

## Exolit™ OP 950

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### Melting phosphinate flame retardant, suitable for melt-spinning

#### Product Description

Exolit OP 950 is a white granular powder based on an organic phosphinate. The product is not hygroscopic and slightly soluble both in water and in common organic solvents. It melts at 200 °C.

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

#### Benefits

- Melts under processing temperatures above 200 °C and is miscible with molten polyesters
- High efficiency due to its high phosphorus content
- Suitable for injection moulding and fiber applications
- Minimal impact on physical properties of polyester compounds
- Suited for PET fibers with LOI > 30 %
- Not hygroscopic, slightly soluble in water and common organic solvents
- 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                                     |
|---------------------------|--------|--------------|-------------------------------------|-------------------------------------|-------------------------------------------------|
| Appearance                |        | white powder | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | visual evaluation                               |
| Phosphorus                | %(w/w) | 19.5 - 20.5  | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | Photometry after oxidizing dissolution; (11/17) |
| Water / Moisture          | %(w/w) | ≤ 0.25       | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | Thermogravimetry; (11/03)                       |
| Density                   | g/cm³  | 1.3          | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |                                                 |
| Bulk Density              | g/cm³  | appr. 600    | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | acc. to DIN 53466                               |
| Decomposition Temperature | °C     | > 350        | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | DTA/TG                                          |

<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 950 is a flame retardant for thermoplastics and synthetic fibers. Due to its high phosphorus content the product is distinguished by a high efficiency. Exolit OP 950 was developed especially for the use in polyesters. It is suitable for injection moulding and fibre applications. The flame retarded polyester compounds exhibit very good physical and electrical properties. The recommended dosage of Exolit OP 950 for PET fibers is 5-10 %. With 5% Exolit OP 950 a limit oxygen index (LOI) of 33 % can be achieved. Exolit OP 950 has to be incorporated in the PET compound before the spinning process. In PBT, a dosage of 10-15% (by wt.) Exolit OP 950 together with 10-15% nitrogen synergists like melamine polyphosphate or melamine cyanurate is usually sufficient to obtain the UL 94 V-0 classification for electrical components (at 1.6 as well as 0.8 mm thicknesses).

In PET, less flame retardant is required to pass UL 94 V-0.

Subject to the polymer grade, processing conditions and glass fibre reinforcement the dosage of the flame retardant may vary. Exolit OP 950 melts under processing temperatures above 200 °C and is miscible with the molten polyesters. Before incorporating Exolit OP 950, it is important to predry the polyester as usual. If possible, the resulting moisture content should be below 0.05% (by wt.) for PBT and 0.005% for PET. Predrying of Exolit OP 950 is not necessary. However, predrying (e.g. 4 h at 120 °C) is recommended, if even very low moisture contents must be avoided.

The mixing and processing methods customary in powder processing of polymers can be used with Exolit OP 950.

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 300 °C.

#### Packaging and Handling

**Delivery form**  
White powder

**Packaging**  
Exolit OP 950 is delivered in 25 kg paper bags with PE inliner or 750 kg big bags.

**Storage**  
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](#).

## Safety

Further safety data and handling information are 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 Safety Data Sheet (SDS).

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