/pgcc/past.html> - 2005)
  - **Greener Synthetic Pathways Award**  
Archer Daniels Midland Company  
Novozymes NovaLipid™: Low Trans Fats and Oils Produced by Enzymatic Interesterification of Vegetable Oils Using Lipozyme®
  - **Greener Synthetic Pathways Award**  
Merck & Co., Inc.

A Redesigned, Efficient Synthesis of Aprepitant, the Active Ingredient in Emend®: A New Therapy for Chemotherapy-Induced Emesis

- **Greener Reaction Conditions Award**  
BASF Corporation  
A UV-Curable, One-Component, Low-VOC Refinish Primer: Driving Eco-Efficiency Improvements
  - **Designing Greener Chemicals Award**  
Archer Daniels Midland Company  
Archer RC™: A Nonvolatile, Reactive Coalescent for the Reduction of VOCs in Latex Paints
  - **Small Business Award**  
Metabolix, Inc.  
Producing Nature's Plastics Using Biotechnology
  - **Academic Award**  
Professor Robin D. Rogers, The University of Alabama  
A Platform Strategy Using Ionic Liquids to Dissolve and Process Cellulose for Advanced New Materials
- **2006 Presidential Green Chemistry Challenge Award Recipients**  
(<http://www.epa.gov/greenchemistry/pubs/pgcc/past.html>)
    - **Greener Synthetic Pathways Award**  
Merck & Co.  
Novel green synthesis for  $\beta$ -amino acids produces the active ingredient in Januvia™
    - **Greener Reaction Conditions Award**  
Codexis, Inc. Directed Evolution of three biocatalysts to produce the key chiral building block for Atorvastatin, the active ingredient in Lipitor®
    - **Designing Greener Chemicals Award**  
S.C. Johnson Greenlist™ process to reformulate consumer products
    - **Small Business Award**  
Arkon Consultants and NuPro Technologies  
Environmentally safe solvents and reclamation in the flexographic printing industry
    - **Academic Award**  
Professor Galen J. Suppes, University of Missouri-Columbia  
Biobased propylene glycol and monomers from natural glycerin

More information on the Green Chemistry Program (<http://www.epa.gov/greenchemistry>).

## *Sustainable Futures*

Sustainable Futures is a partnership among OPPT, the chemical industry, and other stakeholders that is leading to the commercialization of environmentally preferable chemicals and chemical products. Under Sustainable Futures, OPPT offers powerful computerized chemical screening tools that allow partners to quickly and cost effectively screen chemicals for hazard and/or risk considerations and allow participants to compare and contrast hazard and risk profiles of alternate chemicals and processes, leading to commercialization of environmentally preferable new chemical products and identification of safer alternatives for existing chemical products.

## Accomplishments

- Between January 2005 and December 2006, more than 150 persons representing 75 companies took training in the use, interpretation and applicability of Sustainable Futures chemical screening methods.
- Approximately 14 percent of FY 2005 and 17 percent of FY 2006 New Chemical notifications were independently evaluated by submitters at the research and development stage using the Sustainable Futures tools.
- Sustainable Futures tools were used to evaluate and compare and contrast existing chemicals. Applications to existing chemicals include the Furniture Flame Retardancy Partnership, which used the Sustainable Futures tools to evaluate the toxicity of a variety of potential flame retardant alternatives.
- OPPT and the Synthetic Organic Chemical Manufacturers Association (SOCMA) recently signed a Memorandum of Understanding designed to provide training and technical assistance to companies and other stakeholders interested in learning about and applying Sustainable Futures tools.

Signing of the SOCMA MOU is an indication of the value stakeholders place on this and similar voluntary EPA partnerships that have evolved into privately operated programs.

- The Government Accountability Office (GAO) June 2005, issued "Chemical Regulation: Options Exist to Improve EPA's Ability to Assess Health Risks and Manage Its Chemical Review Program (<http://www.gao.gov/cgi-bin/getrpt?GAO-05-458>)," a report that includes a discussion of the use of chemical-screening models, such as those used in the Sustainable Futures program, to assess chemicals under the Toxic Substances Control Act (TSCA).

More information on Sustainable Futures and the PBT Profiler (<http://www.epa.gov/oppt/newchems/pubs/sustainablefutures.htm>).

## *PBT Profiler*

OPPT and stakeholder collaboration under Sustainable Futures has spawned development of innovative chemical screening methodologies such as the PBT Profiler for persistent, bioaccumulative and toxic chemicals. Praised by industry and environmental groups alike, the PBT Profiler is a no-cost, easy-to-use, web-based tool that allows users to receive quantitative estimates of the environmental persistence (P), bioconcentration potential (B) and toxicity (T) of chemicals.

## Accomplishments

- Between January 2005 and December 2006, stakeholders conducted over 55,000 PBT screening assessments using the PBT Profiler.
- Since its public release in December 2002 through December 2006 stakeholders have conducted more than 100,000 independent PBT screening assessments, making the PBT Profiler one of the most widely used chemical screening tools.

More information on Sustainable Futures (<http://www.epa.gov/oppt/newchems/pubs/sustainablefutures.htm>) and the PBT Profiler (<http://www.pbtprofiler.net/>).

### ***AIM - New Analog Tool***

OPPT is beta-testing a new tool, the Analog Identification Methodology (AIM), which will help stakeholders conduct human health hazard assessments by identifying closely related structures with test data.

#### **Accomplishments**

- More than 150 stakeholders are participating in the AIM beta test.

More information on Sustainable Futures (<http://www.epa.gov/oppt/newchems/pubs/sustainablefutures.htm>) and AIM (<http://www.epa.gov/oppt/newchems/presentations/sf/sf-aim1a.pdf>).

### ***Resource Conservation Challenge***

The Resource Conservation Challenge (RCC) (<http://www.epa.gov/epaoswer/osw/conserve/>) is a joint effort between OPPT and EPA's Office of Solid Waste to promote more flexible and protective ways to prevent pollution and promote recycling and reuse of materials; reduce the use of toxic chemicals; and conserve energy and materials.

OPPT has the lead on three projects that are key to achieving RCC goals:

- Reducing Toxic Chemicals of National Concern;
- The Federal Electronics Challenge (FEC); and
- Electronic Products Environmental Assessment Tool (EPEAT).

Reducing Toxic Chemicals of National Concern (TCNC) is one of two strategies to achieve RCC's overarching goal of eliminating or reducing priority chemicals and other chemicals of national concern from commercial products, waste streams, and industrial releases through pollution prevention, waste minimization, recycling and reuse. The TCNC approach will focus initially on the universe of substances already identified as being of concern under various federal environmental statutes.

The program will establish a process with relevant manufacturers, processors, users, and other stakeholders to identify, implement, and realize reduction opportunities.

#### **Accomplishments**

- OPPT, working with EPA regions and program offices, developed a process for implementing TCNC, and solicited proposals for chemicals to be reduced under TCNC. The TCNC Workgroup developed a set of review criteria, evaluated the first set of proposals, and developed recommendations for management for chemicals to be reduced.

More information on the Resource Conservation Challenge (<http://www.epa.gov/epaoswer/osw/conserves/priorities/chemical.htm>).

### ***Federal Electronics Challenge***

The Federal Electronics Challenge (FEC) is a voluntary partnership program that empowers federal agencies to manage their electronics in an environmentally sound manner during all three life-cycle phases - acquisition and procurement, operation and maintenance, and end-of-life management of these assets. FEC is a flexible program that allows each partner to determine its own level of commitment. Partners target at least one life-cycle phase, setting goals to address their priorities.

The goals of the program are being achieved in part by:

- Purchasing environmentally preferable electronic equipment, including computer desktops, laptops, and monitors registered under the Electronic Product Environmental Assessment Tool (EPEAT) system (<http://www.epa.gov/epp/pubs/products/epeat.htm>);
- Enabling ENERGY STAR power management features on computers and monitors;
- Extending the life span of equipment through internal reuse and donation;
- Increasing the recovery rate and expanding the infrastructure for environmentally sound electronics recycling;
- Reducing the volume and toxicity of electronic equipment waste.

### **Accomplishments**

- As of December 2006, FEC has 119 partners, representing 18 federal agencies, and covering more than 330,000 employees.
- In the first quarter of 2006, 28 partners joined the program, and membership continues to grow at this pace.
- Twenty-two FEC partners received an FEC 2006 Award for their accomplishments in 2005. Seven partners from two agencies received an FEC Gold Award, five partners from four agencies received an FEC Silver Award, and 10 partners from four agencies received an FEC Bronze Award. The FEC Gold Award winners also received the White House Closing the Circle Award. Award applicants were required to complete activities listed on the FEC Gold, Silver, or Bronze Award Checklists, which are designed to put partners on a path towards achieving the FEC's program goals.

More information on the Federal Electronics Challenge (<http://www.federalelectronicschallenge.net/>).

### ***EPEAT - Assessing Electronics***

The Electronic Products Environmental Assessment Tool (EPEAT) includes two major elements:

- A set of environmental performance criteria for computers and monitors that have been adopted as an American National Standard by the Institute of Electrical and Electronics Engineers (IEEE) through a voluntary consensus process. The standard is IEEE 1680 (<http://www.epeat.net/Criteria.aspx>).
- A Web-based system that enables three things: (1) manufacturers to declare that their product(s) meet specific environmental performance criteria; (2) the verification of the accuracy of the declarations; and (3) a listing of all registered products for purchasers. The system is managed by the Green Electronics Council (<http://www.greenelectronicscouncil.org/>).

Development of the Electronic Products Environmental Assessment Tool (EPEAT) (<http://www.epa.gov/epp/pubs/products/epeat.htm>) was prompted by a growing demand by institutional purchasers for an easy-to-use evaluation tool that allows the selection of electronic products based on environmental performance. Supported by EPA, it was developed by a multi-stakeholder group, including government, industry, non-governmental organizations and purchasers. The electronics industry has welcomed EPEAT as a tool to provide a consistent and harmonized set of environmental criteria for all purchasers and an opportunity to gain market recognition through environmental leadership.

### **Accomplishments**

- In February 2005, EPA awarded a grant to the Green Electronics Council to: (1) register products as meeting the IEEE American National Standard 1680 (<http://www.epeat.net/Criteria.aspx>) for the Environmental Assessment of Personal Computer Products; and (2) market the list of "EPEAT registered" products to purchasers and manage an after-market vendor claim certification program.
- In March 2006, the IEEE Standards Advisory Board formally approved the IEEE American National Standard 1680 for the Environmental Assessment of Personal Computer Products.
- In March 2006, EPEAT was integrated into information technology contracts totaling \$21.68 billion, including one of EPA's large IT contracts.
- In April 2006, The IEEE 1680 American National Standard for the Environmental Assessment of Personal Computer Products became final and publicly available.
- On July 24, 2006, a website housing all vendor self declarations that their products meet EPEAT criteria became available for institutional purchasers to access.
- As of December 2006, approximately 300 products manufactured by 13 manufacturers (Apple, CTL Corporation, Dell, Gateway, HP, Lenovo, Mind Computer Products, NEC Display Solutions, Northern Micro, Panasonic, Sona Computer, Sony Corporation, and Toshiba) were EPEAT registered and listed on the EPEAT Product Registry Web page located at <http://www.epeat.net/>.
- As of December 2006, EPEAT has been integrated into IT "requests for proposals" and contracts totaling more than \$42 billion dollars.

More information on EPEAT (<http://www.epa.gov/epp/pubs/products/epeat.htm>).

## Cross-Cutting Programs



The Office of Pollution Prevention and Toxic's (OPPT) accomplishments in 2005 and 2006 encompass a range of activities that provide support across our individual programs and, in some cases, enhance other EPA programs. These activities have helped OPPT improve access to information about chemicals, assess progress toward achieving program goals, strengthen collaboration and partnerships with other EPA programs and stakeholders, and develop tools and models to improve risk assessment and

risk management.

### Accomplishments

- EPA's Design for the Environment (DfE) (<http://www.epa.gov/dfe/>) has been working collaboratively with the Agency's Community Action for a Renewed Environment (CARE) Program and its Office of Air Quality Planning and Standards (OAQPS) Community Air Toxics Campaign to implement best practices that reduce hazardous air pollutants (HAPs) and volatile organic compounds (VOCs) in community initiatives focused on auto body and refinishing businesses. OAQPS is considering including several cost-effective DfE best practices as a pollution-prevention component in the area source regulation being developed. The chemicals used in auto body shop operations are highly toxic and pose a threat to the health of workers, neighbors, and the environment. They include diisocyanates (the leading cause of occupational asthma), volatile organic solvents, sanding dusts containing lead and hexavalent chromium, and metal fumes from welding operations. Implementation of best practices in all 50,000 auto body shops nationwide could reduce VOCs and HAPs by 174 million pounds per year, while saving businesses money by reducing paint and solvent costs, as well as related hazardous waste disposal costs.
- Information Technology (IT) Support - OPPT continues to modernize the information holdings and workflow processes to better enable staff, managers and the public to manage and evaluate risks. Proceeding under the Agency's Enterprise Architecture Program, this effort ultimately will result in data being integrated across the office and all key documents being stored and centrally accessible. All submissions will be submitted and processed electronically, utilizing electronic workflow processes. Current data flows being modernized include the Inventory Update Rule and the New Chemicals Program.
- Information Technology (IT) support is a critical factor in enabling OPPT's individual programs to achieve their goals. The office depends on IT support to provide the necessary infrastructure and assist with smooth operations in order to carry out its important mission of chemical risk management and pollution prevention. These activities include providing desktop support and server enhancements. Another key activity is maintaining an Internet presence to provide OPPT's customers with the information they need help prevent pollution and evaluate the risks associated with new and existing chemicals.
- OPPT also processes Freedom of Information Act (FOIA) requests related to the Toxic Substances Control Act and other statutes and policies for which OPPT has responsibility. During this reporting period, OPPT processed more than 75 FOIA requests.

## ***Assessing Results - OMB's PART***

The Office of Management and Budget (OMB) developed the Program Assessment Rating Tool (PART) in FY 2002 to assess the extent to which federal government programs are well-designed, well managed and generating intended results. All federal programs are to be evaluated over a five year period, and re-evaluated as necessary.

Four OPPT programs have undergone rigorous PART assessments to date: new chemicals, existing chemicals, pollution prevention, and lead.

### **Accomplishments**

- OPPT's pollution prevention program received an 82.7 percent rating from the Office of Management and Budget on its Program Assessment Rating Tool (PART) effectiveness review, the third highest among the 60 EPA programs assessed to date.
- OPPT's Childhood Lead-Based Paint Risk Reduction Program underwent its initial PART assessment in FY 2005, obtaining 79 percent, the fourth highest score among EPA programs assessed to date. Lessons learned from that assessment led to adoption of improved procedures for overseeing program partners' contributions towards program goals and integration of headquarters and regional office operations.
- PART's recognition of the strength of OPPT's programs reflects the office's commitment to performance-based management - setting ambitious yet achievable outcome goals, monitoring progress towards those goals, and using performance information in making key management decisions. It also reflects the support provided to program managers from OPPT's financial management system.

More information on PART (<http://www.omb.gov/part>).

## ***Advice From Our Federal Advisory Committee***

OPPT established the National Pollution Prevention and Toxics Advisory Committee (NPPTAC) in 2003 to give the office informed consensus feedback from a balanced group of stakeholders and the public on its policies and strategies in pollution prevention and chemicals management. This Committee, chartered under the Federal Advisory Committee Act (FACA), draws upon the experience and ideas of members who span the full array of stakeholder groups including public interest, industry, states, tribes and academia.

### **Accomplishments**

- The NPPTAC has met nine times since November 2003.
- The Committee has focused on the High Production Volume (HPV) Challenge Program, Pollution Prevention (P2), tribal issues, lead, the Globally Harmonized System of Classification and Labeling, and nanoscale materials.
- The NPPTAC has transmitted a total of nine consensus recommendations to the EPA Administrator as well as a major overview document on nanoscale materials. Of those, the Committee delivered eight of these recommendations and the Nanoscale Materials Document since January 2005.

More information on the National Pollution Prevention and Toxics Advisory Committee (<http://www.epa.gov/oppt/npptac/>).

### ***Forum on State and Tribal Toxics Action***

The Forum on State and Tribal Toxics Action (FOSTTA) is a partnership among state and tribal leaders and OPPT. Its mission is to increase understanding and to improve collaboration on toxic chemicals and pollution prevention issues among the states, tribes, and EPA.

#### **Accomplishments**

- In 2005 and 2006, three committees - the Chemical Information and Management Project (CIMP), the Pollution Prevention (P2) Project, and the Tribal Affairs Project (TAP) - carried out the major FOSTTA activities. The collaboration among these partners focused on the High Production Volume (HPV) Challenge Program, P2 strategies, tribal lifeways and risk assessment, and the challenges of cross-cutting toxics issues in state agencies.
- CIMP was instrumental in planning and implementing "Characterizing Chemicals in Commerce," the first HPV-data users conference, held December 12-14, 2006, in Austin, Texas. The conference highlighted the availability of chemical hazard data in OPPT's HPVIS database, and other publicly available databases.
- TAP has been engaged in prioritizing the many tasks listed in the OPPTS Tribal Strategy.
- The P2 Project meets with the Multi-Media Pollution Prevention (M2P2) Office Directors Forum - a standing group of EPA office directors focused on cross-media and P2 integration issues. These meetings help other EPA offices to understand state-related P2 issues better and to consider integrating P2 solutions into their regulatory and voluntary programs.
- States and tribes are exploring collaborative efforts to reduce exposure to mercury.

More information on the OPPT Tribal and Environmental Network (<http://www.epa.gov/opptintr/tribal/>).

### ***OPPT Tribal Program***

OPPT is committed to working in partnership with tribal governments to safeguard and protect the environment from toxic hazards and to promote pollution prevention in Indian country. The first priority of the OPPT Tribal Program is improving communication so that we can better exchange information regarding environmental concerns and issues facing Indian country today.

#### **Accomplishments**

- OPPT publishes the OPPTS Tribal newsletter, which features articles that encourage "greening" initiatives in Indian country. Other articles have featured the National Museum of the American Indian Grand Opening, P2 Resources at EPA, Science and Technology at ORD, Grants and Awards, the 7th National Tribal Conference on Environmental Management and a calendar of events.

- OPPT is working with a Tribally-owned contractor to advance pollution prevention in Indian country particularly as it pertains to economic development and re-development incorporating green buildings.

Additional information on OPPT's Tribal Program (<http://www.epa.gov/opptintr/tribal>).

### ***Risk Assessment Tools - RSEI Model***

The Risk-Screening Environmental Indicators (RSEI) Model is a screening tool that evaluates industrial releases and transfers of toxic chemicals using risk-related concepts. RSEI systematically considers important factors related to chronic human health risks to identify the best opportunities for hazard or risk reduction.

#### **Accomplishments**

- In 2005, the RSEI Team worked with a variety of clients to interpret and utilize risk-related information on industrial releases at the national, regional, and local level. For example, the RSEI Team consulted with EPA's Sector Strategies Program on using RSEI toxicity weights to identify priority chemicals in key industries.
- At the regional level, the RSEI Team worked with EPA Region 4 on county-specific facility rankings for pollution prevention activities in Florida.
- At the local level, the RSEI Team responded to requests to identify top-ranked chemical releases from a risk-related perspective in Harris County, Texas and Orange County, Florida.

More information on the Risk-Screening Environmental Indicators Model (<http://www.epa.gov/oppt/rsei/>).

### ***E-FAST Exposure Model***

The Exposure and Fate Assessment Screening Tool (E-FAST) accepts user-supplied chemical data to model screening-level estimates of the concentrations of chemicals released to air, surface water, landfills, and from consumer products. Inhalation, dermal exposure, and ingestion potential dose rates are also estimated from these releases. Because this is a screening-level tool, these estimates are designed to be conservative - on the high end or greater than expected results. E-FAST evolved from tools designed to support the EPA's New Chemicals and Existing Chemicals Programs.

#### **Accomplishments**

- E-FAST has been subjected to an independent peer review by the Science Advisory Board in accordance with EPA's Peer Review Handbook.
- Version 2.0 of E-FAST was completed in March 2006 and is now available. It incorporates revisions recommended by external peer review comments from the general population, down-the-drain and aquatic ecological exposure and risk (Probabilistic Dilution Model) modules of E-FAST.
- The consumer exposure module of E-FAST was peer reviewed earlier.

To download and install E-FAST V2.0 (<http://www.epa.gov/oppt/exposure/pubs/efast.htm>). This Web site also provides a description of updates in E-FAST V2.0, Question and Answers

about E-FAST V2.0, and a computer-based training introductory course. In addition, the E-FAST V2.0 Documentation Manual and selected references are available as PDF files.

### ***OncoLogic™, ECOSAR and AQUATOX***

Tools and models are used in the hazard, exposure and risk assessment processes to evaluate both new and existing chemicals under TSCA when certain data are missing. Some of these models include the OncoLogic™ for health hazard evaluation, and ECOSAR and AQUATOX for environmental effects and fate.

OncoLogicT is a stand alone computer program that evaluates the potential that a chemical may cause cancer. OncoLogic, which provides the scientific rationale for each evaluation along with the results, has been peer reviewed and runs on a Windows® PC. EPA's Web site provides a downloadable version of OncoLogic (<http://www.epa.gov/oppt/newchems/tools/oncologic.htm>) along with extensive information on proper use of the method. OncoLogic analyzes a chemical structure to determine the likelihood that it may cause cancer by applying the rules of structure activity relationship (SAR) analysis and incorporating knowledge of how chemicals cause cancer in animals and humans. OncoLogic is comprised of four subsystems that evaluate fibers, metals, polymers, and organic chemicals of diverse chemical structures.

ECOSAR (Ecological Structure Activity Relationships) is a personal computer software program that is used to estimate the toxicity of chemicals used in industry and discharged into water. The program predicts the toxicity of industrial chemicals to aquatic organisms such as fish, invertebrates, and algae by using Structure Activity Relationships (SARs). The program estimates a chemical's acute (short-term) toxicity and, when available, chronic (long-term or delayed) toxicity. ECOSAR also allows access to over 100 SARs developed for 48 chemical classes. The SARs contained within the program are based on test data. Many of the SAR predictions have been validated.

AQUATOX is a simulation model for aquatic systems. AQUATOX predicts the fate of various pollutants, such as nutrients and organic chemicals, and their effects on the ecosystem, including fish, invertebrates, and aquatic plants. This model is a valuable tool for ecologists, biologists, water quality modelers, and anyone involved in performing ecological risk assessments for aquatic ecosystems.

### **Accomplishments**

- AQUATOX: During 2005 and 2006, OPPT funded the development of a version of AQUATOX relating to estuaries, and a comparison of predictions of AQUATOX on the fate and effects of nonylphenol and pefluoralkylated surfactants. In addition, EPA's Office of Water (OW) and OPPT jointly funded the inclusion of the Office of Research and Development - Gulf Breeze Lab "Interspecies Correlation Estimations (ICE) for Acute Toxicity to Aquatic Organisms and Wildlife" into AQUATOX. These enhancements have been included in the upcoming Release 3 of AQUATOX, which is scheduled to be completed and released by OW in 2007.
- OncoLogic: In 2005 EPA obtained commercial rights to OncoLogic, and in 2006 EPA posted a downloadable version of OncoLogic on the EPA web site so that this valuable predictive method will now be available, at no cost, to any researcher or organization wishing to evaluate cancer potential of chemicals. OncoLogic has received increasing international recognition as a result of several recent publications affirming its predictive capability. It was an invited presentation at a European Union (EU) workshop in 2006 and was selected by the EU for future inclusion in the

Organization for Economic Cooperation and Development (OECD) (Q)SAR Application  
Toolbox for cancer.

More information on the OncoLogic™ (<http://www.epa.gov/oppt/cahp/pubs/can.htm>),  
ECOSAR (<http://www.epa.gov/oppt/newchems/tools/21ecosar.htm>), and AQUATOX  
(<http://www.epa.gov/ost/models/aquatox>).