MISSION

Guangzhou Mingshen New Material Co., Ltd.

Innovative/Scientific/Practical

Patent Certificate

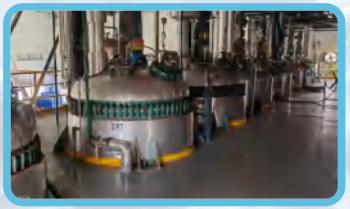
Factory Photos












MISSION

Engineering Modification Additives

Laser Marking (Radium Carving) Additive

Principle of Laser Marking

The laser emits a high-energy pulsed laser beam. When the laser beam acts on the material to be marked, the light energy is converted into heat energy under the action of the laser marking additive, resulting in the surface of the material melting, foaming, discoloration and even gasification, thus forming a graphic.

Laser Marking Features

- Non-contact processing, durable;
- High precision, fast marking speed, clear graphics, high marking reliability;
- High-resolution micro markers can be made;
- No pollution to the environment;
- Easy to operate, high anti-counterfeiting function;
- Strong product traceability;
- Can achieve high-speed automatic marking;
- The overall production cost of a single part is much lower than that of traditional ink printing.

Technical Data

参数/Parameters	典型值/Typical values	标准/Test methods
形态/Form	粉末/Powder	目视/By Sight
颜色/Color	White or Light Grey	目视/By Sight
熔体流动速率/Melt flowing rate (g/10min, 190 °C, 5kg)	15.0-25.0	ISO 1133:1997
密度/Density(g/cm^3)	1.3-2.1	ISO 1183-1:2004
适用激光波长/Suitable laser wavelength (nm)	355-1064, 10600	Internal standard
包装大小/Package Size (kg)	20.00	---

Application Field

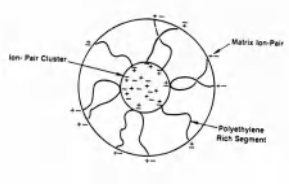
It is suitable for marking dark images on light plastic surface by laser.

Be suitable for PC、ABS、PA6、PA66、PS、PBT、PET、PVC、POM、TPU、TPE PP、PE、TPV。

It is suitable for laser marking system with laser wavelength of 355-1064nm, and also for CO2 laser marking system with laser wavelength of 10600nm. YAG and fiber laser marking systems (355-1064nm) are recommended.

Nucleating Agent Series

The ionic morphology results in rapid crystallization to form smaller spherical crystals. Therefore, crystallization begins at high temperatures at this time, shortening the cooling time and thus shortening the production cycle of injection molding.



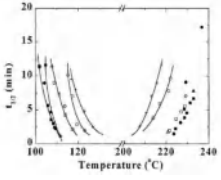
Product	Main Component	Performance Advantage
NA-1085	Sodium Salt Ionomer	Lower the hot crystallization temperature and increase the cold crystallization temperature to achieve good crystallinity
CA-1012	Calcium carboxylate salts with long-chain carbon as the main component	Efficient nucleation also provides additional fluidity and mould releasability

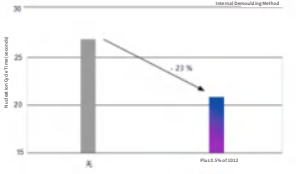
Comparison of ionomer resins with other additives in nucleation and crystallization

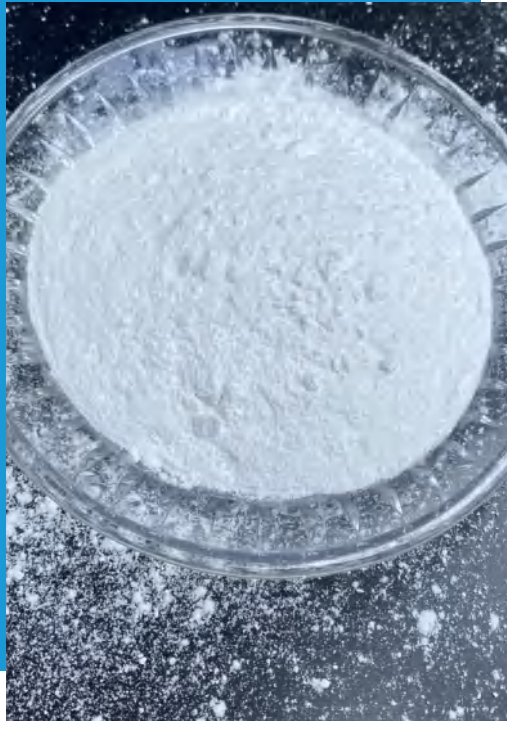
	Additives	Dosage (wt.-%)		Additives	Dosage (wt.-%)
PET		0	B1	C	0.5
A1	1085	0.5	B2	C	1
A2	1085	1	B3	C	3
A3	1085	3	B4	C	5
A4	1085	5			

1085 is more effective than C product in promoting nucleation and crystallization

Glass fiber reinforced polyamide PA6.6 Injection molding (30% glass fiber)







Graft Compatibilizer Series

This series of products has good thermal stability, does not appear yellowing phenomenon at higher temperatures, suitable for nylon, polyester PET and PBT applications with high requirements of color.

Product Number	Softening Point (°C)	Viscosity (170°C) (mpa•s)	Acid Value (mgKOH/g)	Percentage of Grafting (%)
PPMA-793	~150	~700	~40	~6
PEMA-595	~120	~60	~17	~3

The low viscosity of PPMA-793 promotes optimal mixing of different substances, even after a single granulation by a laboratory single screw extruder, a mixture containing 1% PPMA-793, 90%

	Room Temperature	160°C/30m I n	250°C/30in I n
A	●	●	●
PPMA-793	● ● ●	● ● ●	● ● ●
PEMA-595	● ● ●	● ● ●	● ● ●

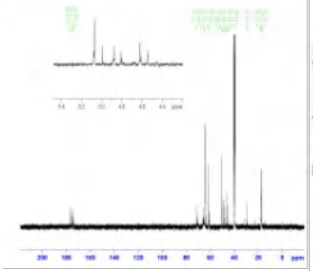
▲ This figure shows that this series of products has good thermal stability

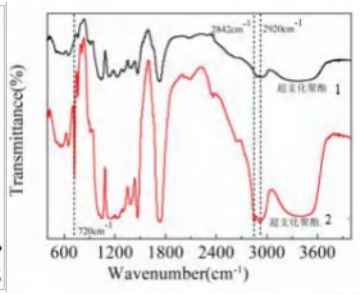
	Room Temperature	160°C/30m I n	250°C/30in I n
A	●	●	●
Product Color (yellowing index)	● ● ●	● ● ●	● ● ●
PEMA-595	● ● ●	● ● ●	● ● ●
PPMA-793	● ● ●	● ● ●	● ● ●

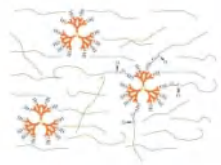
Flow Lubricant Series

Product	Main Component	Performance Advantage	Application Field
FA520A	Hyperbranched Polyester Compounds	Efficiently Improve Flow Performance	PA6,PA66,High-Temperature Nylon, Long Chain Nylon
FI530A	Silicone Oxide Polymer	Efficient Demoulding Performance	PA,PBT,PET,PC+Fiber, ABS+Fiber
FE550A	Vinyl Acrylic Copolymer	Improve Luster, Increase Demoulding, Good Lubrication	PA,PBT,PET,PC+Fiber,ABS+Fiber

Hyperbranched Polyester







Its working principle is shown in the figure

This product is mainly suitable for polyamide series (PA6, PA66, PA6T, PA9T, PA10T and other high-temperature nylon, long chain nylon).

▶▶▶ FA520A **Features**

Molecular structure: Hyperbranched structure; General formula of main molecule: Cn1Hn2On3; Molecular weight: 250-600; Mesh number: 40-200 mesh; Branching degree 0.61-0.72; Decomposition temperature: 386.4 ℃; Density: 1.3000g/cm.

FE550A Used in nylon + glass fiber

GF	FE 550A	montan-wax	Tensile Strength in yeild(MPa)	Tensile Strain (%)	Flexual modulus (MPa)	Flexual strength (MPa)	Notched Izod (J/m)	HDT(℃)
40	-	-	180.2	2.46	10944.07	264.24	113.239	210.4
40	0.8	-	179.04	2.4	11189.17	253.91	113.634	211.8
40	-	0.8	182.43	2.13	11575.62	245.24	109.099	211.9

FE550A Used inPET+glass fiber

GF	FE550A	montan-wax	Tensile Strength in yeild(MPa)	Tensile Strain (%)	Flexual modulus (MPa)	Flexual strength (MPa)	Notched Izod (J/m)	HDT(℃)
40	-	-	143.98	2.41	11960.63	213.04	76.873	77.5
40	0.8	-	139.2	3.06	11611.57	216.74	98.266	77.2
40	-	0.8	139.71	1.98	12529.85	222.41	76.341	77.3

FE550A Used in nylon + glass fiber

Halogen-free Flame Retardant Masterbatch WH-066 Additive

WH-066 is a halogen-free flame retardant masterbatch specially developed by our company for PP panel and sheet, aiming at the problems of poor flame retardant effect of PP panel on the market presently, such as uneven board surface and many pit points. WH-066 can perfectly solve the shortcomings of flame retardant panel and sheet, and provide customers with complete process and product solutions.

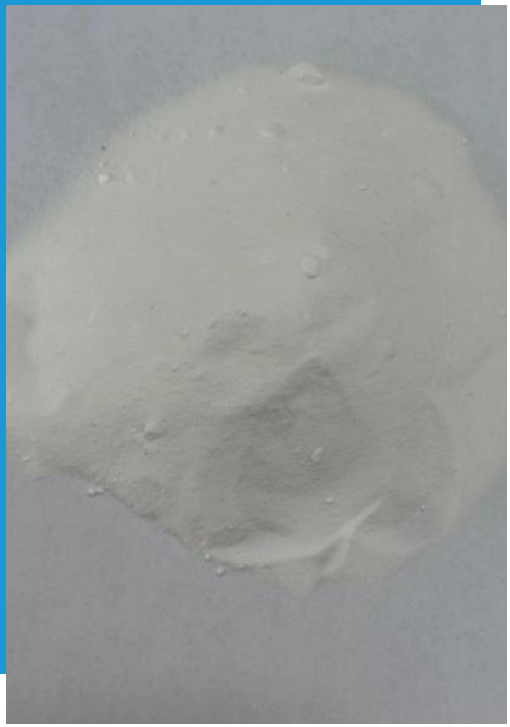
Item	Unit	Text Value
Flame Retardant Content	%	65-70
Water Content	%	0.1
Appearance		White Particle

——Product Features

WH-066 is a special masterbatch for PP panel and sheet developed by our company. In view of the unstable performance of halogen-free flame retardants in the process of extrusion, we have carried out surface activation and particle size control of flame retardants in the synthesis stage of flame retardants, and then used a special treatment process in the masterbatch production stage. After improving the adjustment phase in all aspects, WH-066 avoids the defects of ordinary halogen-free flame retardants in the extrusion process of panel and sheet, and perfectly solves many problems in the extrusion process of panel and sheet. The masterbatch can reach the flame retardant V0 grade when the addition amount of 25-35% in the panel and sheet.

——Package and Storage

- Paper-plastic composite packaging, 25 kg;
- The product shall be sealed and stored in a dry, dust-free and cool place.



Flame Retardant PEPA Additive

Flame retardant PEPA is a highly efficient halogen-free flame retardant independently developed and synthesized by our company. It is mainly used in TPE, epoxy resin, acrylic resin and UV resin, etc. It has excellent gas and solid two-phase flame retardant properties. This flame retardant has excellent resin compatibility. During the combustion process, due to its special molecular structure, it can quickly generate an expanded carbon layer to isolate oxygen and heat.

Item	Unit	Text Value
Phosphorus Content	%	22
Particle Size D50	μm	10
Melting Point	℃	>215

——Product Application

The flame retardant PEPA can be well dispersed in water and oily epoxy resin/acrylic coatings, and has good compatibility with TPE, giving the resin emulsion good flame retardant properties. If it is combined with other flame retardants at the same time , can achieve a higher level of flame retardant effect. The general addition ratio is 10-15%. When combusted, it expands to form an ultra-thick carbon layer, making the external flame completely unable to burn through the material, achieving an extremely high fire protection level.

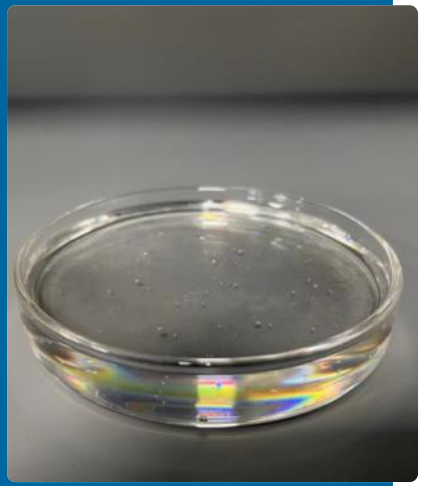
——Package and Storage

- Paper-plastic composite packaging, 25 kg;
- The product shall be sealed and stored in a dry, dust-free and cool place.

Organophosphorus Flame Retardant FR- 619 Additive

FR 619 is an organic halogen-free phosphorous flame retardant, mainly used in epoxy system coatings, adhesives, electronic adhesives, composite materials and so on. This product contains hydroxyl functional groups and is a reactive additive that ensures no migration and precipitation after addition.

Appearance	Phosphorus content %)	Hydroxyl Value	Acid Value	Density g/cm³)	Viscosity mpa*s
Yellowish Clear Liquid	13-15	180-200	<100	1.15	3000-3500



Application Performance Characteristics

- Halogen-free environment-friendly products;
- Low VOC;
- Migration resistance;
- No precipitation;
- High flame retardant efficiency and anti-aging performance;
- With high phosphorus content, at the same time with excellent hydrolysis stability;

Usage Method

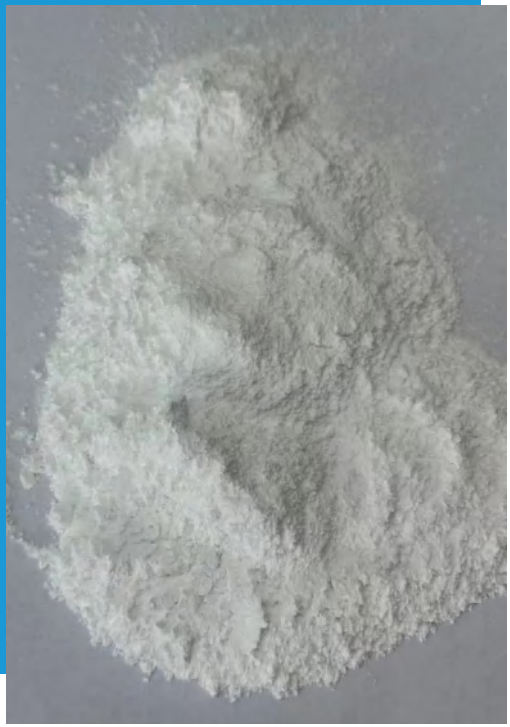
In the production of flame retardant polyurethane foam, the addition amount of 10-15%;

In the polyurethane system, add 10-15%;

In other systems, add 8-12%;

Package and Storage

- 25KG/ barrel, 200KG/ barrel, 1000KG/ barrel.
- It should be stored in dark, low temperature, dry and sealed conditions, and the minimum shelf life should not exceed 12 months from the date of delivery.



Flame Retardant FR-1105 Additive

FR-1105 is an efficient phosphorus-nitrogen flame retardant for epoxy/acrylic coatings (no halogen and no red phosphorus) with excellent gas and solid two-phase flame retardant properties. The flame retardant has excellent resin compatibility and can quickly form an expanded carbon layer during combustion, which plays a role in isolating oxygen and heat.

Item	Unit	Test Value
Water Content	%	0.3
Particle Size D50	μm	5
Initial Decomposition Temperature	℃	>290

Product Application

FR-1105 can be well dispersed in water, oily epoxy resin/acrylic paint, so that the resin emulsion has good flame retardant properties, if at the same time and other flame retardants cooperate with each other, not only can achieve a higher level of flame retardant effect, is the current epoxy resin/acrylic coating application of the best choice.

In epoxy resin/acrylic emulsion, adding about 15% can reach UL 94 V0 level;

Metal hydroxides, such as aluminum hydroxide, magnesium hydroxide, etc., may have adverse effects on the flame retardant system;

The effects of kaolin, mircosilica powder and wollastonite are relatively small.

Package and Storage

- Paper-plastic composite packaging, 25 kg;
- The product shall be sealed and stored in a dry, dust-free and cool place.

MISSION

PVC、Masterbatch Additives

Product Application Attributes

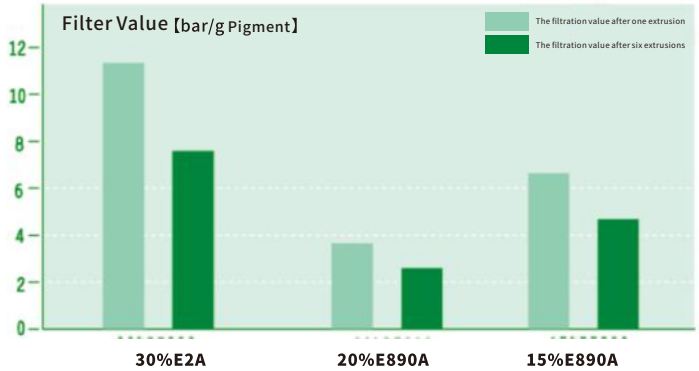
Type	Number	Typical Specifications			
		Softening Point (℃)	Viscosity (map.S@140℃)	Acid Value (MgKOH/g)	Appearance
Polyethylene Wax	E-1080	105-110	20-25	0	White Small Particle
	E-1020P	110-115	15-20	0	White Small Particle
	E-601	110-115	25-40	0	White Small Particle
	E-605	110-115	80-100	0	White Small Particle
	E-608	110-115	400-500	0	White Powder
	E-700	105-110	700-1000	0	White Small Particle

Application Field

Polyethylene homopolymer and oxidized polyethylene wax can be used in PVC manufacturing process. Its basic function is equivalent as an external lubricant, while achieving many other benefits.

Product Application Attributes

Type	Number	Typical Specifications					
		Softening Point(℃)	Viscosity (map.S@140℃)	Acid Value (MgKOH/g)	Va Content%	Density Kg/m³	Appearance
Synthetic Polyethylene Wax	E-2A	105	550	/	0	/	White Powder
	E-650P	105	375	/	0	/	White Powder
	E-890A	98	650	/	12	/	White Powder
Hyperdispersant	E291	~116°C	~2500	~44	硬度dmm (ASTM D-5) <1	0.98	Fine Particle



It is clear from the figure that E890A can get better results in the dispersion of phthalocyanine pigment. When the strength of the pigment is unchanged, the filter pressure measured by E890A as a dispersant is much lower than that of E2A as a dispersant. In addition, the E890A has excellent lubricity and high efficiency, resulting in a lower filter pressure value and a higher coloring force with a lower addition amount.

Formula:

40%PV FastGreen
30%E2A
30%LLDPE

40%PV FastGreen
20%E2A
40%LLDPE

40%PV FastGreen
15%E2A
45%LLDPE

E2A has high antioxidative properties, is completely free of fisheye, and has a white appearance. Moreover, it has good thermal stability, and in practical applications, it can improve the rigidity of the pigment and there is no odor when melting.

E291 is recommended for applications in engineering plastics such as PA,PA glass fiber, polyester, PC and other engineering plastics; High thermal stability, low volatile content, good demoulding effect and anti-adhesion. The pigment that is difficult to disperse or the high concentration of color masterbatch in the plastic pigment is used as the hyperdispersant.

E890A is a modified polyethylene wax that can be used in polar plastics due to its polar groups.

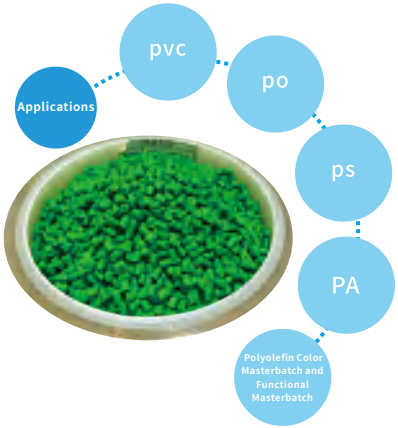
Product Application Attributes

The role of polyethylene wax in color masterbatch

Improved dispersion characteristics of organic and inorganic colorants and pigments that are difficult to disperse enhance pigment coloring strength and save costs while improving pigment dispersion, ensure the compatibility of pigment filling characteristics with polyolefin and other engineering thermoplastics easy processing and improve productivity.

Type	Number	Typical Specifications					
		Softening Point(℃)	Viscosity (map.S@140℃)	Acid Value (MgKOH/g)	Va Content%	Density Kg/m³	Appearance
Low Molecular Weight Oxidized Polyethylene Wax	E-607	103	250	7	/	0.93	White Powder
	E-615	103	300	15	/	0.93	White Powder
	E-625	108	350	17	/	0.98	White Powder

Product Applications



Another main function of polyethylene wax lubricant is to reduce the surface friction between the materials and the material and its processing equipment, thereby reducing the flow resistance of the entire melt, reducing the viscosity of the melt, improving the flow performance, avoiding the adhesion between the equipment and the melt, thus greatly improving the surface finish of the product.

In the polyolefin filled masterbatch, in order to improve the fluidity of the masterbatch processing and facilitate more uniform dispersion of the masterbatch in the matrix resin, we often choose polyethylene wax as a dispersant to moisten and disperse the inorganic powder, solve the agglomeration problem of calcium carbonate particles, and thus improve the fluidity and mechanical properties of the material.

Product Application Attributes

Type	Number	Typical Specifications					
		Softening Point (°C)	Viscosity (map.S@140°C)	Acid Value (MgKOH/g)	VaContent%	DensityKg/m³	Appearance
High Density Oxidized Polyethylene Wax	E-816	138	~8500	25	/	0.99	White Powder
	E-825	136	~4500	25	/	0.98	White Powder
	E-830	136	~3500	15	/	0.98	White Powder

Applications


PVC Process


Color Masterbatch

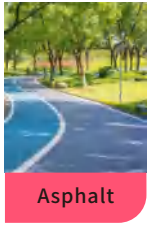

Modified Plastic


Wax Emulsion

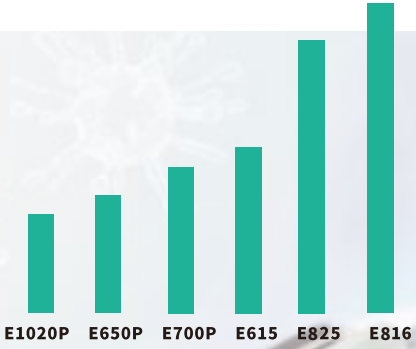

Coating


Ink

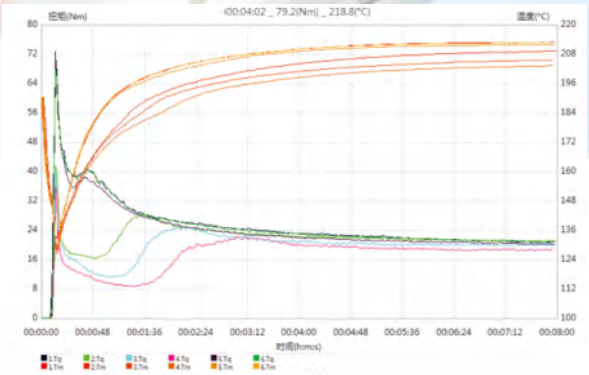

Candle


Asphalt

Plasticizing Control



Delayed Plasticization Normal Plasticization Plasticizing Promotion



Sample Name	Quantity	Zone 1 Temperature	Zone 2 Temperature	Zone 3 Temperature	Material Temperature	Rotational Speed
1.2002-7-10---(E816)	0.0g	190.1°C	190.7°C	190.1°C	190.6°C	47.8rpm
2.2002-7-10---(E700p)	0.0g	190.0°C	190.5°C	189.8°C	190.3°C	47.8rpm
3.2002-7-10---(E650p)	0.0g	190.0°C	190.7°C	189.7°C	190.5°C	47.8rpm
4.2002-7-10---(E1020p)	0.0g	189.9°C	190.6°C	190.1°C	190.4°C	48.1rpm
5.2002-7-10---(E615)	0.0g	190.0°C	190.6°C	189.7°C	190.5°C	47.8rpm
6.2002-7-10---(E825)	0.0g	190.0°C	190.6°C	190.0°C	190.7°C	47.8rpm

Loading Peak Torque	Minimum Torque (B)	Maximum Torque (X)	Final Torque (E)	Fusion Time (A-X)	Plasticizing Rate (V)
36.2 Nm	8.8 Nm	22.1 Nm(+inf%)	19.2 Nm	00:02:48 (+inf%)	21.8 Nm/min
67.7 Nm	38.1 Nm	40.7 Nm(+inf%)	21.0 Nm	00:00:29 (+inf%)	8.6 Nm/min
72.8 Nm	38.5 Nm	40.8 Nm(+inf%)	20.9 Nm	00:00:29 (+inf%)	6.9 Nm/min
71.8 Nm	35.7 Nm	38.2 Nm(+inf%)	20.4 Nm	00:00:26 (+inf%)	8.0 Nm/min
41.5 Nm	16.5 Nm	28.4 Nm(+inf%)	21.3 Nm	00:01:23 (+inf%)	25.5 Nm/min
40.9 Nm	11.3 Nm	24.8 Nm(+inf%)	20.1 Nm	00:02:03 (+inf%)	29.1 Nm/min

- The experimental conditions are: the laboratory basic formula of our organic tin stabilizer, for reference only.
  PVC resin organic tin stabilizer, calcium powder, titanium dioxide, ACR, CPE
- The dosage for this experiment is 74 g + 0.5 g lubricant.

Product Application Attributes

Type	Number	Typical Specifications			
		Dropping Point(℃)	Iodine Value (gJ2/100g)	Acid Value (MgKOH/g)	Saponification Value (mgKOH/g)
Polyester Wax	EG60	44-47	0-1.0	0-2.0	164-176
	EG70	55-58	/	/	270-280
	EGH4	76-81	/	0-3	166-176

Type	Number	Typical Specifications			
		Melting Point (℃)	Flash Point(℃)	Acid Value (MgKOH/g)	Calcium Content (%)
Polyester Wax	EG78	105-115	>260	/	1.40-1.61




PVC Applications

PVC Foam Board Lubricant

Product Name	Specification	Additive Amount
E650P	Polyethylene Wax	0.2~0.4 phr
E816	High Density Oxidized Polyethylene Wax	0.2~0.6 phr

The key to the production of PVC foam board is whether the blowing agent can be effectively dispersed to achieve uniform density control, and whether the plasticization can be effectively controlled. We can also customize formulations according to product requirements to meet the diverse needs of customers for lubricants.

PVC Transparent Products/ Transparent Film Lubricant

Because transparent products have high requirements for lubricants and high requirements for transparency, general external lubricants will affect transparency, and E816 does not affect the transparency of transparent products can also help demoulding.

PVC Edge Strip Lubricant

In the application of PVC edge strips, it is necessary to ensure that the processing process is smooth and the wax cannot precipitate and affect the post-treatment processing. High molecular weight polyethylene wax and high density oxidized polyethylene wax can very well help PVC sealing strip enterprises to improve product quality and reduce the scrap rate.

Nylon Specialized Halogen-free Environmental Friendly Flame Retardant Series

▶▶▶ Flame-retardant enhanced glow-wire properties of nylon based on FA-1908

	GWFI IEC60695-12	GWIT IEC60695-13
FA-1908Flame RetardantPA6	960℃/1mm	775℃/1mm
FA-1908Flame RetardantPA66	960℃/1mm	775℃/1mm

▶▶▶ PA66+GF30 Electrical Property

		Non-flame Retardant	Brominated Polystyrene Flame Retardant	FA-1908 Flame Retardant
CTI	V	600	325	600
Resistivity	Ωm 10E10	6.6	0.4	4.1
Permittivity	10E5 Hz	6.1	5.6	5.5
Dielectric Strength	KV/mm	38	35	37
Dielectric Loss	10E5 Hz	0.0956	0.083	0.0789

◆ Reference Formula

Composition	Ratio (%)
Pa66 EPR27	55
Coupling Agent Kh550	0.5
FA-1908	14
Antioxidant	0.5
Short Cut Glass Fiber 560A	30

◆ Reference Process

Zone One:200	Zone Two:260
Zone Three:260	Zone Four:260
Zone Five:230	Zone Six:220
Zone Seven:210	Zone Eight:210
Zone Nine:230	Zone Ten:250
Handpiece:260	Rotational Speed:300-380

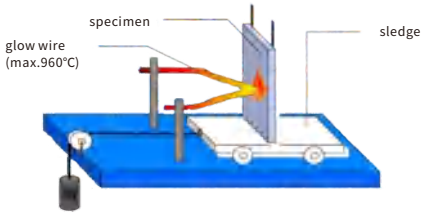
◆ Test Performance

Test Item	Measured Value
Tensile Strength(MPa)	167
Elongation at Break(%)	2.3
Bending Modulus(MPa)	9668
Bending Strength(MPa)	240
Impact Strength(KJ/m²)	92
Notch Impact Strength((KJ/m²)	12.2
Flame Retardant Property(1.6mm)	V-0
GWFI	960℃/1mm
GWIT	775℃/1mm
Melt Flow Index (g/10min)	35

◆ Glow-wire Test IEC 60695

GWIT: Does not ignite at specified temperature conditions (Ignition: flame duration > 5s).

GWFI: Flame extinguished within 30 seconds at specified temperature conditions



FA-1908 Product Introduction

This product is the company's independent research and development of phosphorus-containing environmental friendly flame retardant, the main component is phosphorus-nitrogen type flame retardant through a special process. This product has the characteristics of high flame retardant efficiency, lower processing temperature, no precipitation, good demoulding performance, good colorability and so on. This product used in glass fiber reinforced nylon has excellent mechanical and electrical properties, low-smoke zero halogen, granulation without breaking strips, high flame retardant efficiency, is an efficient flame retardant.

In the 30% glass fiber reinforced nylon system, the addition of 14-16% of this product can reach 94V-0(1.6mm) flame retardant grade.

ADP SERIES

Diethylaluminum Hypophosphate Flame Retardant

PRODUCT INTRODUCTION

ADP diethylaluminum phosphinate is a white powder, phosphorus-containing organic aluminum-based fame retardant with high hydrophobic, high temperature resistance, no migration. it is mainly used in TPE (E.9. TPEE, TPU), polyester (E.g. PET, PBT) polyamides (including glass fiber reinforced) series engineering plastics and epoxy layered printed circuit boards. It exhibits excellent flame retardant performance when combined with nitrogen flame retardants.

According to the requirements of fame retardant in different usage environments, we have optimized or activated organic phosphine salt fame retardants, which is conducive to technological development and use.

All products in this series meet ROHs, halogen-free reguirements, no PH3 release.

TECHNICAL PARAMETER

PHYSICAL PROPERTIES	UNIT	FA-1980	FA-1980S
PHOSPHORUS CONTENT	% (w/w)	23-24	23-24
PILE DENSITY	g/cm^3	500-700	500-700
MOISTURE	% (w/w)	<0.2	<0.2
2%INITIAL DECOMPOSITION TEMPERATURE	℃	>350	>350
AVERAGE PARTICLE SIZE(D_{50})	μm	30-40	20-40

PRODUCTAPPLICATION

***FA-1980** is used in PA6 and PA66 with excellent flame retardant performance. The modified PA can achieve UL94 V-0 (1.6-0.8mm) when the addition is 10-12%. In halogen-free flame retardant high temperature PA6T or PPA, it can achieve UL94 V0 (1.6-0.8mm) by a 12-15% dose.

***FA-1980S** is especially suitable for PBT, PET (glass fiber reinforced and non-reinforced), nylon series engineering plastics. Activation modified organic hypophosphite can improve the interfacial strength between flame retardant and material.

PP FLAME RETARDANTSERIES

Pp Specific Halogen-free Environmentally Friendly Flame Retardant

PRODUCT INTRODUCTION

FP-1900 meets the requirements of EU ROHS, REACH and PAHS directives. After surface treatment, it is easy to be dispersed, resistant to precipitation and has high flame retardant efficiency. When the dose is 20-22%, the modified PP can reach 1.6mm UL94 V-0 grade.

FP-1930/FP-1950 is a new type of bromine, phosphorus and nitrogen composite PP flame retardant, with the advantages of non-migration, low bromine content and low additive amount, etc. It can be used in homopolymerized and copolymerized PP.

It can be used for the flame retardant of homopolymerized and copolymerized PP. When the dose is 1% to 5%, the modified PP can reaches UL94 V-2 grade.

It meets ROHS, REACH and PAHS of EU requirements.

TECHNICAL PARAMETER

PHYSICAL PROPERTY ITEMS	UNIT	FP-1900	FP-1930	FP-1950
APPEARANCE	/	< 0.3	< 0.3	< 0.3
PHOSPHORUS CONTENT	%	16-20	15-18	28-30
INITIAL DECOMPOSITION TEMPERATURE	℃	> 280	> 270	> 270

AMP SERIES

Nylon, Polyester Phosphorus Nitrogen Halogen-free,
Nylonphosphine Silicon Anti precipitation Flame Retardant

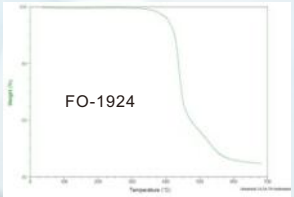
PRODUCT INTRODUCTION

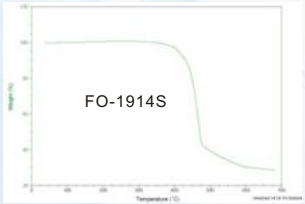
The series is a series of phosphorus nitrogen based halogen-free flame retardants with excellent flame retardant properties and good compatibility with polymer substrates. This flame retardant does not contain red phosphorus components.

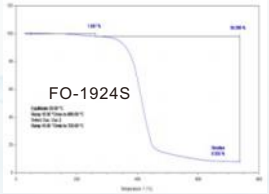
TECHNICAL PARAMETER

PHYSICAL PROPERTIES	UNIT	FO-1924	FO-1924S	FO-1914S	FO-1914	FO-1914G
PHOSPHORUS CONTENT	% (w/w)	19-20	23-24	24-26	24-26	23-25
PILE DENSITY	g/cm^3	500-700	500-700	500-800	500-800	/
MOISTURE	% (w/w)	<0.2	<0.2	<0·2	<0·2	<0·2
2%INITIAL DECOMPOSITION TEMPERATURE	℃	>350	>320	>350	>320	>300
AVERAGE PARTICLE SIZE(D_{50})	μm	20-40	20-40	20-40	20-40	/

THERMOGRAVIMETRIC CURVE







AMP SERIES

Nylon, Polyester Phosphorus Nitrogen Halogen-free, Nylonphosphine Silicon Anti precipitation Flame Retardant

PRODUCTAPPLICATION

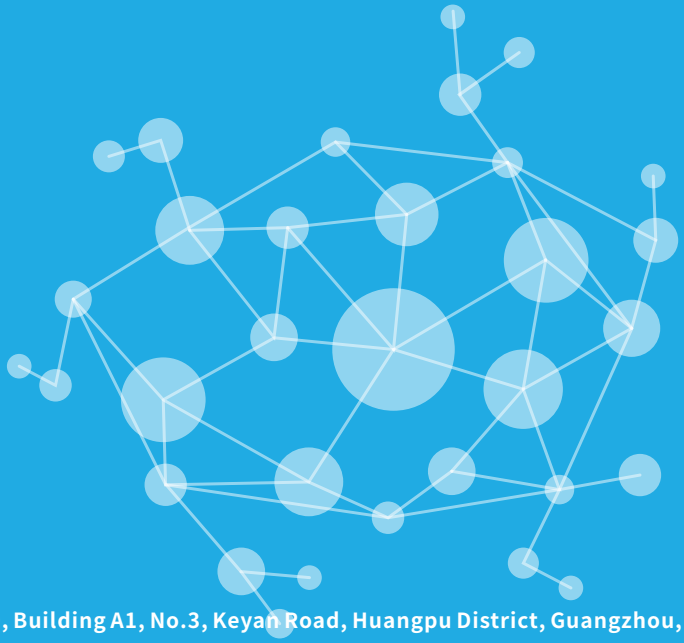
*** FO-1924** Compared with traditional phosphorus nitrogen flame retardants, it has the characteristics of less precipitation and excellent appearance. In 30GF PA6 and PA66 systems, adding 15-16% can achieve 1.6mm UL94 V0 level, and CTI can reach 600V or even higher.

***FO-1924S** Compared to traditional phosphorus nitrogen flame retardants, it has advantages such as a 15% increase in flame retardant efficiency, a 70% reduction in precipitation, excellent appearance, and better color stability. In the nylon 66 (including fiberglass reinforced and non reinforced) series of engineering plastics, adding 13.5 parts can achieve a 1.6mm UL94 V0 grade. In the fiberglass nylon 6 material, 14 parts were added, and the material passed the 1.6mm UL94 V0 grade.

***FO-1914S** The series is a new type of halogen-free phosphine silicon flame retardant developed by our company, which has excellent flame retardant properties and good compatibility with polymer substrates, avoiding screw/mold corrosion caused by conventional phosphorus nitrogen flame retardants and small molecule precipitation problems caused by long-term injection. This flame retardant will not cause a decrease in insulation performance due to moisture absorption, thus providing reliable protection for the stability of the terminal product.

***FO-1914** It is a high temperature resistant and non precipitating phosphine silicon flame retardant. In the nylon 66/30% GF system, adding 12% and 16% can achieve UL94 V0 level of 1.6mm and 0.8mm, respectively. In the high-temperature nylon fiber system, adding 13% can achieve 1.6mm V0, which increases the flame retardant efficiency by more than 10% compared to ADP03; And it has very good color adjustability.

***FO-1914G** It is a cost-effective non precipitating phosphine silicon flame retardant. In the nylon 6/30% GF system, adding 12% and 16% can achieve UL94 V0 grades of 1.6mm and 0.8mm, respectively; In the nylon 66 fiber system, adding 14% can achieve 1.6mm V0.At the same time, we provide particle optimized products with a flame retardant concentration of 95 ± 2%, which can solve problems such as uneven cutting, low production efficiency, and large dust pollution.



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