

Do Flame Retardants Save Lives? How Peer-Reviewed Science Can Impact Regulatory Decision-Making

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Scientific papers about fire retardants often begin by stating, "Fire retardant chemicals save lives." Fire retardants can slow ignition, but they don't stop fires. The reduction in fire deaths from this slowed ignition is difficult to quantify. According to the National Fire Protection Association, the leading source of fire data in North America, "U.S. fire data is not detailed or complete enough to show whether adding fire retardant chemicals to furniture foam in California since 1980 has made a measurable difference in fire deaths in that state."

In the early 1980s, California began to implement Technical Bulletin 117 (TB117), which requires foam in upholstered furniture and baby products to withstand exposure to an open flame for twelve seconds. The foam industry estimates that 25% of furniture manufactured in Canada and states outside California complies with TB117. There is no mandatory flammability standard for the cover fabric; TB117's effectiveness is limited because fabric will ignite first. Until 2004, TB117 was primarily met by adding pentaBDE to foam. In 2002, 98% of the usage of pentaBDE, which has been found to be a global contaminant, was in North America, presumably to meet TB117. PentaBDE was banned in California in 2003; the manufacturer voluntarily ceased production in 2004. The main replacements were Firemaster 550, a mixture of four fire retardant chemicals lacking health information, and tris (1,3-dichloro-2-propyl) phosphate, known as TDCP or chlorinated tris, a probable human carcinogen that had been removed from children's sleepwear in 1977 due to its mutagenicity.

Reducing sources of ignition can prevent fires without adding potentially toxic chemicals to consumer products. The over 50% decrease in fire deaths nationwide since 1980 has been explained by a 50% decrease in per capita cigarette consumption; enforcement of improved building, fire, and electrical codes; and the increased use of smoke detectors and sprinklers. The introduction of fire safe candles as well as legislation mandating fire safe cigarettes in 44 states should bring further reductions in fire deaths. The contribution of fire retardant chemicals has not been documented in the peer-reviewed literature. Nonetheless, a dozen new flammability standards for electronics, furniture, bed coverings, children's toys, and wooden pallets, promoted by the fire retardant chemical industry, could bring hundreds of millions of pounds of additional fire retardant chemicals and materials lacking adequate health information into homes and the environment annually.

Recently, a number of industry efforts to increase the usage of fire retardant chemicals failed after peer-reviewed scientific information was brought into the regulatory decision-making: (1) five international electronics standards which would have required the housings of consumer electronics products worldwide to resist a candle flame, (2) proposed U.S. open flame standards for foam in furniture and children's toys, (3) proposed furniture flammability legislation modeled on California's TB117 in Illinois, Pennsylvania, New Jersey and New York.

This presentation will discuss the origins of fire safety standards, how they are used to market chemicals, and how alternative strategies can provide fire safety without toxicity.