



Firebrake® 500

$2ZnO \cdot 3B_2O_3$
Zinc Borate

CAS Number 12767-90-7

Firebrake® 500 is a dehydrated zinc borate with multifunctional fire retardant applications in a variety of polymers. Since it contains no water of hydration, it is stable up to 600°C. It can therefore be used in polymer systems requiring very high processing temperatures. It can be fed to extruders, calenders, or injection moulding equipment in the same way as other solid polymer additives.

Applications

Firebrake 500 can be used as a flame retardant and smoke suppressant in a variety of polymers including polyetherketone, polysulfone, fluoropolymer, polyester, and nylon. The very significant beneficial effect of *Firebrake* 500 on the rate of heat release is of special interest where this factor is important, as in aircraft applications.

Storage

Firebrake 500 should be stored in a sealed container because of its tendency to gradually pick up surface moisture in high humidity environments. This surface moisture is easily removed by heating at about 200°C. The product is chemically stable and shows little tendency to cake.

*Protected by US and international patents.

Chemical and physical properties

Typical properties	
Refractive index	1.58
Median particle size (laser diffraction)	9 microns
Weight loss (TGA)	1.5% max. to 400°C
Thermal stability	Stable up to about 600°C. Can gradually absorb surface moisture—store in sealed container
Specific gravity	2.6

Theoretical chemical composition	
Boric oxide (B_2O_3), %	56.2
Zinc oxide (ZnO), %	43.8



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