



Print this page Flame Retardants

Additives

Exolit® AP 423

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Micronized APP (phase II) with extremely low water solubility

Product Description

Exolit AP 423 is a fine-particle ammonium polyphosphate produced by a special method. The crystal modification is phase II. The product is largely insoluble in water and completely insoluble in organic solvents. It is a white powder, non-hygroscopic and non-flammable.

Benefits

- Low solubility in water, low viscosity in aqueous suspensions and a low acid number
- Suitable as an "acid donor" for intumescent coatings. Steel structures coated with intumescent paints can meet the requirements of fire resistance classes specified in DIN, BS or ASTM
- The application of Exolit® AP 423 based intumescent coatings on wood or plastics enables these materials to qualify for Building Material Class B (DIN EN 13501-1)
- Imparts a good flame-retardant effect to adhesives and sealants when incorporated into the base formulation at the rate of 10 - 20%
- (Bio-)degradable by breaking down to naturally occurring phosphate and ammonia
- Non-halogenated flame retardant with favourable environmental and health profile

Specifications

Characteristics	Unit	Target value	DS ¹⁾	TD ²⁾	Test method
Chemical Formula		[NH ₄ PO ₃] _n n > 1000	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Phosphorus	%(w/w)	31.0 - 32.0	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Photometry after oxidizing dissolution; (11/17)
Water / Moisture	%(w/w)	max. 0.5	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Thermogravimetry at 130 °C; (11/03)
Nitrogen	%(w/w)	14.0 - 15.0	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Elemental analysis; (11/07)
Density	g/cm ³	1.9	<input type="checkbox"/>	<input checked="" type="checkbox"/>	at 25 °C
Bulk Density	g/cm ³	approx. 0.7	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Viscosity	mPa*s	max. 100	<input type="checkbox"/>	<input checked="" type="checkbox"/>	at 25 °C in 10 % aqueous suspension
pH Value		5.0 - 7.5	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Potentiometry in 10 % aqueous suspension; (11/12)
Solubility in Water	%(w/w)	max. 1.0	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Gravimetry after filtration of a 10 % aqueous suspension at 25°C; (11/41)
Decomposition Temperature	°C	> 275	<input type="checkbox"/>	<input checked="" type="checkbox"/>	initial evolution of ammonia
Average Particle Size (D50)	µm	approx. 8	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Particle Size Distribution	%(w/w)		<input checked="" type="checkbox"/>	<input type="checkbox"/>	Air jet sieving; (11/02)
	< 24 µm	min. 97 (TD)			
	> 50 µm	max. 0.1 (DS)			
		-			
		-			
		-			

¹⁾ Delivery specification: The product is monitored on a regular basis to ensure that it adheres to the specified values. Test methods: Clariant method numbers 11/xx in brackets.

²⁾ Technical data: The technical data are used solely to describe the product and are not subject to regular monitoring.

Applications

Intumescent coatings

On account of its low water solubility, Exolit AP 423 is particularly suitable as an "acid donor" for intumescent coatings. Other essential components of intumescent systems include a binder, a carbon donor (e.g. pentaerythritol) and a blowing agent (e.g. melamine).

On exposure to flame, intumescent coatings form a carbonaceous foam which effectively shields the underlying material from temperature increases.

Steel structures coated with intumescent paints can meet the requirements of fire resistance classes specified in DIN, BS or ASTM.

The application of Exolit AP 423 based intumescent coatings on wood or plastics enables these materials to qualify for Building Material Class B (DIN EN 13501-1).

Exolit AP 423 imparts a good flame-retardant effect to adhesives and sealants when it is incorporated into the base formulation at the rate of 10 - 20 %.

Packaging and Handling

Delivery form

White powder

Packaging

Exolit AP 423 is packed in 25 kg 4-ply paper bags with polyethylene inliner. The standard supply unit is a shrink-wrapped pallet with 40 bags weighing 1000 kg net.

Storage

Minimum shelf life is 6 months from the date of shipping when stored according to the said conditions.

EcoTain®

Products that offer outstanding sustainability advantages are awarded Clariant's EcoTain® label. EcoTain® products significantly exceed sustainability market standards, have best-in-class performance and contribute overall to sustainability efforts of the company and our customers. Find out more about: [EcoTain®](#).



PEOPLE



Non hazardous, studies on life cycle data available.



PLANET

Saves lives and assets as a (halogen free) flame retardant.



Phosphorus is on the EU list of critical raw materials but recycling is possible and actively investigated.



Supports the attainability of eco-labels for customer products.



PERFORMANCE



Joint developments with customers on formulations.



Constant high quality and hydrolytic stability.

Safety

For regulatory details such as the classification and labelling as dangerous substances or goods please refer to our corresponding Material Safety Data Sheet.

Contact Us;

Please contact us for safety and regulatory details or the Material Safety Data Sheet (MSDS).

www.clariant.com



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