



ETİMADEN
İŞLETMELERİ GENEL MÜDÜRLÜĞÜ

PRODUCT TECHNICAL DATA SHEET

ETİ-ZnBor

$2ZnO.3B_2O_3.3,5H_2O$ – ETİ-ZnBor

CAS Number: 138265-88-0/ 12767-90-7

Form of Sale: Powder

Packaging: 25 kg, 800 kg

[with or without pallet]



General Information:

Eti-ZnBor [Zinc Borate], the chemical formula of which is $2ZnO.3B_2O_3.3,5H_2O$, is a white solid, odourless, nonhygroscopic, viscous and granular/ powder borate which is widely used in the industry. It has a high dehydration temperature [290-300°C]. Its solubility in water is very low. Zinc Borate, obtained as a result of the reaction of boric acid [H_3BO_3] and zinc oxide [ZnO], is produced in Bandırma Boron and Acid Factories Operations Directorate.

Some Areas of Use and Benefits:

Fire Retardancy: Zinc borate, which is widely used in sectors such as polymer, wood, textile, is a flame retardant and smoke suppressant inorganic additive. It is used as a fire retardant in cables, fireproof paints, fabrics, electrical / electronic parts, fireproof carpet coatings, automotive / aircraft interior parts, paper industry. In recent years, the synergistic use of Zinc Borate with other flame retardants in different applications has been increasing progressively. For example, Zinc Borate can be used in conjunction with $Al(OH)_3$ ve $Mg(OH)_2$ in halogen-

containing and halogen-free systems. Depending on the base polymer used and fire standards to be met, zinc borate can be used to partially or completely replace other fire retardant additives such as antimony oxide. In some systems, zinc borate displays synergism with antimony oxide. Zinc Borate does not have negative effects on human health and environment due to the fact that it does not release toxic fumes during combustion.

Polymers: Zinc Borate is used as a flame retardant, smoke and afterglow suppressant, and anti-arcing agent in polymer systems such as polyvinyl chloride, polyethylene, polypropylene, nylon, epoxy, polyesters, thermoplastic elastomers and rubbers. It is often preferred as an important raw material in the polymer industry because of its high dehydration temperature. Zinc Borate enables plastic materials that are used actively in many areas of daily life to turn into stronger, durable and quality products. It has a refractive index similar to that of most polymer systems, so it enables the use of low pigment loading and retains considerable translucency. It improves electrical properties [provides remarkable anti-arc properties in nylon and polyester]. It increases the adhesion property between metals and plastics. Zinc Borate, which is also used as insulation material, makes PVC coatings, MDF, EVA products more durable.

Other uses: It is also used as fungicide and insecticide for the protection of wooden parts, as raw material for boron silicate glass and as melting point reducing agent [flux] in the ceramic industry.

Physical Properties:

Specific gravity : 2.71 [25° C]

Molecular weight : 434.6 g/mol

Melting point : 650°C

Solubility:

It is slightly soluble in water.

Chemical content:

Component	Content
B ₂ O ₃	46.80 - 49.20%
ZnO	36.30 - 38.70%

Particle size:

Size	Content
D50, . µm	10 max

X-Ray Diffraction Analysis:

