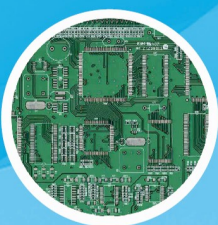


专注于硫酸钡研发、生产与应用

Focus on Barium Sulfate R&D, Production and Application

沉淀硫酸钡系列产品手册

Precipitated Barium Sulfate Series Product Manual



云浮鸿志新材料有限公司

YUNFU HONGZHI NEW MATERIALS CO., LTD

Company Profile

Yunfu Hongzhi New Material Co., Ltd. focuses on the research, development, production and application of new chemical materials such as modified ultrafine precipitated barium sulfate, plastic functional masterbatch and biodegradable plastics. Our company is a leading high-end professional manufacturer in precipitated barium sulfate and a national high-tech enterprise. Our company adopts the original sulfuric acid process to produce precipitated barium sulfate, which has the characteristics of controllable particle size, controllable morphology, high whiteness, partial blue phase, no sulfide, no black spot impurities, good dispersion and good thixotropy. At present, our company has the ability to produce various precipitated barium sulfate products with average particle size of 30 nm to 10 μm , as well as various surface-treated precipitated barium sulfate series products and various plastic functional masterbatches, and the technology is at the leading level in the industry.

Barium sulfate is an environmentally friendly material because of its strong chemical inertness, good stability, acid and alkali resistance, moderate hardness, high specific gravity, high whiteness, and ability to absorb harmful rays. Therefore, it is widely used in various fields such as coating, ink, color paste, modified plastic, biodegradable plastic, rubber, elastomer, silica gel, chemical fiber, paper making, cosmetics, etc.

Our products are mainly used in **Coatings (such as powder coatings, anticorrosive paints, marine paints, coil steel paints, container paints, automobile paints, furniture paints, exterior paint, etc.), Electronic Inks, Printing Inks, Color Pastes, Pigments, etc.**

Our products are also used in Modified Plastics (such as high gloss PP, ABS, etc.); Thin Films (such as shopping bags, winding films, etc.); Color Masterbatch; Biodegradable Plastics (such as disposable tableware and shopping bags) are used as functional fillers.

Yunfu Hongzhi New Materials Co., Ltd., established in 2017, is located in Yunfu Circular Economy Industrial Park, a High-tech Industrial Park in Yunfu City, Guangdong Province. It covers an area of about 50 mu and has a beautiful surrounding environment. The transportation facilities such as expressways, high-speed railway station and inland ports provide great convenience for production activities and travel. The company's Phase I and Phase II projects have been completed and put into production, with an annual production of 80,000 tons of various inorganic powder materials and 60,000 tons of functional masterbatches. Our company has its own team of experts and laboratories, and has many technical patents. Our company adopts top-notch technical equipment and a complete set of inspection and evaluation instruments, which can provide customers with personalized products and services.

As an environmentally friendly functional material, modified ultrafine precipitated barium sulfate will be widely used in more fields in the future. We will continue to strengthen the construction of talent team, enhance the core competitiveness of enterprises through personnel training and technological innovation, and lead the development direction of new inorganic powder materials and plastic functional masterbatch products.

2017 Year
Established



50 Mu
Land Area



80000 Tons / Year
Inorganic Powder Materials



60000 Tons / Year
Functional Masterbatches



Production Process

Properties of Precipitated Barium Sulfate

Chemical Formula: BaSO₄, Molecular Weight: 233.39, CAS: NO.7727-43-7, National Standard: GB/T2889-2017, Appearance: Colorless Oblique Crystal or White No Styling Powder, Relative Density 4.50 (15°C), Melting Point 1580 °C. MOHS Hardness: 3.0, Index of Refraction: 1.64, Solubility: 20 °C: 0.00024g/100g water. It can absorb harmful rays. It is almost insoluble in water, ethanol, organic solvents, acids and alkalis. But it can be dissolved in boiling hot sulfuric acid. It is the only non-toxic common barium salt. It can be reduced to barium sulfide and carbon dioxide at 600°C by carbon.

Mainly Application

Precipitated barium sulfate is an environment-friendly material because of its strong chemical inertness, good stability, acid and alkali resistance, moderate hardness, high whiteness and luster, and can absorb harmful X and γ rays. Therefore, it is widely used as filler for various coatings, PCB inks, color paste inks, modified plastics, high gloss PP, transparent masterbatch, color masterbatch, elastomer, chemical fiber, paper making, cosmetics, etc. It can also be used as a swallowing agent (called barium meal) when looking through the stomach and intestines, and a cathode expansion rod of a storage battery; It can be used as a protective wall material for radiation protection, used in nuclear facilities, atomic energy factories, X-ray laboratories, etc., and can play a good shielding role; With X-ray developing function, it can be used for medical developing fibers and children's toys; It can also be used for drainage pipes, sound boxes, etc., which can effectively isolate noise.

Traditional Preparation Process

- $\text{BaS} + \text{Na}_2\text{SO}_4 = \text{BaSO}_4 \downarrow + \text{Na}_2\text{S}$ The cost of the process is the lowest, but it has sodium sulfide byproduct, the finished product whiteness and impurities are generally unstable.
- $\text{BaS} + \text{H}_2\text{SO}_4 = \text{BaSO}_4 \downarrow + \text{H}_2\text{S} \uparrow$ The process cost is low, but the process produces toxic hydrogen sulfide byproducts, which requires high equipment and environmental protection.
- $\text{BaCl}_2 + \text{Na}_2\text{SO}_4 = \text{BaSO}_4 \downarrow + 2\text{NaCl}$ This process is generally a byproduct of some factories and then simply processed, but few factories use this process.
- $\text{Ba}(\text{OH})_2 + \text{H}_2\text{SO}_4 = \text{BaSO}_4 \downarrow + \text{H}_2\text{O}$ The process is simple, the cost of raw materials is high, but it will get high purity product, with the uniform and controllable particle size.

Yunfu Hongzhi New Material Co., Ltd. adopts advanced environmental protection technology: using sulfuric acid and barium carbonate as raw materials, there is no harmful toxic gas and water-soluble salt by-products in the production process. It is simpler than traditional production process, environmental protection and sustainable development.

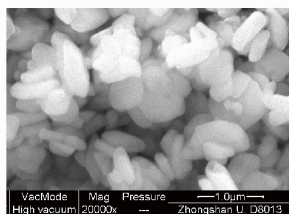
The manufacturing technique of our company:



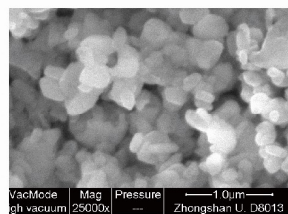
Technological Process



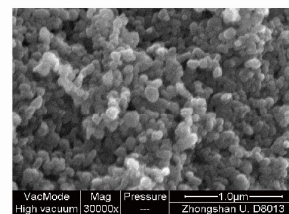
SEM Pictures



M-700(0.70μm)



CB-300(0.30μm)



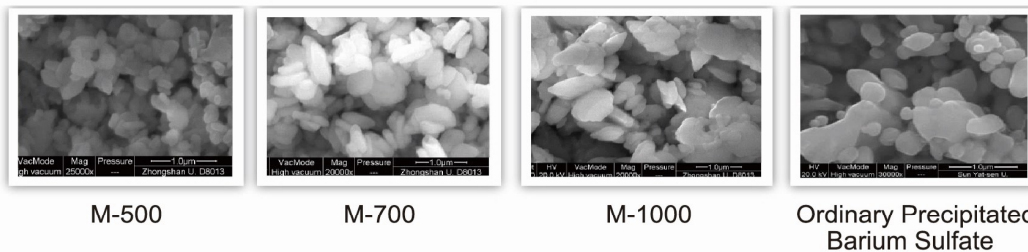
FB-100(0.10μm)

Powder Product Series 1: Precipitated Barium Sulfate

Product Characteristics

- ① High whiteness, high purity, excellent acid and alkali resistance, weather resistance.
- ② Low hardness, reducing the paint material grinding time and loss rate.
- ③ Low oil absorption, reduced VOC and good leveling property.
- ④ The particle size distribution is concentrated, with super-high gloss and brightness.
- ⑤ Good dispersion and spacial segregation effect can reduce the amount of titanium dioxide.
- ⑥ Less impurities, no harmful substances, can ensure the safety and cleanliness of products.

SEM Pictures



Performance Index

Item	M-500	M-700	M-1000	Ordinary Precipitation Barium Sulfate
D50 (µm)	0.5	0.7	1.0	0.7
Dispersivity (µm)	10	10	10	15
Oil Absorption (g/100g)	15	13	11	12
Whiteness (%)	98	98	98	96
L Ratio	99	99	99	99

Application

M-SERIES can be used in various industries such as coatings, plastics, pigments, inks, paper making, cosmetics, batteries, etc. It can significantly improve the surface gloss, leveling and adhesion of products and reduce costs.



Typical
Models

M-500

M-700

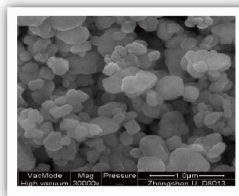
M-1000

Powder Product Series 2: Modified Ultrafine Precipitated Barium Sulfate

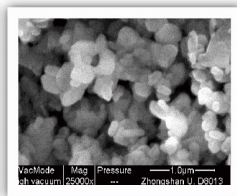
Product Characteristics

- ① Good dispersibility, which can reduce the grinding time of coating.
- ② Acid resistance, alkali resistance and excellent weather resistance.
- ③ It can improve the thermal conductivity of products and reduce the expansion rate.
- ④ High filling, excellent rheological property and glossiness.
- ⑤ Modified with silicon and aluminum, with good affinity, can improve various properties of products.
- ⑥ Stabilize inorganic and organic pigments to prevent flocculation or sagging.

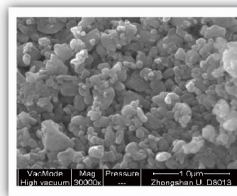
SEM Pictures



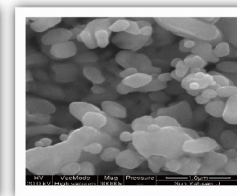
CB-500



CB-300



CB-200



Ordinary Precipitated Barium Sulfate

Performance Index

Item	Average Particle Size (μm)	Whiteness (%)	Oil Absorption (g/100g)	Dispersivity (μm)	Use	Modifier (%)	pH
CB-500	0.5	98	16	10	PCB Ink	2	8-9
CB-300	0.3	98	18	10	PCB Ink	3	8-9
CB-200	0.2	98	19	10	Waterborne Coatings	3.5	8-9

Application

CB-SERIES can be widely used in various PCB inks, automotive paints, pigment pastes, industrial coatings, architectural coatings, engineering plastics, etc.



Typical Models

CB-500

CB-300

CB-200

Powder Product Series 3: Special Precipitated Barium Sulfate for Modified Plastics

Product Characteristics

- ① Small particle size, low scattering rate, and very high transparency.
- ② Excellent dispersion, no pockmarks and high gloss.
- ③ Good resistance to acid, alkali and temperature can reduce the product color change.
- ④ Stable whiteness, maintain color masterbatch stability.
- ⑤ Less impurities, no harmful substances, can ensure the safety and cleanliness of products.
- ⑥ Low oil absorption, increasing the filler volume to reduce basis material and the cost.
- ⑦ Good affinity to various resins, and improve various mechanical properties of plastic products.

SEM Pictures



F-103

F-102

F-108

Ordinary Precipitated
Barium Sulfate

Performance Index

Item	F-103	F-102	F-108	Ordinary Precipitated Barium Sulfate
D50 (μm)	0.1	0.3	0.7	0.7
Dispersivity (μm)	10	10	5	15
Oil Absorption (g/100g)	15	13	11	12
Whiteness (%)	98	98	98	96
Moisture Content (%)	0.5	0.3	0.3	0.3

Application

F-SERIES can be used in various industries such as modified plastics, transparent functional masterbatch, color masterbatch, engineering plastics, etc., which can significantly improve the mechanical properties, surface gloss and reduce the cost of products.



Typical
Models

F-103

F-102

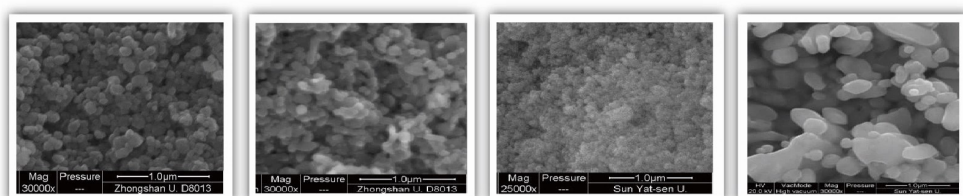
F-108

Powder Product Series 4: Nano-precipitated Barium Sulfate

Product Characteristics

- ① The particle size is less than 100 nm, which has very high transparency.
- ② The coating sagging phenomenon can be reduced by adding this product.
- ③ The coating has better adhesion and film hardness.
- ④ The surface of the product has super high gloss and fullness.
- ⑤ High whiteness, acid and alkali resistance, excellent weather resistance.
- ⑥ Stabilizing function of inorganic and organic pigments, preventing flocculation or color floating.

SEM Pictures



FB-100

FB-60

FB-30

Ordinary Precipitated
Barium Sulfate

Performance Index

Item	Average Particle Size (µm)	Whiteness (%)	Oil Absorption (g/100g)	Specific Surface Area (m ² /g)	Volatiles at 105 °C	L Ratio	pH
FB-100	0.1	98	20	16	0.6	99	8
FB-60	0.06	98	22	22	0.6	99	8
FB-30	0.03	98	25	30	0.8	99	9

Application

FB-SERIES can be widely applied in various automobile coatings, inks, color pastes, industrial coatings, architectural coatings, wood coatings, and engineering plastics etc.



Typical
Models

FB-100

FB-60

FB-30



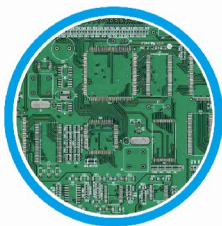
鸿志新材粉体产品型号与应用对照表

Comparison Table of Hongzhixincai Powder Products in Model and Application

应用 Model	Application																
	水性涂料 Waterborne Coatings	粉末涂料 Powder Coatings	汽车涂料 Automotive Coatings	防腐涂料 Anticorrosive Coatings	其他 涂料 Other Coatings	印刷 油墨 Printing Ink	PCB 油墨 PCB Ink	色浆 Color Paste	透明母料 Transparent Masterbatch	黑色母料 Black Masterbatch	白色母料 White Masterbatch	彩色母料 Color Masterbatch	工程塑料 Engineering Plastics	阻燃塑料 Flame Retardant Plastics	改性PP Modified PP	化纤、纤维 Chemical Fiber, Fiber	光学膜、 电池隔膜 Optical Film, Battery Separator
M-500	√				√			√								√	
M-700	√	√	√	√	√	√	√				√		√	√	√		√
M-1000	√	√	√	√	√		√				√		√	√	√		
CB-300	√		√		√	√	√										
CB-304			√		√	√	√						√	√		√	√
CB-305	√		√		√		√										
F-103		√						√	√								
F-102								√		√				√	√		
F-108											√		√	√	√		
FB-100	√		√		√	√	√					√					



产品展示 | Product Display



BaSO₄



BaSO₄

研发设备 | R&D Equipment



注塑机
Injection Machine



气氛炉
Atmosphere Furnace



双螺杆挤出机组
Twin Screw Extruder



老化试验箱
Aging Test Chamber



冲击试验机
Impact Testing Machine



拉力试验机
Tension Tester



三辊机
Three-roll Machine



光泽仪
Gloss Meter



检测设备 | Testing Equipment



吹膜机
Film Blowing Machine



激光粒度测试仪
Laser Particle Size Tester



熔融指数测试仪
Melt Index Tester



粘度计
Viscometer



光度计
Photometer



白度仪
Whiteness Meter

资质专利 | Certificates and Patents

高新技术企业证书 >>>>

2020年已通过高新技术企业认证，证书编号：GR202044012890

发明专利证书 >>>>



ISO9001、SGS认证证书 >>>>



荣誉证书 >>>>

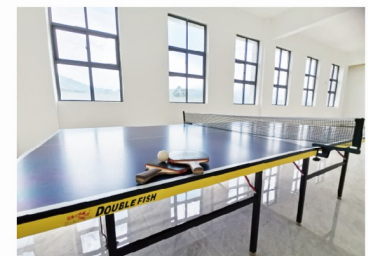
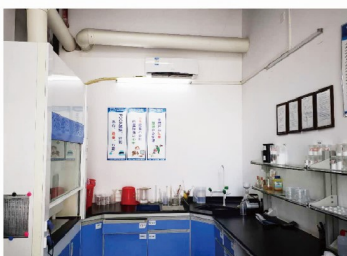


排污许可证 >>>>





鸿志风采 | Hongzhi Photos



销售服务 | Marketing Services

▶ 鸿志新材产品畅销全国二十多个省市地区，并出口美国、英国、日本、韩国、越南、柬埔寨、马来西亚、印度尼西亚、菲律宾等多个国家和地区。

The products of Hongzhi New Materials are sold well in more than 20 provinces and cities in China, and exported to the United States, Britain, Japan, South Korea, Vietnam, Cambodia, Malaysia, Indonesia, the Philippines and other countries and regions.





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