PERFORMANCE PROPERTIES

NOFIA HM5000

DESCRIPTION

Nofia HM5000 is a polyphosphonate. Polyphosphonates are phosphorus-based additives suitable for flame retarding both thermoplastics (elastomers) and thermoset resins. Nofia HM5000 is soluble in a range of organic solvents and enables production of transparent flame retardant thermoset resins.

BENEFITS AND FEATURES

- Maintains transparency in final product
- Highly soluble in thermoset processing solvents
- Easy to process in thermoplastic applications
- Achieves solid flame retardant performance: UL-94 V0 rating

RESIN SYSTEMS

PBT, PET, TPEE, TPU, UPE

PRODUCT APPLICATIONS

Wire and cable, Building and construction (decorative laminates, wall panels), film, sheet and fiber
**TYPICAL PROPERTIES**

<table>
<thead>
<tr>
<th>Typical Properties</th>
<th>Nofia HM5000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Pellets, off-white</td>
</tr>
<tr>
<td>Phosphorous Content [wt%]</td>
<td>10.5</td>
</tr>
<tr>
<td>MVR (145°C/1.2kg) [ml/10 min]</td>
<td>14</td>
</tr>
<tr>
<td>Tg [°C]</td>
<td>95</td>
</tr>
<tr>
<td>Optical Characteristics</td>
<td>Transparent</td>
</tr>
<tr>
<td>Soluble in</td>
<td>MEK, DMF, Styrene, MMA</td>
</tr>
<tr>
<td>Insoluble in</td>
<td>Water, Hexane</td>
</tr>
<tr>
<td>TGA Decomposition 5wt% (air) [°C]</td>
<td>≥ 420</td>
</tr>
</tbody>
</table>

**TGA Graph of Nofia HM5000 in Air**

Nofia flame-retardants are considered non-hazardous materials when handled in accordance with standard industrial hygiene practices. Material Safety Data Sheets are available. You are encouraged to read and understand these documents before using the product.

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**DRYING CONDITIONS**

Nofia phosphonates are hygroscopic materials and quickly absorb moisture from the atmosphere. The presence of moisture will hydrolyze the polymer in the melt phase at high temperature especially > 200°C, reducing the molecular weight. Therefore, it is critical that the material is thoroughly dried prior to melt processing (<50 – 200 ppm moisture). For recommendations on drying, please refer to FRX Polymers’ Technical Bulletin "Nofia Phosphonates Drying Recommendations".

*Drying:*
- 80°C for at least 12 Hours
- Desiccant dryer with dew point -40°C
- Max Moisture Content 0.02 wt%

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**Moisture Absorption of Nofia HM5000**

![Graph showing moisture absorption of Nofia HM5000 and PET](image-url)

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**FRX Polymers, Inc.**
200 Turnpike Road
Chelmsford, MA 01824

Tel: +1 (978) 250-4200 • Fax: +1 (978) 250-4533
Email: info@frxpolymers.com
www.frxpolymers.com

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