威科特瑞
发挥非金属资源无限潜能

Technical Data Sheet

TCA-MF6002

Charring Agent

Product Overview: TCA-MF6002 is an organically modified special layered silicate structure, used as a flame retardant synergistic charring agent for low-smoke halogen-free flame-retardant thermoplastic materials. Its unique laminated lamellar structure effectively blocks gases to achieve flame retardant synergy. During combustion, the lamellas migrate and enrich, promoting the compactness and strength of the char layer, inhibiting dripping, and improving the mechanical properties of thermoplastic materials.

Product Indicators

Item	Specification
Composition	Organically modifiedlamellar silicate
Appearance	Milky white tooff-white powder
Whiteness	≥90
Density (25°℃, g/cm)	1.5-1.7
Moisture Content (105°C), %	≤3.5
Particle Size (D97, dry powder), μm	≤35
Bulk Density, kg/m^3	0.25-0.40
XRD（d001）	3.5±0.1

Storage and Transportation

Store and transport at temperatures below 50℃, dry storage.

Application Fields

- Ethylene-vinyl acetate copolymer (EVA)
- Low-density polyethylene (LDPE)
- High Impact Polystyrene (HIPS)
- sulan （PP）
- Polyamide (PA 6)
- lactic acid （PLA)

Address: Qingyishan Industrial Park, Kuandian Manzu Autonomous County, Dandong City, Liaoning Province
Phone: +86 0415 5512939
Email: wutianci@tiancifr.com
Website: www.victoryfr.com

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Product Characteristics and Advantages

It is especially suitable for halogen-free flame-retardant thermoplastic plastics. Its addition can improve flame retardancy, dripping resistance and charring capacity. It can reduce the dosage of aluminum hydroxide or magnesium hydroxide, thereby improving processability and physical and mechanical properties, and reducing the overall weight. It can enhance the barrier properties against oxygen, water vapor and hydrocarbons.

Recommended Dosage

1–5% of the total formula.

The above recommended dosage is for reference only; the optimal dosage needs to be determined through a series of tests.

Usage Method

To achieve the best dispersion and exfoliation of the additive, it is recommended to use a co-rotating twin-screw extruder or kneader when mixing thermoplastic composites.The twin-screw extruder should preferably adopt a screw combination structure with large length/diameter ratio and high shear strength. The melting temperature during extrusion should not be too high to maintain high viscosity of the polymer melt, ensuring strong shear effect on the polymer during extrusion, which is conducive to improving the dispersion performance of organic clay.

Precautions

Avoid "excessive shearing" of clay, which may sometimes cause agglomeration and reduction of aspect ratio. It is better to use distributive mixing units, which provide exfoliation without excessive heat generation due to the synergistic effect of chemical affinity with clay.

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