# Fast Facts on Fire Safety and Flame Retardants

Recent news reports about flame retardants have been inaccurate and misleading. The following facts clear up some of the misconceptions about flame retardants and highlight the benefits of this important fire safety tool box.

## 5 FAST FACTS…

**1. The threat of fire is still a serious problem.**

Flame retardants have played a key role in reducing the incidence of fire on a global scale. But unfortunately, despite the perceptions of some that fires are no longer a cause for concern, fire dangers continue to exist. Brominated flame retardants have been reducing the risk of fires in everyday products such as electronics, textiles and furniture. Fire statistics from sources around the world show that:

- At least 94% of fire deaths occur in homes and buildings.[1]
- In developed countries, fires kill 10 to 20 people per million of the population per year. [2]
- Every year, fire is likely to kill over 2,000 people in Europe alone.[3]
- Nearly 4,000 will probably die in the United States[4] and about 250 in Canada.[5]
- In 2011 fires caused 26,343 deaths in India[6] and more than 1700 in Japan.[7]
- In China, there were 125,402 fire accidents with 1,106 deaths and 572 people injured in 2011.[8]
- In 2007, fires caused 1,206 deaths in 5 different regions of Brazil.[9]
- The total direct and indirect cost of fires, including economic consequences of deaths and injuries, is estimated to be around 1% of GDP in the developed world.[2]
    - In economic terms, this is equivalent to about €12.6 bn or 0.17% of GDP in Europe.[3]
    - In 2011 all fires caused US $11.7 billion in property damage in the USA.[4]
    - In 2007 all fires caused CA $1.5 billion in property damage in Canada.[5]
    - In 2009 costs of direct fire losses were estimated at ¥605 billion in Japan (US $7.40 billion).[10]
    - In 2011 direct economic losses valued at 1.88 billion Yuan (US $297 million) in China.[8]

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[1] Center of Fire Statistics of CTIF, "*World Fire Statistics, Report No.10",* 2006, http://ec.europa.eu/consumers/cons_safe/presentations/21-02/ctif.pdf
[2] ISO/TC92 Fire Safety Secretariat, *"Fire safety in ISO – Information about ISA/TC 92"* http://www.sp.se/sv/units/fire/Documents/BR/ISO_TC_92_Information_Sheet.pdf
[3] ARCADIS EBRC Belgium "*Study of flame retardant substances in consumer products in domestic environments"* - http://ec.europa.eu/consumers/safety/news/flame_retardant_substances_study_en.htm
[4] National Fire Protection Association, Marty Ahrens, "*Home structure fires"*, USA, May 2011, http://www.nfpa.org/assets/files/pdf/os.homes.pdf
[5] CCFM/FC, "*Fire Losses in Canada - Year 2007 and Selected Years*", Canada, 2011, http://www.ccfmfc.ca/pdfs/report_e_07.pdf
[6] National Crime Records Bureau, "*Accidental Deaths & Suicides in India – 2011*", India, 2012 http://ncrb.nic.in/CD-ADSI2011/table-1.6.pdf
[7] Ministry of Internal Affaires and Communications, "*The Number of Fire Cases, Death in Japan*", Japan, 2011
[8] Statement of the Ministry of Public Security, China, 19 January 2012
[9] Datasus (Banco de Dados do sistema público de saúde) – Database of Health Public Services, "Vitimas fatais de incêndios", 2011, http://tabnet.datasus.gov.br
[10] International Association for the Study of Insurance Economics, "*Information Bulletin of the World Fire Statistics Centre" Vol. 28,* Geneva, October 2012, http://www.genevaassociation.org/PDF/WFSC/GA2012-FIRE28.pdf

**2. Flame retardants play an important role in fire prevention.**

Strong fire safety standards help reduce the impact of fires on people, property and the environment. Flame retardants play a key role in helping products meet those standards. They can prevent fires from starting, and if a fire does occur, they slow down its spread and improve the opportunity for safe escape.

Indeed, studies and tests in Europe[11] [12], in the USA[13] and in India[14] showed that flame retardants included in upholstered furniture can provide valuable escape time as they slow down the spread of fires. As an example, the European Commission has estimated a 20% reduction of fire deaths as a result of the use of flame retardants in the past 10 years in Europe.[15]

**3. Flame retardants are used in a variety of products to add a layer of fire protection.**

A whole series of passive and active protective measures are used to 1) prevent a fire from occurring and 2) provide time for escape and for response. These elements create "layers of protection" on which fire safety relies. Flame retardants provide consumers with a critical layer of fire protection and are vital to reducing the risks associated with fire. Today, flame retardants are used predominantly in four major areas: electronics and electrical devices, building and construction materials, furnishings and transportation. The use of flame retardants is especially important today as fuel loads and sources of ignition have increased dramatically in housing, office space and transportation over recent decades.

**4. The debate largely focuses on flame retardants that have been or are being voluntarily phased out**.

There are many different types of flame retardants and they have distinctly different properties. Much of the media coverage has focused on a few members of one family of flame retardants called polybrominated diphenyl ethers (PBDEs). The most commonly referenced members of this family were voluntarily phased out of production globally by BSEF companies in 2004 or earlier.[16] Production and supply of the one remaining PBDE (DecaBDE) will be stopped in the USA in 2013. The PBDE family of flame retardants were developed nearly half a century ago and proved to be work horse products for a wide variety of applications. But, chemistry is rooted in innovation and with increased knowledge and insight about the science of fire, human health and environmental safety new ideas and products are being continuously pursued. Among them are the next generation of fire-safety products, which are in various stages of development, and rely on a variety of materials

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[11] University of Surrey for the UK Department of Trade and Industry (DTI): *"Report on Effectiveness of furniture and furnishing (fire) (safety) regulations 1988"*, 2000

[12] The Alliance for consumer safety in Europe (ACFSE) carried out, in 2010, a fire resistance test of 27 typical household sofas, one from each EU Member State. Each sofa was a two- or three-seater sofa costing less than €400. Their tests demonstrate that furniture manufactured to the UK standard delays the development of a fire by at least 15 minutes longer than even the very best of the rest. http://www.areyousittingcomfortably.eu/en/about-the-campaign

[13] Blais Matthew, "*The Utility of CA TB 117, Does the Regulation Add Value?",* Southwest Research Institute, 2012

[14] *"Safe Public Places thro' FR Textiles , Suggestion from Ministry of Textiles to Ministry of Home Affairs"* - Government of India, Link

[15] EU DG Environment, "*Flame Retardants*". Video, 2000, cited by AEA technology, January 2001

[16] A handful of PBDEs (BDEs 47,99, 100, 153 and 189) are the ones typically mentioned in scientific studies and media reports.

and methods. These new fire-safety chemicals will have to be evaluated for their safety, and go through evaluations by a number of government regulatory bodies before these products can be made and widely used on a global basis.

**5. Flame retardants, like all chemicals, are subject to review and control by regulatory bodies around the globe.**

The US Toxic Substances Control Act (TSCA), the European Regulation on Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), the Canadian Domestic and Non-Domestic Substances lists (DSL&NDSL), the Japanese regulation on Existing and New Chemical Substances (ENCS - MITI) and a number of other laws and regulations around the world, including consumer product safety laws, food safety laws and product liability laws provide further oversight of chemicals in commerce to assure that they are safe for their intended uses.

BSEF companies are committed to complying with these worldwide regulations and are working with regulators, customers and other stakeholders at a regional, national and international level. We intend to ensure the products on the market today will be suitable in the future and when appropriate, we will replace them with newer, safer and more innovative products.