# Facts About Flame Retardants & Foam Plastic Insulation

Plastic building and construction products such as rigid foam board and spray foam insulation and air sealants are used to meet stringent energy codes, green building standards, and healthy building guidelines. Their use makes homes and buildings more environmentally friendly. Flame retardants are used to help foam plastics meet important fire safety standards. These fire safety standards are incorporated into building code provisions that have regulated the safe use of plastic building products for over 30 years; provisions that have proven to be effective at contributing to fire safety of buildings.

**Attics**

**Roofing**

**Exterior Sheathing**

**Below Grade Foundation**

**Radiant Floor Heating/ Under Slab**

## What Are Flame Retardants?

Flame retardants (FRs) are materials that can be used in products to reduce the chances of a fire starting and to delay the spread of fire once it starts. Because there are many different types of FRs that vary in composition and function, specific FRs are tailored to satisfy the desired performance needs for a material.

## What Flame Retardants Are Used in Plastic Building Products?

Flame retardants commonly used in products such as foam plastic insulation today are polymeric FR, typically used in expanded and extruded polystyrene insulation, and tris (1-chloro-2-propyl) phosphate (TCPP), which is used in spray polyurethane foam and polyisocyanurate boardstock.

## Why Are Flame Retardants Necessary?

Because all foam plastic insulation products are combustible, building and fire codes place strict fire performance criteria on these materials and their use in building applications. A combination of fire tests and construction details for a given application combine to ensure the safe use of foam insulation products.

Experts recognize that the use of flame retardants helps prevent fires from starting and slow their spread, crucially important in fires when every second counts. Manufacturers use flame retardants in finished products to meet the stringent performance criteria for flame spread and smoke spread development required by government regulations.

"Flame retardant" refers to a function, not a family of chemicals. A variety of different chemistries, with different properties and molecular structures, act as flame retardants and these chemicals are often combined for effectiveness. Finished products that incorporate flame retardants and meet testing requirements then identify that the product complies with building code fire performance standards for a particular residential or commercial application.

Flame retardants and innovations in chemistry play a critical role in enabling energy efficient products to meet necessary safety criteria today and for the future.

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## How Are Flame Retardants Regulated for Safety?

In the U.S., the Environmental Protection Agency (EPA) has federal authority to limit or even prohibit a chemical's use if the agency concludes that the chemical presents or will present an unreasonable risk of injury to health or the environment. The Toxic Substance Control Act (TSCA) and more than a dozen other federal laws and regulations, including consumer product safety laws and product liability laws, provide further oversight of chemicals in commerce. Similar regulations are in place across the globe.

## Should Flame Retardants Be Eliminated From Foam Plastic Insulation?

Any insulation material that meets the testing and performance requirements mandated by the building code, with or without FRs, can be used. As with all other building materials, the code demands fire performance of the insulation under defined conditions and is neutral with respect to how the insulation is manufactured to achieve that performance. The building code represents long-standing requirements, based on an exhaustive consensus process that should not be summarily dismissed or altered without sufficient scientific backing.

**References**
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