Brominated Flame Retardants

An Essential Part of Modern Life

BSEF
Bromine Science and Environmental Forum

Brominated flame retardants (BFRs) play a critical role in reducing the impact fires have on people and property.

Why do we need flame retardants?

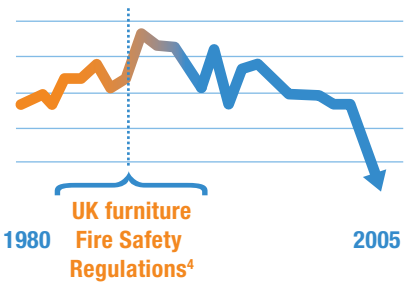
Flame retardants (FRs) are a wide range of substances added to materials to prevent or slow down the growth of a fire.

BFRs act directly on the flame

and interfere with its chemical process

They effectively quench the chemical reactions occurring in the flame, reducing the heat generated and slowing down or even preventing the burning process.

Number of Furniture & Furnishings fires in the UK



Flame retardants are also crucial in meeting fire safety standards, which have become stricter over the past few decades.

These standards decreased the number of fires.

15 minutes

highly flame-retarded sofas, which meet the UK standards, can give at least 15 minutes longer time to escape[1]

Flame retardants give people more time to escape and for the fire brigade to arrive before it is too late.

Studies show that flame retardants help prevent ignition from small open flame sources[2,3] and slow down the spread of fire.

Where are Brominated FRs used?

BFRs are used

in many everyday objects, such as your TV!

Plastic on average[5]

Petrol in terms of potential heat release[6]

Brominated flame retardants make the plastic used in TV casings more resistant to ignition and slow the progress of fire.

2 min
When a non-flame-retarded CRT TV set catches fire, it gives less than 2 minutes of escape time.

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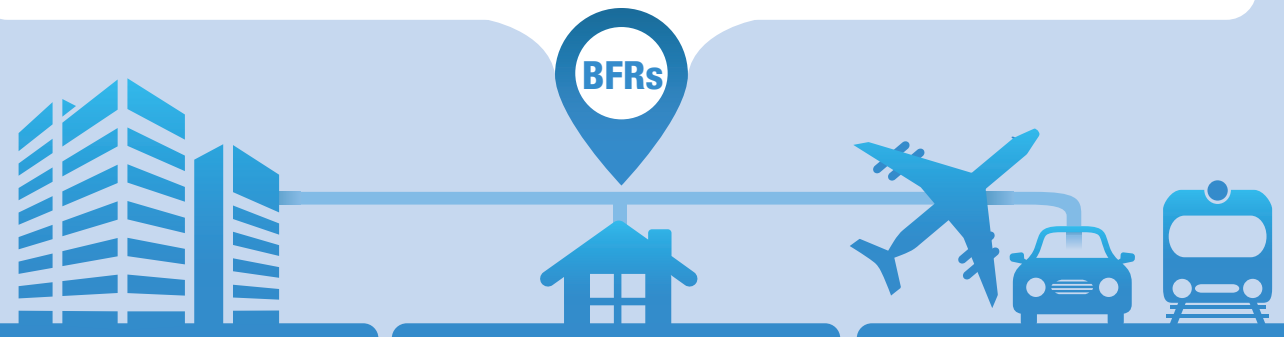
30 min
A flame-retarded TV can provide at least 30 minutes escape time.[7]



Buildings & Public Spaces

From houses to office buildings to clubs or theatres, modern buildings are more comfortable than ever thanks to modern materials such as plastics and insulation foams, which are unfortunately also highly flammable.

Furniture

From cinemas to theatres, comfortable chairs use materials such as polyurethane foam. Flame retardants help assure safety even in crowded places with a high concentration of such materials.

Insulation foams

Insulation foams are in the walls and roofs of our buildings, contributing to critical energy savings.

Like the foams used in upholstered furniture, building insulation foams also carry the risk of being highly flammable, hence the need to make them flame-retarded.

Homes

Modern homes contain highly flammable materials - not only in furniture, but increasingly in electronics.

Electronics with printed circuit boards

Printed circuit boards are essential for most modern electronics.

Plastics used in them have to resist heat generated by the circuit board to be safe and reliable. The reliability of printed circuit boards using brominated flame retardants has been demonstrated in more than 20 years of use.

Upholstered furniture and bedding

Statistics show that lethal domestic fires frequently start either in beds or on sofas. This is why fire resistant fillings and textiles in furniture and bedding are essential.

Transport

BFRs make sure that innovative materials used in modern transport can be used safely and meet strict international fire safety standards.

Airplanes

Airplanes carry a large amount of fuel and the cabin contains plastics, polymers and composites. In ground accidents, flame retardants help ensure passengers can get out of the damaged airplane safe.

Flame retardants were commended for saving lives after the 2013 Asiana Airline crash in San Francisco, as well as after the 2005 crash of a passenger jet in Toronto, in which all 309 people aboard survived.

Trains

Curtains, seat covers and fillings, as well as vertical and horizontal panelling are all rendered fire safe by the application of flame retardants.

Cars

The fact that the materials used in cars are subject to a huge amount of daily thermal stress makes their use practically inconceivable without the application of flame retardants.

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For further information on Brominated Flame Retardants, visit:

www.bsef.com

BSEF is the international organisation of the bromine chemical industry, whose remit is to inform stakeholders and commission science on brominated chemicals such as flame retardants

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