Tai Xing
泰星股份 绿色智造

ZINC BORATE

$2ZnO \cdot 3B_2O_3 \cdot 3.5H_2O$

CAS NO.1332-07-6 / 138265-88-0

Description

Zinc borate is produced by boric acid process with high purity, high content of ZnO and B_2O_3 and high thermal stability. Zinc borate is used as an environmentally-friendly additive halogen-free flame retardant and smoke suppressant in various polymer systems.

Physical and Chemical Properties

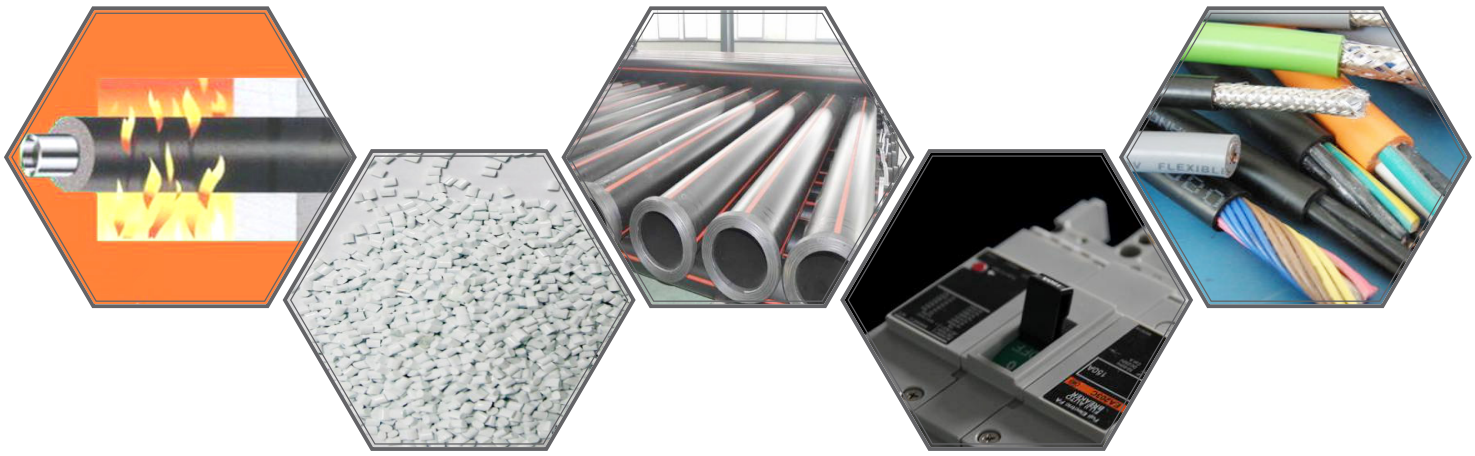
Items	Unit	ZB-2335
Appearance	—	White Powder
B_2O_3	%	47.0 ～ 49.0
ZnO	%	37.5 ～ 39.5
Moisture	%	≤0.3
Loss on Ignition	%	13.0~15.5 (450°C)
Whiteness	%	≥96.0
Particle Size,D50	μm	≤7.0
TGA(1%)	℃	≥345
Chloride(Cl^-)	%	≤0.05
Sulphate(SO_4^{2-})	%	≤0.005

Key advantages

- **High Purity:** >99%
- **High Whiteness:** ≥96%
- **High Decomposition Temperature:** the TGA(1%) is over 345℃ , allow high thermal processing.
- **Low Cl^- %, Low SO_4^{2-}%:** Cl^-≤300ppm, SO_4^{2-}≤50ppm. No white precipitate during product use.

Application

Recommended to be used in engineering plastics, rubber based compounds such as hose, conveyer belt, coated canvas, FRP, wire and cable, electrical components, coating and painting, etc.



山东泰星新材料股份有限公司
SHANDONG TAIXING ADVANCED MATERIAL CO.,LTD.
http://www.txzuranji.com
电话：+86-531-88870399 服务热线 :400-0531-026

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Zinc Borate Production Process

The traditional production methods of zinc borate mainly include borate-zinc salt method and boric acid -zinc oxide method

1.Borate-zinc salt Process

Zinc borate is usually prepared by using borax, zinc sulfate and zinc oxide as raw materials, and reacting in a water system according to a certain ratio. Most domestic manufacturers use this method to produce zinc borate.

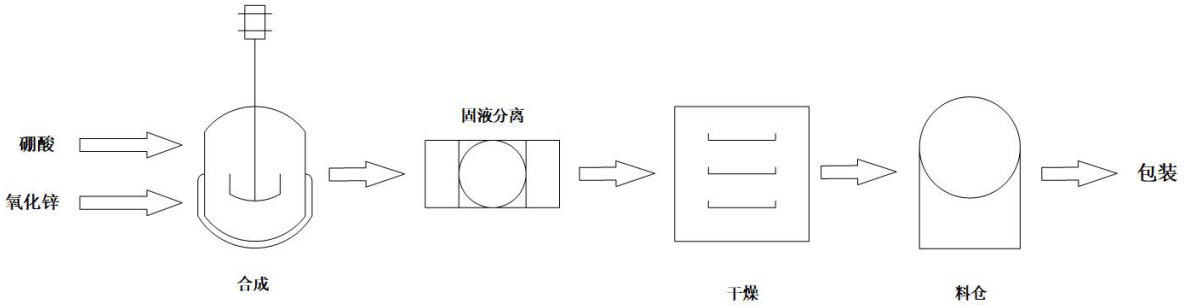
2.Boric acid-zinc oxide Process

Zinc borate is usually prepared by using boric acid and zinc oxide as raw materials according to a certain ratio in a water system.

3. Comparison Of Two Processes

Production Process	Borate-Zinc Salt Process	Boric Acid -Zinc Oxide Process
Raw Materials	Borax, Zinc Sulfate, Zinc Oxide	Boric Acid, Zinc Oxide
Advantages	Low Raw Material Cost	Process And Steps Are Simple, The Mother Liquor Can Be Recycled High Purity, Low Sulfate Content
Disadvantages	Produce By-Product Sodium Sulfate High Sulfate Content In Finished Product Lower Purity Lower temperature Resistance Sodium Sulfate Is Generated As a By-Product. Higher Sulfate Content, Lower Purity Relatively Lower Temperature Resistance.	High Raw Materials Costs
Taixing Production Process		●

4. Boric Acid-Zinc Oxide Process Flowchart



Applications

Applications and Benefits	Zinc Borate 3.5 H2O ZB2335	Anhydrous Zinc Borate
Processability	★★★★★	★★★★★
Applications	Engineering Plastics, Flame Retardant Rubber Flame Retardant Paint	Engineering Plastics