CLARIANT

Print this page Flame Retardants **Additives**

Exolit® AP 740

Edition Date July 25, 2013 **Edition Number**

Intumescent system based on APP for light weight composite and gel-coat applications

Product Description

Exolit AP 740 is a white free flowing powder. It is a non-halogenated additive flame retardant based on ammonium polyphosphate which develops its effectiveness through phosphorus/nitrogen synergism. Exolit AP 740 differs in its mode of action from chlorine or bromine containing flame retardants by achieving its effect through intumescence. The flame retarded material foams on exposure to flame. The carbon foam layer so formed protects the polymer through its heat-insulating effect and reduces further oxygen access.

Benefits

- Non-halogenated additive flame retardant system based on ammonium polyphosphate which develops its effectiveness through phosphorus/nitrogen synergism and intumescence
- May be used in a range of thermoset resins, especially unsaturated polyester resin, acrylic resins, epoxy or phenolics
- Suitable both for coatings and reinforced materials
- Low smoke density
- In polyester gel coats, important standards like DIN EN 13501-1 or DIN 5510 S4 SR2 ST2 can be passed
- Can be used alone or in combination with synergists like aluminium hydroxide in composites
- Very effective in methacrylate-styrene dissolved polyester resins
- Non-halogenated flame retardant with favorable environmental and health profile

Specifications

Characteristics	Unit	Target value	DS[1])	TD[2])	Test method
Phosphorus	% (w/w)	18.0 - 20.0	☑	☐	Photometry after oxidizing dissolution; (11/17)
Nitrogen	% (w/w)	21.0 - 23.0	☑	☐	Elemental analysis; (11/07)
Density	g/cm³	approx. 1.8	☐	☑	At 25 °C
Bulk Density	g/cm³	approx. 0.6	☐	☑	
Solubility in Water	% (w/w)	< 3	☐	☑	At 20 °C in 10 % suspension
Decomposition Temperature	°C	> 200	☐	☑	Initial evolution of ammonia
Average Particle Size (D50)	µm	approx. 16	☐	☑	
Particle Size Distribution	% (w/w)		☑	☐	Air jet sieving; (11/02)
	> 100 µm	max. 2.0			
		-			
		-			
		-			

[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
Exolit AP 740 may be used in a range of thermoset resins, especially unsaturated polyester resin, acrylic resins, epoxy or phenolics. It is suitable both for coatings and reinforced materials. In addition to primary effects of fire such as spread of flames and residual length, secondary effects such as smoke density and formation of toxic smoke is of interest.

Using Exolit AP 740 a low smoke density is achieved. By the addition of Exolit AP 740 in polyester gel coats important standards like DIN EN 13501-1 or DIN 5510 S4 SR2 ST2 can be passed. In composites Exolit AP 740 can be used alone or in combination with synergists like aluminium hydroxide.

Formulations and achievable flame retardant effect
Exolit AP 740 is very effective in methacrylate-styrene dissolved polyester resins.

Classifications:
UL 94 V-0 (1.6 mm): > 30 phr* Exolit AP 740
DIN 5510 S4 SR2 ST2: > 30 phr* Exolit AP 740
NF 92-501 class M1: > 50 phr* Exolit AP 740
DIN EN 13501-1: > 75 phr* Exolit AP 740

ABD 0031 Airbus Industries requirements for interior parts: Passed with 50 phr

In styrenic polyester resins Exolit AP 740 can be combined with aluminium hydroxide to reduce the overall filler content necessary to pass different flammability standards. In these systems, Exolit AP 740 is normally added at 15 – 25 parts and aluminium hydroxide at 50 – 150 parts per hundred resin.

*phr= parts per hundred resin

Packaging and Handling

Delivery form
White free flowing powder

Packaging
Exolit AP 740 is supplied in 20 kg net bags. The standard supply unit is a 1.000 kg shrink-wrapped pallet.

Storage
Minimum shelf life is 12 months from the date of shipping when stored according to the said conditions.

Safety and MSDS

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).

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