

中国江苏 · 苏州埃科纳材料

阻燃母粒方案提供商、功能粉体供应商

**Flame Retardant Masterbatch
Solution Provider
& Functional Powder supplier**

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visit our website.

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苏州埃科纳材料科技有限公司

Suzhou Eco Nano Materials Technology Co., Ltd

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COMPANY

Suzhou Eco Nano Materials Technology Co., Ltd is a high-tech enterprise dedicated to the research, development, and sale of inorganic flame retardants, flame retardant master-batches, and various functional powders.

Our state-of-the-art manufacturing facility in Yingkou, Liaoning Province, is equipped with 10 imported powder processing and modification coating lines, as well as 6 plastic extrusion and mixing production lines.

With a robust sales network spanning North, East, and South China, supported by local logistics warehouses, we ensure timely and efficient delivery of our products.

Our products find extensive applications in electronics, automotive, construction, and packaging industries. They meet or exceed stringent industry standards and comply with regulations such as RoHS and REACH.

10 ONE OF THE TOP 10
TALC MANUFACTURERS

20 200,000 TONS OF
MINING CAPACITY

10 100,000 TONS
OF POWDER

3 30,000 TONS OF
MASTERBATCH

+ PRODUCTION EQUIPMENT



Jet Mil



Masterbach Production



High temperature and high
pressure air compressor

MINERAL RESOURCES +



+ R&D CENTER



Laser Particle Size Analyzer



Whiteness Meter



Melt Flow Rate tester



Dosing Device



Density Meter

Antimony-Bromined Masterbatch FR-20A

Introduction

Bromine-antimony flame retardant masterbatch is produced through a compound extrusion granulation process using bromine-based flame retardant, antimony synergist and additives, base material, and high-efficiency activation treatment under low-temperature plasticization conditions. Polyethylene (PE) is used as the carrier. This masterbatch is an environmentally friendly product that meets EU green standards. It simplifies the production process, prevents dust dispersion, and creates a safer working environment.

Advantage

- **Increased Production Efficiency:** A single machine can significantly increase production output without any material loss, reducing raw material consumption and production costs.
- **Superior Dispersion and Flame Retardancy:** The excellent dispersion ensures enhanced flame retardancy, while maintaining superior mechanical properties and high thermal stability. Moreover, it can be reprocessed multiple times without compromising mechanical performance.
- **Consistent Dosing:** The dosage is equivalent to that of powdered flame retardants, eliminating the need to modify the formula.

Product Application

This product is mainly applied to wire and cable and engineering plastic modification, including PP/ABS/PA/PBT/PE, etc.

Packaging

Composite paper- plastic packaging, net weight 25KG.

Physical Properties

No.	Item	Criteria
1	Appearance	White granules
2	Effective amount % $\geq$	80
3	Melting point $^{\circ}\text{C} \geq$	330



Antimony Trioxide Masterbatch AKN – 201



Introduction

Antimony trioxide compound flame retardant masterbatch is produced by granulating modified and dispersed powders through a granulation process. The masterbatch exhibits excellent microstructural stability, mechanical properties, and processing rheology. This significantly reduces costs for plastics modification enterprises while addressing the issues of material loss and non-uniform mixing associated with ultra-fine powders.

Applications

Antimony Trioxide masterbatch, as a flame retardant masterbatch, can be widely used for the flame retardancy of materials such as ABS, HIPS, PBT, PA6, PA66, PP, PE, PVC.

Packaging

Packaged in 25kg PE bags, 1000KG/ pallet.

Product specifications can be customized according to customer requirements.



Physical Properties

No.	Test Items	Test Standards	Quality Requirements	Test Results
1	Melt Flow Index (160° C, 10kg)	ISO1133	≤1.2g/min	0.85g/10min
2	Volatile Substances	–	≤0.05%	0.01%
3	Effective Flame Retardant Substances	–	≥85%	Applied
4	Particle Size	–	1.4 – 2g/100	1.81g/100
5	Density	GB/T 21782.3 – 2008	1.83 – 1.88/cm³	1.86/cm³
6	Bulk Density	GB/T 6286 – 2021	1.2 – 1.4/cm³	1.29/cm³

Application Comparison

No.	Formula	1	2
1	PA66%	56.5	56.5
2	Decabromodiphenyl Ethane%	10	10
3	Antimony Trioxide%	3.5	0
4	ATO – 201%	0	3.5
5	Others%	5	5
6	Glass Fiber%	25	25

Physical Properties

No.	Test Items	Test Standards	1	2	Unit
1	Density	ISO1133	1.487	1.523	Kg/m³
2	Ash Content	ISO3451	22.22	22.03	%
3	Tensile Strength	ISO527	123	135	MPa
4	Elongation at Break	ISO527	4.6	4.5	%
5	Bending Strength	ISO178	185	202	MPa
6	Bending Modulus	IOS178	6702	7133	MPa
7	Charpy Notched Impact	ISO179	10.3	12.1	KJ/m²
8	Charpy Unnotched Impact	ISO179	54.4	58.4	KJ/m²
9	Melt Flow Rate	ISO1183	9.94	10.6	
10	Glow Wire Ignition Temperature of Material	IEC60695 – 2 – 13	875	900	° C
11	Glow Wire Flammability of Material	IEC60695 – 2 – 12	960	960	° C
12	Comparative Tracking Index	IEC60112	350	375	
13	Flame Retardant	UL94	V– 0 1.6mm	V–0 1.6mm	

Innovative Flame Retardant Composite Antimony 99A-100



Introduction

Innovative flame retardant complex antimony 99A-100 is produced by compounding multiple high-efficiency flame retardants, along with dispersants, smoke suppressants, stabilizers, and other additives. It can completely replace Sb_2O_3 , providing cost reduction and efficiency improvement for customers without compromising the flame retardancy and physical properties of the product.

Advantage

- Stable whiteness and hue, suitable for light-colored products.
 - Improves the temperature resistance of PVC and offers excellent low-temperature performance.
 - Low halogen and low lead/arsenic content, meeting REACH and RoHS certifications.
- Superior tensile strength, elongation, and aging resistance.

Product Application

This product is mainly applied to wire and cable, rubber and engineering plastic modification.

Packaging

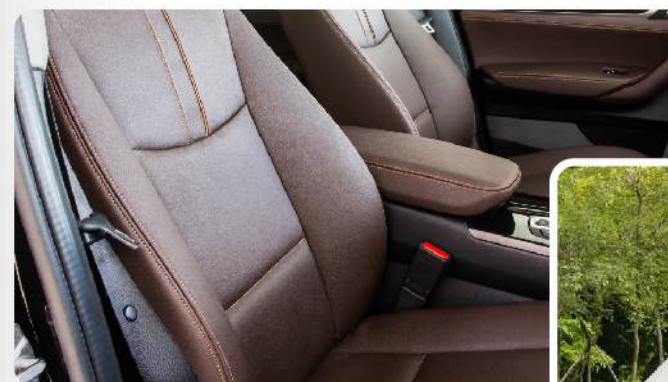
Paper-plastic composite bag, net weight 25KG.

Physical properties

No.	Item	Unit	Parameter
1	Appearance		White Powder
2	Whiteness	%	≥ 95
3	Effective flame retardant content	%	≥ 99
4	Thermal decomposition temperature	$^{\circ}C$	≥ 450
5	Average particle size (D50)	μm	≤ 3.0
6	CuO	%	≤ 0.0012
7	Se	%	≤ 0.003

Application

No.		Sample formulation 1	Sample formulation 2
1	PVC	100	100
2	Plasticizer	44	44
3	Calcium Carbonate	40	40
4	Calcium-Zinc Stabilizer	4	4
5	Black masterbatch	2	2
6	99.8 Antimony Trioxide	5	0
7	Composite Antimony 99A-100	0	5
8	Limiting Oxygen Index (180sec)	31.3	31.2
9	Limiting Oxygen Index (self-distinguishing)	30.5	30.2



Inorganic Flame Retardant DH-9800



Introduction

DH-9800 is a cutting-edge, ultrafine powder inorganic flame retardant synergist. Produced through a multi-layer nano-coating process, DH-9800 offers exceptional thermal stability, halogen-free composition, and superior flame retardant synergistic effects. Its fine particle size, high purity, and large specific surface area make it an ideal additive for various polymer materials. DH-9800 is non-toxic, odorless, and non-corrosive, making it a safe and environmentally friendly choice.

Appearance

This product is a white powder with a whiteness of over 95%, an average particle size of 1.1 μm, and high purity. It has a large specific surface area, exhibiting excellent surface and volume effects.

Properties

This product is a high-purity, fine white powder with a large specific surface area. It exhibits excellent surface and volume effects due to its ultra-fine particle size.

Product Application

PVC wire and cable, Rubber and Modified plastic Industry.

Parameter

No.	Materials	A	B	C	D
1	PVC(K=71-72)	100	100	100	100
2	DOP	35-40	35-40	35-40	45-50
3	Chlorinated Paraffin wax-52	14-18	14-18	14-18	14-18
4	Calcium Carbonate	30-50	30-50	30-50	30-60
5	Heat Stabilizer	3-5	3-5	3-5	3-5
6	Antimony Trioxide	1.5	2	2.5	1.5
7	DH-9800	1.5	2	2.5	1.5
8	Limiting Oxygen Index%	28-29	29.5-30.5	31.5-32.5	27-28



Flame Retardant masterbatch for Alumium Composite Panel (ACP)

Physical Properties

No.	Test Items	55101	55301	HFM-500	HGM-700X
1	Melting Flow Index	2-3/10Min (190°C/10KG)	2-2.5/10Min (190°C/5KG)	2.5-3/10Min (190°C/5KG)	2-3g/10Min (190°C/10KG)
2	Density	1.65 ± 0.05 g/cm ³	1.55 ± 0.05 g/cm ³	1.45 ± 0.05 g/cm ³	1.80 ± 0.05g/cm ³
3	Calorific Value	7-9MJ/KG	13-15MJ/KG	14-15MJ/KG	6-8MJ/KG
4	Tear Strength at 180°	5-7N/MM	6-8N/MM	7-10N/MM	5-7N/MM

Introduction

Flame retardant masterbatch for aluminum composite panels (ACPs) is an environmentally friendly and highly efficient flame retardant specifically designed for the core material of ACPs.

Eco Nano masterbatch has successfully passed the national standard GB 8624 and European standard EN-13501, meeting the Class B fire rating for building materials.

Product Features

- **Primary Application:** Primarily used in the production of fire-resistant ACPs, our masterbatch serves as the plastic core material. It offers excellent fire resistance, toughness, good adhesion to polymer films, and easy processing.
- **Enhanced Performance:** Flame retardant ACPs produced using our core material not only meet the EN13501 and Chinese Class B fire rating standards but also address the issue of weak mechanical properties at the folded edges during installation.
- **Improved Properties:** Eco Nano masterbatch significantly enhances the mechanical strength, fatigue resistance, corrosion resistance, and peel strength at the folded edges of ACPs.



Talc Powder

Introduction

This talcum powder is specifically designed for rubber and plastic foaming materials, significantly improving and enhancing the product's aging resistance, reducing compression set and deformation.

When used in EVA shoe materials, it exhibits excellent adsorption and affinity, ensuring good flowability during processing, resulting in a product with a superior color, high foaming rate, and no weight increase.

Product Features

High purity, fine particle size, and high whiteness.
Non-toxic and odorless.
Ideal filler for high-end automotive and home appliance applications.

Applications

Rubber and plastic foaming materials
EVA shoe materials

For Rubber and Plastic Foaming, Shoe Materials

No.	STANDARD DATA	DH-300A	DH-600S	DH-600B	DH-1250H	DH-1500H
1	Partical size(um)	≤10	≤7	≤6.5	≤10	≤6.5
2	Pass Rate 45 (um%)	≥99.98	≥99.99	≥99.99	≥99.98	≥99.99
3	Whiteness (%)	≥90	≥85	≥90	≥80	≥80
4	Loss on Ignition (1000℃)	≤40	≤30	≤25	≤10	≤10

No.	STANDARD DATA	DH-555	DH-666	DH-888	DH-666A	DH-888A
1	Partical Size (um)	≤7	≤6	≤5	≤5.5	≤4.5
2	Pass Rate 45um %	≥99.99	≥99.99	≥99.99	≥99.99	≥99.99
3	Whiteness(%)	≥91	≥93	≥93	≥93	≥93
4	Loss On Ignition (1000℃)	≤20	≤20	≤20	≤15	≤10

For Modified Plastic

No.	STANDARD DATA	DH-9055	DH-9050	DH-666A	DH-888A	DH-8200	DH-222B
1	Partical Size (um)	≤10	≤5	≤5.5	≤4.5	≤4	≤3
2	Pass Rate 45um %	≥99.99	≥99.99	≥99.99	≥99.99	≥99.99	≥99.99
3	Whiteness(%)	≥90	≥92	≥93	≥94	≥92	≥94
4	Loss On Ignition(1000℃)	≤10	≤10	≤15	≤10	≤8.5	≤10



This talc powder is the ideal choice for manufacturers seeking to improve the performance and quality of their products.

Ultra Fine-Plas Talc

Introduction

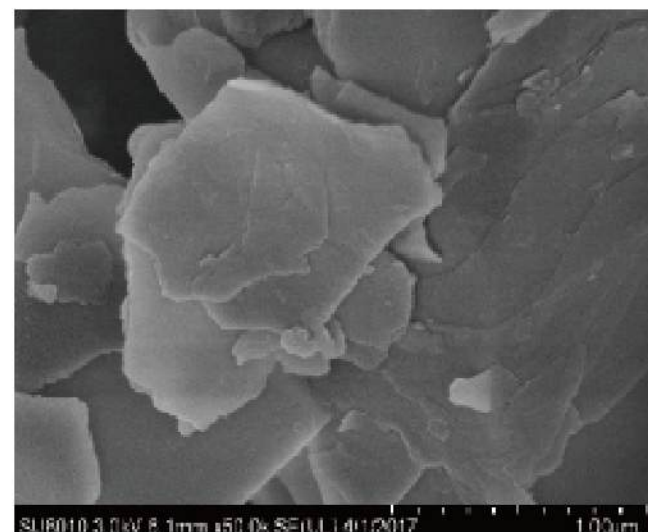
Ultra Fine-Plas talc is produced from carefully selected talc ore using German-imported high-pressure Air Jet Milling technology. It can highly maintain the platy structure of talc, with a high aspect ratio. Ultra-fine talc can further improve the flexural modulus and strength of resins.

Product Features

- High integrity of the platy structure, narrower particle size distribution, and higher aspect ratio.
- Can simultaneously improve both the toughness and rigidity of products, achieving a balance of rigidity and toughness.
- Can improve the heat resistance of products and enhance product appearance.
- Can be compressed, making it easier to feed compressed products.

Standard Data

No.	STANDARD DATA	DH-05A	DH-06A
1	Partical Size (um)	≤4	≤3
2	Pass Rate 45um %	≥99.999	≥99.999
3	Whiteness(%)	≥95	≥95
4	Loss On Ignition (1000℃)	≤7	≤7



Talc Masterbatch

For Sheets and Food Box

Introduction

Talc masterbatch for sheets and food box is produced by twin-screw extrusion of high-silica, high-whiteness talc filled polypropylene carrier.

Product Features

- Excellent plasticization and dispersion.
- Smooth surface, high whiteness, and wax-free.
- Low moisture content, requiring minimal defoaming agent.

Applications

- Disposable food containers
- Plastic trays
- Transparent plastic trays



Injection Molding Grade

Introduction

Injection molding grade talc masterbatch is produced using high-whiteness, high-silica talc, PP and PE carriers, and is processed through a twin-screw extruder with high shear force to achieve a high dispersion of talc particles.

Product Features

- High filler loading and excellent dispersion.
- High whiteness, good color, and easy to color match.
- Significant reinforcement effect, significantly improving the strength and shrinkage resistance of plastic products.
- Low odor and easy to process.

Applications

- Injection molding of PP and PE plastic products, reinforcement, etc.

Magnesium Hydroxide (Mineral-Based)

Introduction

Eco Nano has developed a new product, Magnesium Hydroxide.

Utilizing high-quality magnesite resources from our local area, this product undergoes a complex processing procedure including coarse crushing, fine crushing, physicochemical purification, ultra-fine grinding, and surface treatment. The final product offers excellent filling, flame retardant, and smoke suppression properties for various plastics, rubbers, PU, fibers, and coatings.

Specification

No.	STANDARD DATA	DH-5A	DH-6A	DH-8A	DH-9A
1	Partical Size D50 (um)	3-10	3-10	3-10	3-10
2	Pass Rate 45um %	≥99.98	≥99.99	≥99.99	≥99.99
3	Whiteness(%)	≥80	≥88	≥92	≥92
4	MgO%	≥50	≥55	≥60	≥64

Modified Magnesium Hydroxide

Introduction

Modified magnesium hydroxide is produced by coating magnesium hydroxide with stearic acid and silane coupling agent. The modified product exhibits better compatibility with resins, improved dispersion, and allows for higher loading levels.

Applications

- Electric wires and cables
- Rubber
- Adhesive tape
- Aluminum-plastic composite panels



Natural Barium Sulfate

Introduction

Natural barium sulfate is a fine powder material produced by selecting high-quality barite and then subjecting it to ultra-fine grinding. It exhibits high gloss, high specific gravity, and excellent stability.

Product Features

- Excellent flowability and high gloss
- Improves the strength and stability of rubber and plastic products
- Low oil absorption, reducing the resin addition ratio

Specification

No.	Item	Whiteness	Specific Gravity	Particle Size D50
1	LB-A08	≥90	4.3-4.4	4-6um
2	LB-A15	≥90	4.3-4.4	3-4um



Kaolin

Introduction

Kaolin is a high-whiteness product that has undergone a process adjustment to achieve a coarser particle size and lower oil absorption. It finds extensive applications in various fields such as coatings, rubber, and ceramics.

Application

Coating, Plastic, Rubber and Construction material, etc.

Specification

No.	Item	Unit	Standard
1	Whiteness	R457, %	≥ 93
2	Particle size	-2 um, %	74 - 78
3	Average Particle size	D50, um	1.4 ± 0.1
4	Screen residue	325 mesh, %	≤0.01
5	Oil Absorption	g/ 100g	55 ± 3
6	Dispersion	Hegman, um	≤ 65
7	Moisture	%	≤ 0.5
8	PH	...	6.0 - 8.0

Chemical Properties

No.	SiO ₂ (%)	Al ₂ O ₃ (%)	Fe ₂ O ₃ (%)	TiO ₂ (%)	CaO(%)	MgO(%)	K ₂ O(%)	Na ₂ O(%)	MnO(%)
1	52 ± 2	45 ± 2	≤0.8	≤1.5	≤0.5	≤0.3	≤0.1	≤0.2	≤0.004