Melamine polyphosphate AKnoka® MP220

I. Product Introduction

Melamine polyphosphate (MPP) is a halogen-free intumescent flame retardant with phosphorus-nitrogen synergistic properties, characterized by high thermal stability, low smoke emission, and halogen-free composition. Upon heating, it forms a dense carbon layer that effectively insulates heat and oxygen, suppressing melt droplet formation and smoke generation. The compound exhibits excellent compatibility and processing stability, demonstrating compatibility with various polymer materials while meeting environmental flame retardancy requirements.

General characteristic

Surface	White powder
Molecular Formula	$C_3H_6N_6.(H_3PO4)n$
Cas number	218768-84-4
Formula weight	/
Water-solubility	Poor water solubility, almost insoluble in water, excellent hydrolytic resistance, and poor hygroscopic precipitation tendency

Key indicators

Project	Unit	Numeric value
Phosphorus Content	%	13-15
Nitrogen Content	%	42-44
Moisture Content	%	≤0.5
Water-soluble (20°C)	g/L	≤0.1
PH Value	pH	4-6
Decomposition temperature	℃	≥350
Particle size (D50)	μm	≤5

II. Product Features

It exhibits phosphorus-nitrogen synergistic flame retardancy, halogen-free properties with low smoke and toxicity, and high thermal stability. Nearly insoluble in water and resistant to hydrolysis without precipitation, it demonstrates excellent compatibility with various engineering plastics. During flame retardation, it forms a dense carbon layer to effectively suppress smoke and melt droplets. The material also exhibits superior processability and meets environmental flame retardancy requirements.

III. Application Fields

As a high-efficiency halogen-free eco-friendly flame retardant, it is primarily used in electronic appliances such as appliance casings, power adapters, chargers, and PCB circuit boards, as well as automotive components including power battery packs, vehicle connectors, and interior materials. It also finds applications in wire and cable manufacturing, potting compounds, fireproof coatings, building insulation and waterproof profiles, TPO rolls, various polyolefins, engineering plastics, modified plastics, and artificial turf production.

IV. Storage and Packaging

Packaging: Each bag has a net weight of 25 kg and is constructed with a three-layer composite paper bag lined with polyethylene (PE).

Storage: Store in a cool, dry place.

V. Safety and Environmental Protection

The Material Safety Data Sheet (MSDS) for this product may be obtained from our company upon request. The MSDS provides information on material handling, safety precautions, disposal requirements, and applicable local health and safety regulations. This product complies with EU RoHS/REACH regulations. According to the Globally Harmonized System of Classification and Labelling of Chemicals (GHS), this product is not classified as hazardous.

VI. Remarks:

The information and data provided in this document are for reference purposes only, based on our current technical expertise and experience. Customers must conduct tests on purchased products to verify their suitability for specific processes or applications and ensure compliance with intended objectives. We cannot control further applications or processing procedures of the products. Our liability is limited to the delivered products you use and does not cover any indirect losses arising from their use. Our technical support and customer service teams are available to provide product consultation and application assistance. Please feel free to contact us via email or phone.