



## Flame Retardants Work

In a 2012 study, researchers at the Fire Technology Research Laboratory at Southwest Research Institute conducted a series of 79 full-scale fire tests using upholstered furniture mockups made from foam, fabrics, and other materials. The study showed that flame retardants used in upholstered furniture were effective in slowing the spread of fire and providing valuable escape time.

## For More Information:

- Read about Firemaster® 550 flame retardant at [www.chemturaflameretardants.com](http://www.chemturaflameretardants.com)
- Visit the North American Flame Retardant Alliance to learn about the wide range of flame-retardant chemistries at [flameretardants.americanchemistry.com](http://flameretardants.americanchemistry.com).

## Firemaster® 550 Flame Retardant

Firemaster® 550 is a flame retardant that protects lives and property by significantly reducing the risk of fire. By decreasing the probability of ignition from hazards such as lighters, matches, candles, and smoldering cigarettes, it makes products made with polyurethane foam safer. It is a blend of a brominated flame retardant and a phosphorus flame retardant. Firemaster® 550's high efficiency as a flame retardant is a result of the synergy of these components.

Firemaster® 550 does not contain polybrominated diphenylethers (PBDEs). The commercial introduction of Firemaster® 550 provided an alternative to furniture foam manufacturers that allowed them to rapidly eliminate the use of pentaBDE from the U.S. market. The brominated component of Firemaster® 550, which is comprised of tetrabromobenzoate (TBB), the main ingredient, and tetrabromophthalate (TBPH), provides equivalent fire safety and performance with an improved environmental profile.

## About Brominated Flame Retardants

By interacting with fire in the gas phase, bromine works to prevent ignition or slow the spread of a fire. Brominated flame retardants also can be added to materials like plastic with minimal impact on their properties. As a result, flame retardants can be used to reduce the flammability of a variety of flammable materials, including textiles, electronics, building materials, plastics, and foams.

Laboratory tests show that it takes more time for flammable materials to catch fire after they have been treated with Firemaster® 550. This gives people more time to evacuate and call for help.

## Products Containing Firemaster® 550 Flame Retardant

Firemaster® 550 reduces the flammability of materials, such as flexible polyurethane foam, which is used as cushioning for a wide variety of consumer and commercial products, including furniture, carpet, transportation, bedding, sound insulation, and packaging.

## EPA Extensive Review & Approval Process

The Toxic Substance Control Act (TSCA) is one of more than a dozen federal laws and regulations that ensure chemicals used in commerce are safe for their intended uses.

As required by EPA for any new chemical, the manufacturer filed a Premanufacture Notice for TBB in 1995 and following a nearly two-year review, began limited commercial production in 1997. After that filing, 15 studies were submitted to EPA during the agency's 13-year assessment of TBB. Another 17 studies were conducted on TBB for regulatory authorities in other countries and were submitted to EPA in 2012 as part of its Work Plan Chemicals program. These included studies designed to assess the potential exposure of consumers to the substance, as well as persistence and potential for bioaccumulation. All of this research was conducted at independent laboratories following standardized methods prescribed by organizations such as the Organization for Economic Cooperation and Development (OECD).

Based on these studies, EPA determined that TBB has low potential for persistence and bioaccumulation.

## Consumer Exposure is Extremely Low

EPA evaluates the risks of new chemicals before they are manufactured to ensure they do not pose an unreasonable risk. A series of studies was conducted to assess the environmental fate and toxicity of TBB at the direction of EPA. The results indicated the level of exposure that could cause an unfavorable effect in humans is much higher than what a person encounters in the real world.

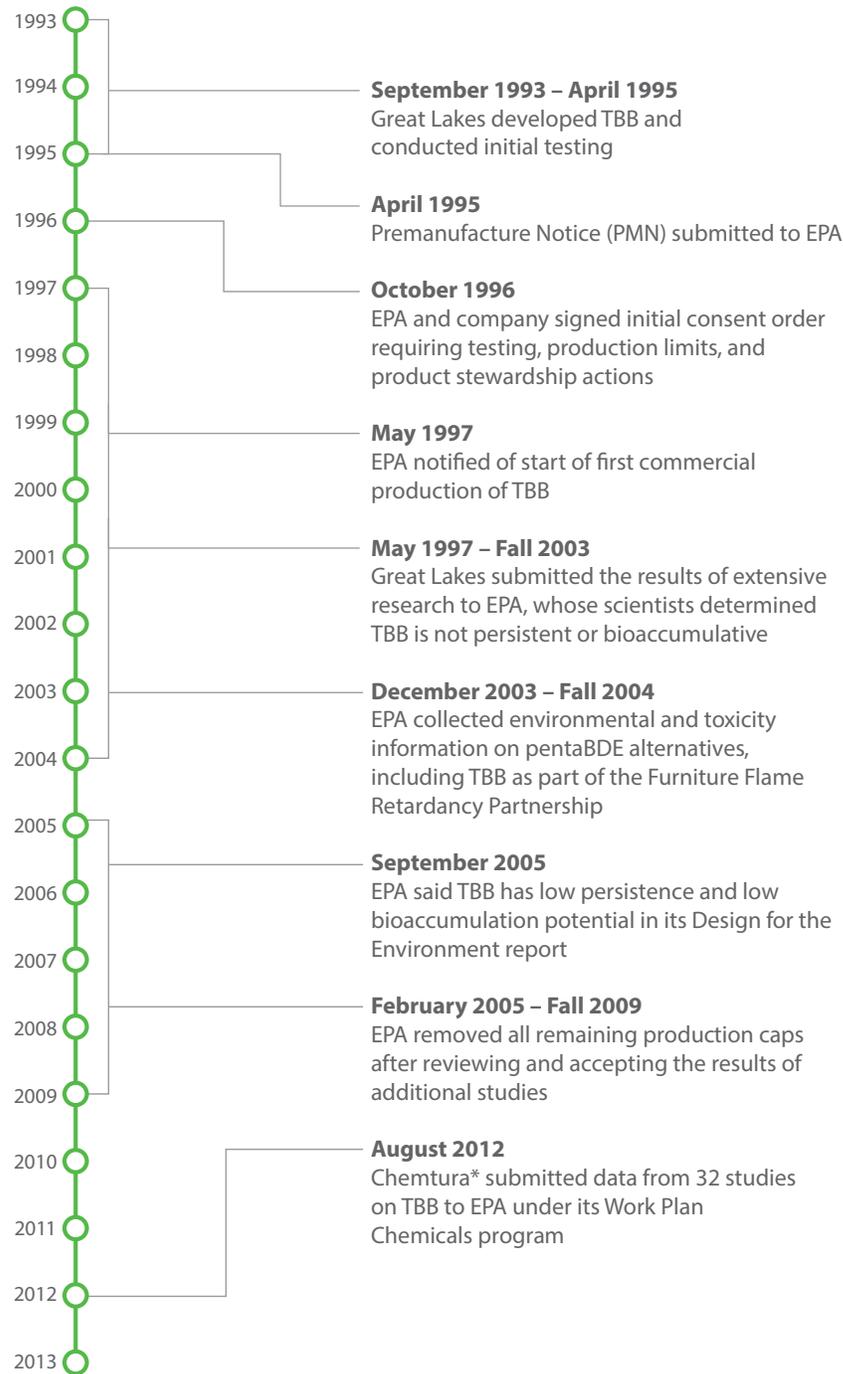
## Regulatory Agencies that have Ruled on the Safety of TBB

- U.S. Environmental Protection Agency
- Australian Department of the Environment and Heritage
- Environment Canada



## Timeline of EPA's Scientific Assessment

These are some of the steps Chemtura took during the U.S. government's review of tetrabromobenzoate (TBB).



*\* In 2005, Great Lakes Chemical Corporation completed a merger with Crompton Corporation to form Chemtura Corporation.*