



Flame retardants help to slow down the spread of fire

The peer-reviewed journal *Fire Technology* recently [released a study](#) by Dr. Blais and Dr. Carpenter showing that flame retardants make a significant difference in preventing and slowing the spread of fire.

THE STUDY

The study '*Flexible Polyurethane Foams: A Comparative Measurement of Toxic Vapors and Other Toxic Emissions in Controlled Combustion Environments of Foams With and Without Fire Retardants*' compared flexible polyurethane foams with and without flame retardants in furniture mock-ups in order to analyse the effectiveness of the chemicals and their influence on smoke toxicity. The researchers also looked at the impact of fire barrier materials on fire growth and smoke toxicity.

TOP LINE FINDINGS

Small open flame sources

- Flame retardants in foams helped prevent ignition from small open flame sources.
- The combination of a barrier together with flame retarded foam made the furniture highly flame resistant.
- Fire barriers prevented ignition when they were fully intact. But when the barrier was breached and the foam did not have flame retardants, it produced the most toxic smoke among the different scenarios tested.
- When flame retardants are present, they slow or stop the fire so there is little to no smoke released.
- The flame spread during the tests was 25 percent slower for flame retarded foam than it was for the non-flame retarded foam.

Large open flame sources

- If the foam is ignited by a larger open flame source, flame retarded foam burns more slowly and with less intensity than it would if it did not have the flame retardants.
- There was no statistical difference in smoke toxicity between the flame retardant and non-flame retardant foam fires.
- The study showed no difference between the flame retarded foam and non-flame retarded foam when it came to the release of chlorinated dioxins and furans.

THE AUTHORS

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