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Flame Retardants Under Fire

Checklist: Flame Retardants: A Checklist for Action

Ask manufacturers about halogenated flame retardants in their products. Even if products free from halogenated flame retardants cannot be obtained today, simply asking manufacturers or manufacturers' reps about these additives will raise awareness and lead to changes in the future.

Avoid combustible materials where feasible. Instead of using inherently flammable materials that have to be treated with flame retardants, such as foamed-plastic insulation, use inherently nonflammable materials, such as fiberglass or mineral wool insulation. (To avoid an energy penalty for such substitutions, thicker wall sections may be required.) Avoid foam cushioning in furniture in favor of mesh, as in some new "green" office chairs.

Rely on separation of combustible materials to provide fire protection. Combustible materials can be used with fairly low risk by providing adequate separation from occupied spaces or potential combustion sources.

Install sprinklers in all buildings. Full sprinklering should be provided in all occupied buildings, including single-family homes, to provide protection from fire.

Where feasible and where there will not be energy penalties, avoid foam insulation. Avoid foam insulation in most applications unless the manufacturer can provide assurance that halogenated flame retardants are not used. Most foam insulation today is made with halogenated flame retardants, though polyisocyanurate and spray polyurethane insulation is typically made with TCPP, which contains chlorine rather than bromine and is probably less of a health and environmental risk. Rigid fiberglass, rigid mineral-wool, and all cavity-fill insulation (fiberglass, mineral wool, and cellulose) is made without halogenated flame retardants.

Do not use polyurethane foam carpet padding. Soft polyurethane foam carpet padding is produced with pentaBDE or other brominated flame retardants. As the padding disintegrates, dust may become airborne or be ingested. This dust can be particularly dangerous to infants. In place of polyurethane padding, use more traditional materials, such as jute and horse-hair padding.

Remove polyurethane foam insulation from beneath carpeting. Polyurethane foam padding disintegrates over time, releasing PBDEs into the building. Removing this padding should be a moderately high priority. Use great care to minimize the release of dust into the building, wear a respirator, and clean up thoroughly with a HEPA vacuum.

Specify office and household furniture that does not contain polyurethane foam padding. A number of leading office furniture manufacturers, including Herman Miller, are trying to eliminate halogenated compounds from their products. The retailer IKEA has eliminated BFRs from all of its furniture.

If polyurethane foam is used in furniture, specify foam with nonhalogenated flame retardants. Unfortunately, it is very difficult to find out exactly which flame retardants are used in a particular product, so this may not be feasible. With large orders of office furniture, the specifier may wield enough influence to obtain this information from potential suppliers.

Specify office equipment with metal cases rather than plastic. Because most plastics are inherently flammable, flame retardants are commonly added. By switching to inherently flame-resistant materials, the need for flame retardants can be avoided. (This is the approach Apple Computer has taken in eliminating brominated flame retardants from all plastic components larger than 25 grams—substituting aluminum for plastic in computer casing, for example.)

Specify halogen-free wire and cable. Polyethylene and polypropylene insulated wire and cable that is produced using nonhalogenated flame retardants is available, though such materials may be difficult to find, and they may need to be installed in metal conduit to provide fire separation. The GreenSpec® Directory lists several such products. See EBN Vol. 13, No. 3 for more on wire and cable.