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## Seeing Risks Exceed Benefits, Scientists Seek Limits On Flame Retardants

A new study by environmentalists and a top former EPA researcher claims that the health risks posed by flame-retarding chemicals used in furniture outweigh the safety benefits industry officials argue the chemicals provide in reducing the risk of fires, bolstering a call from scores of scientists for limits on the chemicals' use, disposal and toxicity.

"Flame-retardant chemicals can pose a potentially greater hazard to health and environment than the risk of the fires they are supposed to prevent," according to the study, "PBDES and Their Replacements: Does the Benefit Justify The Harm?"

The study says that many flame-retardant chemicals may even increase the risk of death in home fires because they increase exposure to carbon monoxide, smoke and other harmful substances. "Most fire deaths and most fire injuries result from inhalation of fire effluents such as carbon monoxide, irritant gases, and soot," according to the abstract. "Although the incorporation of halogenated flame retardants can reduce the ignitability and heat release of a material, they also increase the yield of such toxic products when combustion occurs."

The authors suggest that federal product safety officials preempt California's strictest-in-the-nation furniture safety standard that critics have long charged drives the use of the chemicals.

Like the just-issued scientific call for limits on the chemicals' use and toxicity, the study also recommends that the chemicals — especially the next generation of flame retardant chemicals — be tested for their health and environmental risks and that regulators use other methods of preventing furniture fires, such as internal barriers and fire-safe cigarettes.

The call appears to put new pressure on EPA and state regulators in California and elsewhere to further clamp down on the chemicals and their alternatives.

The study — authored by National Institute of Environmental Health Sciences Director and former EPA researcher Linda Birnbaum, along with long-time flame retardant-opponent and University of California Berkeley chemistry professor Arlene Blum and Susan Shaw, president of the Marine Environmental Research Institute — was presented at the Dioxin 2010 conference in San Antonio, TX, last month, along with the statement voicing concerns about the use of flame retardants.

### San Antonio Statement

The "San Antonio Statement on Brominated and Chlorinated Flame Retardants" lists a number of concerns about the chemicals, including their persistence and toxicity, the difficulty in safely disposing them and the fact that if burned, they produce dioxins and furans, according to a copy of the statement released Oct. 28.

The statement signatories agree that more data about the chemicals' properties should be available and that "efforts should be made to ensure that current and alternative chemical flame retardants do not have hazardous properties," among other statements.

The statement has been signed by 145 scientists from 22 countries, since it was presented at the September conference. The statement and signatories names were published Oct. 28 on the website of the journal *Environmental Health Perspectives* along with an editorial in the journal written by Birnbaum and Stockholm University professor Åke Bergman.

"The [statement] addresses the growing concern in the scientific community about the persistent, bioaccumulative, and toxic properties of . . . [brominated flame retardants (BFRs) and chlorinated flame retardants (CFRs) respectively] and the exposure to humans and wildlife as a result of intensive use," Birnbaum and Åke write. "The San Antonio Statement represents a reasoned plea from the scientific community to consider the impacts of our use of BFRs and CFRs both for now and for the future."

Release of the study comes as EPA is already taking some steps to limit flame retardants. The agency issued a chemical action plan last December that proposes writing new significant new use rules which would require manufacturers to notify EPA before producing certain polybrominated diphenyl ethers (PBDEs).

The plan also announces the agency's intent to add PBDEs to its list of chemicals of concern and its support for a voluntary industry phaseout of deca-BDE by 2013.

California and other states have also put limits on some flame retardants' production, though industry has strongly resisted state efforts to significantly curtail their uses.

While officials are taking steps to address the chemicals' safety, regulators are increasingly raising concerns about their presence in the environment. A 2009 report from the National Oceanic & Atmospheric Administration found elevated levels of PBDEs along all U.S. coastal waters, as well as throughout the Great Lakes — a finding at odds with previous

research indicating that PBDE contamination was restricted to a limited number of sites.

### **Risk-Risk Tradeoff**

The issue of product safety standards driving the use of harmful chemicals poses a tricky risk-risk tradeoff for policymakers as they seek to balance competing concerns from some fire safety officials who favor strict product flammability standards while EPA, environmentalists and public health officials are eager to limit the use of the harmful chemicals.

Of particular concern to environmentalists is California's flammability standard, which requires furniture and children's products to withstand igniting when exposed to an open flame for as long as 12 seconds. Attempts to change this flammability standard, or exempt some products from meeting it, have been met with overwhelming chemical industry resistance in Sacramento.

Environmentalists have sought to change California's flammability standard after realizing that simply banning a flame retardant chemical leads the manufacturers to produce substitutes with similar properties, Blum said during an Oct. 27 presentation to the Great Lakes Green Chemistry Network.

As a result, critics of the standard are increasingly looking to a pending new flammability standard being crafted by the federal Consumer Product Safety Commission (CPSC), which they hope will pre-empt the California standard and limit the use of chemicals the critics say persist in the environment and are linked to liver and thyroid toxicity, neurological problems and reproductive issues.

The CPSC's proposed standard is not an open-flame test, and would not require the use of chemicals to meet. Instead, manufacturers could use internal barriers in furniture to meet the standard. The researchers indicate that if implemented, the new standard "which regulates fabric flammability rather than foam," could "greatly reduce the use of halogenated flame retardants in furniture and baby products across North America."

The most recent federal regulatory agenda shows that CPSC published a notice of proposed rule-making in 2008. CPSC staff sent the commission a status report on the proposed rule in June. A CPSC source says that staff "have been doing additional research to support the rule," and are "planning to get a package of regulatory options to our commissioners ASAP." However, the source adds that there is "no time line" for when the rule will be finalized, and that more research is planned in the 2011 fiscal year.

Birnbaum and Åke's editorial also raises the concern about flame retardant substitutes: "The San Antonio Statement is a call for attention to a continuing pattern of unfortunate substitution. Since the 1970s, BFRs and CFRs have commonly served as substitutes for other BFRs and CFRs, even though there have been early warnings and periodic reminders about the problematic properties of these chemicals. To maintain fire safety, safer alternatives to harmful BFRs and CFRs should be developed." — *Maria Hegstad*