



Print this page Flame Retardants

Additives

## Exolit® OP 1230

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### Highly stable phosphinate flame retardant

#### Product Description

Exolit OP 1230 is a white, fine-grained powder based on an organic phosphinate. The product is non-hygroscopic and it is insoluble in water and organic solvents. Clariant's Exolit OP flame retardants for polyamides are all based on aluminium diethyl-phosphinate (= DEPAL). The pure substance DEPAL is sold as Exolit OP 1230 and in combination with synergists as Exolit OP 13xx types. Exolit OP 1230 is the first non-halogenated flame retardant which can withstand the demanding requirements of this high end segment of engineering plastics.

For more details see our [Innovation Spotlight video](#).

#### Benefits

- Non-hygroscopic, insoluble in water and organic solvents
- Good hydrolysis resistance
- Suited as flame retardant for thermoplastics and thermosets
- High efficiency due to its high phosphorus content
- UL 94 V-0 rating down to 0.4 mm thickness
- Suited for processing temperatures up to ~ 330 °C
- Suitable for both glass fiber reinforced and unreinforced grades
- The flame retardant polyamide compounds exhibit very good physical and excellent electrical properties
- Suitable for lead free soldering
- Good colorability
- Non-halogenated flame retardant with favorable environmental and health profile

#### Specifications

Characteristics	Unit	Target Value	DS <sup>1)</sup>	TD <sup>2)</sup>	Test Method
Phosphorus	%(w/w)	23.3 - 24.0	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Photometry after oxidizing dissolution; (11/17) or wavelength dispersive X-ray fluorescence spectrometry; (11/23)
Water / Moisture	%(w/w)	max. 0.2	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Thermogravimetry; (11/03)
Density	g/cm <sup>3</sup>	1.35	<input type="checkbox"/>	<input checked="" type="checkbox"/>	at 20 °C
Bulk Density	kg/m <sup>3</sup>	400 - 600	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Decomposition Temperature	°C	> 300	<input type="checkbox"/>	<input checked="" type="checkbox"/>	TGA
Average Particle Size (D50)	µm	20 - 40	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

<sup>1)</sup> 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.

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

#### Applications

Exolit OP 1230 is suited as flame retardant for thermoplastics and thermosets. Due to its high phosphorus content the product is distinguished by a high efficiency.

Exolit OP 1230 can even be applied in high temperature polyamides because of its high temperature stability. It is suitable for both glass fibre reinforced and unreinforced grades. The flame retardant polyamide compounds exhibit very good physical and electrical properties.

In high temperature polyamides of PA 6T/66 type, a dosage of approx. 15 % (by wt.) Exolit OP 1230 is usually sufficient to obtain the UL 94 V-0 classification for electrical compounds (at 1.6 as well as 0.8 mm thicknesses). Subject to the polymer grade, processing conditions and glass fibre reinforcement the dosage of the flame retardant may vary.

#### Processing

Before incorporating Exolit OP 1230, it is important to predry the polymer as usual. If possible, the resulting moisture content should be below 0.1 % (by wt.) for high temperature polyamides, 0.05 % (by wt.) for PBT and 0.005% for PET. Predrying of Exolit OP 1230 is not necessary. However, predrying (e. g. 4h at 120 °C) is recommended, if even very low moisture contents must be avoided.

Wear and corrosion protected materials are recommended for compounding and injection-molding of Exolit OP 1230 in reinforced polyesters, high temperature polyamides, or aromatic polyamides.

The mixing and processing methods customary in powder processing of polymers can be used with Exolit OP 1230.

The VDI Guideline 2263 "Prevention of dust fires and dust explosions" or the relevant national regulations must be observed. The optimum conditions for incorporating should be determined in each individual case. Care must be taken to ensure homogeneous dispersion of all components. The temperature of the polymer melt should not exceed 330 °C.

## Packaging and Handling

### Delivery form

White powder

### Packaging

Exolit OP 1230 is delivered in 20 kg paper bags with PE inliner or 500 kg big bags.

### Storage

For regulatory details such as the classification and labelling as dangerous substances or goods please refer to our corresponding Material Safety Data Sheet. The product should be stored in a dry place at room temperature.

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

## More Information

For more details see our [Innovation Spotlight video](#).

## 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



- Saves lives and assets as a (halogen free) flame retardant. Supports the attainability of eco-labels for customer products.



## PLANET



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



- Very efficient production process with high yield, minimized waste and low water consumption.



## PERFORMANCE



- Extensive work with customers along the value chain, optimizing material performance and evaluating life cycle aspects with stakeholders.



- Efficient at comparatively low loadings. Synergies with other halogen free flame retardants. High tracking resistance in E&E applications.

## Safety

Further safety data and handling information is available from our current Material Safety Data Sheet. For disposal in accordance with the regulations the product should be treated as special waste and taken to a suitable incineration plant.

### Contact Us;

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

[www.clariant.com](http://www.clariant.com)

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