BFR Regulatory Update

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US EPA addresses flame retardants primarily through activities under the Toxic Substances Control Act (TSCA). Work has focused on the brominated flame retardants polybrominated diphenylethers (PBDEs), several congeners of which have been detected in humans, fish, and elsewhere in the aquatic environment as part of environmental monitoring programs in Europe, Asia, North America, and the Arctic. The Agency is addressing PBDE information needs with a three-pronged approach which includes:

- efforts to better understand the environmental properties, exposure pathways, and how these chemicals are getting into human tissue,
- research and detailed testing to determine health and environmental effects, and
- evaluation of potential substitutes, which includes the analysis of risk-risk trade-offs related to fire prevention and toxicity.

TSCA

EPA is working with chemical manufacturers to facilitate an orderly transition into safer substitutes. In November, 2003, Great Lakes Chemical Corp., the only U.S. manufacturer of pentaBDE and octaBDE, announced a voluntary phase out of both those chemicals by the end of 2004. To follow up on this voluntary action, EPA is currently developing a rule to require notification to EPA prior to manufacture or import of Penta- or OctaBDE for any use after January 1, 2005. EPA is also developing a rule to complement a national flammability standard for residential upholstered furniture under consideration by the Consumer Product Safety Commission (CPSC). This second rule would require notification to, and review by, EPA of 16 flame retardant chemicals or categories of chemicals (including decaBDE and HBCD) identified by CPSC and industry as likely to be used to flame retard fabrics on furniture in order to comply with such a standard.

TSCA contains an “unreasonable risk” regulatory standard, which is the basis for control of new FRs introduced into commerce through the Agency’s New Chemicals Program and certain brominated flame retardants being subject to testing for quantity of Dioxin/Furan contamination under the Agency's 1987 TSCA Section 4 Dioxin/Furan Test Rule (40 CFR 766). Since 1979, approximately 150 Premanufacture Notices (PMNs) submitted for new flame retardant chemicals have been reviewed by US EPA.

EPA's Office of Pollution Prevention and Toxics, which oversees TSCA regulatory programs, has also had success in efforts to get industry to respond voluntarily to filling information gaps on certain BFRs. Penta-, octa-, and decaBDEs are three of 23 chemicals that have been sponsored by industry in EPA's Voluntary Children's Chemical Evaluation Program (VCCEP). The goal of VCCEP is to enable the public to better understand the potential health risk to children associated with certain chemical exposures. EPA has asked companies which manufacture and/or import 23 chemicals that have been found in human tissues and the environment in various monitoring programs to volunteer to sponsor their evaluation in Tier 1 of a pilot of the VCCEP. Sponsorship requires the companies to collect or develop health effects and exposure information on their chemical(s) and then to integrate that information in a risk assessment and a "data needs" assessment. The assessments developed by the sponsors will be evaluated by a group of scientific experts using a peer consultation process. Experts have experience in toxicity testing, exposure evaluation, and risk assessment. The VCCEP Peer Consultations on PBDEs occurred in 2003 on April 2-3 (decaBDE) and June 3-5 (octa- and pentaBDE), in Cincinnati. The decaBDE meeting report was released September 30, 2003 and the report on Penta and Octa January 22, 2004. EPA will independently review the meeting reports and sponsors' assessments with an anticipated release of its reviews by late Spring 2004. EPA will consider the results of the Peer Consultations and use them to determine whether additional information is needed to fully characterize PBDE risks to children.

USEPA is also working with the California Bureau of Home Furnishings and Thermal Insulation to coordinate its activities with the upcoming revisions to California Technical Bulletin (TB) 117. TB 117 is a flammability standard for all residential, upholstered furniture sold in California. EPA's plans to promulgate, if the timing of these activities can be properly coordinated, a TSCA Significant New Use Rule (SNUR). The SNUR, which will also support a similar flammability standard for residential upholstered furniture proposed by the US Consumer Product Safety Commission (CPSC), would provide USEPA the opportunity to review FR chemicals prior to their manufacture, import, or processing for use in this application.

EPA Research and Other Activities

EPA's ORD

Directly or through grant mechanisms, EPA research managed by the Office of Research and Development is aimed at determining PBDE levels in kids, house dust, food, and breast milk; developmental and reproductive toxicity of the chemicals, and the environmental fate of the PBDEs upon their release or after disposal and incineration of electronic equipment.

Design for the Environment (DfE)

The furniture manufacturing industry and EPA's Design for the Environment (DfE) Program have initiated a partnership to explore a variety of approaches to achieve environmentally sound fire protection. Approaches may include:

- Green Chemistry Solutions: Environmentally conscious design of chemical products and processes
  - Identify and evaluate existing flame retardant chemicals for furniture foam and fabric
  - Issue Green Chemistry Challenge to encourage environmentally-preferable flame retardants
- Green Engineering Solutions: Sustainable Design of Products and Processes
  - Identify and evaluate barrier technologies
  - Identify and evaluate alternative formulation of foams
  - Issue Design Challenge to address environmental impact of entire supply chain

These approaches focus on both the materials and the chemicals used in furniture including: foam, fabric, barrier and filling materials and their respective flame retardant chemicals. The partnership aims to look at the performance of furniture holistically - including cost, functionality and environmental, human health and fire safety attributes.

Exploring these approaches will engage a variety of stakeholders, including furniture manufacturers, foam manufacturers, product safety groups, industrial designers, chemical companies, and environmental groups. This process may result in clear solutions, or may demonstrate the need for incremental improvements and additional research.

Integrated Risk Information System (IRIS)

EPA is conducting an IRIS reassessment of PBDEs to be completed by the end of 2004.

Regional Activities

Region 9 (San Francisco) – work with the DfE partnership on FR alternatives; 2002/2003 workshops on BFRs in foam and electronics.

Region 1 (Boston) – Established working relationship with National Association of State Fire Marshals, issued joint statement on flame retardants

Regions 4 (Atlanta) & 5 (Chicago) – Research initiatives, including monitoring in Great Lakes, potential for leaching of PBDEs from discarded electronics.