Firebrake® ZB is a unique form of zinc borate with multi-functional fire retardant applications in plastic and rubber compounds. Since Firebrake ZB releases its water of hydration at temperatures exceeding 290°C (554°F), it can be used in systems requiring high processing temperatures. Firebrake ZB has a refractive index similar to that of most polymer systems, which results in the retention of considerable translucency and allows the use of low pigment loading. It can be fed to extruders, calenders, or injection molding equipment in much the same way as other solid polymer additives.

Applications

Firebrake ZB is used as a flame retardant, smoke and afterglow suppressant, and anti-arcing agent in polymer systems such as polyvinyl chloride, nylon, epoxy, polyethylene, polypropylene, polyesters, thermoplastic elastomers and rubbers.

Depending on the base polymer used and fire standards to be met, Firebrake ZB can be used to replace partially (or even completely) other fire retardant additives such as antimony oxide. In some systems, Firebrake ZB displays synergism with antimony oxide. In halogen-containing systems, the usage level of Firebrake ZB is in the range of 3-25 parts per 100 parts of resin (phr). In halogen-free systems, the recommended level is in the range of 10-25 phr, normally used in conjunction with alumina trihydrate, magnesium hydroxide, or a silicone polymer. In some cases, our technical team may be able to give recommendations for starting point formulations.

Firebrake ZB Fine and Firebrake ZB-XF are recommended for applications where maximum fire test performance is needed, and physical properties such as film forming and adhesion are critical. The XF grade has no particles greater than 12 microns, as determined by laser diffraction technique, and therefore is suitable for more critical applications.

Storage

When stored under normal conditions of temperature and humidity, Firebrake ZB products are chemically stable and show little tendency to cake.
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