



Tips for Processing Brominated Flame-Retarded Plastics

Brominated flame retardant additives are used in plastics to impart varying degrees of protection against combustion. Overall, these flame-retardant plastics are very stable to the various methods by which they are processed. While this stability is a very positive aspect, it comes with the caveat that good manufacturing practices should be observed.

Excessive heat may decompose the flame-retardant additives, leading to product destruction and release of hydrogen bromide (HBr), an acrid smelling gas. This may result in corrosive damages to the metal parts of processing equipment along with health hazards to the operating personnel. Decomposed material may also build up in your processing equipment thereby affecting your ability to make consistent parts. The loss of key mechanical and ignition resistant properties could result as well.

Extended times at elevated temperatures may also result in the release of HBr and vapors that are harmful to equipment and workers. Do not let flame retardant material sit in your processing equipment during an interruption of its processing or shut down your production process with flame retarded material in your equipment.

Always purge processing equipment if an extensive interruption of the manufacturing cycle occurs. Purge the equipment with resin that does not contain flame retardant additives. Also, provide good exhaust ventilation and fresh air supply.

Manufacturers that are new to flame retardants may find that adjustments to their process conditions and rates may be required relative to those of the non-FR materials they run. It is also beneficial to have processing equipment components that are derived from corrosion resistant materials. For example molds made from stainless steel are more stable than molds made from aluminum.

Brominated flame-retarded plastics are very user friendly. The simple tips noted above should help to address the basic issues of processing these materials. As always, we are here to help. For additional questions, please contact us at 610-759-3690.