

ForTii® T11

DSM Engineering Plastics - Polyphthalamide

Tuesday, January 21, 2020

General Information

Product Description

30% Glass Reinforced, PA4T, Flame Retardant, Halogen free and free of red phosphorous

General

| | | | |
|------------------------|--|-----------------------------|------------------------------------|
| Material Status | • Commercial: Active | | |
| Availability | • Africa & Middle East • Asia Pacific | • Europe • Latin America | • North America |
| Filler / Reinforcement | • Glass Fiber, 30% Filler by Weight | | |
| Additive | • Flame Retardant | | |
| Features | • Flame Retardant | • Halogen Free | • Low (to None) Phosphorus Content |
| Processing Method | • Injection Molding | | |
| Resin ID (ISO 1043) | • PPA-GF30 FR(40) | | |

ASTM & ISO Properties ¹

| Physical | Dry | Conditioned | Unit | Test Method |
|----------------------------------|--------|-------------|-------------------|-------------|
| Density | 1.46 | -- | g/cm ³ | ISO 1183 |
| Molding Shrinkage | | | | ISO 294-4 |
| Across Flow | 1.2 | -- | % | |
| Flow | 0.30 | -- | % | |
| Water Absorption | | | | ISO 62 |
| Equilibrium, 23°C, 50% RH | 1.5 | -- | % | |
| Mechanical | Dry | Conditioned | Unit | Test Method |
| Tensile Modulus | 12000 | -- | MPa | ISO 527-2 |
| Tensile Stress (Break) | 160 | -- | MPa | ISO 527-2 |
| Tensile Strain (Break) | 2.1 | -- | % | ISO 527-2 |
| Flexural Modulus | 11500 | -- | MPa | ISO 178 |
| Flexural Stress | 255 | -- | MPa | ISO 178 |
| Impact | Dry | Conditioned | Unit | Test Method |
| Charpy Notched Impact Strength | | | | ISO 179/1eA |
| 23°C | 10 | -- | kJ/m ² | |
| Charpy Unnotched Impact Strength | | | | ISO 179/1eU |
| 23°C | 60 | -- | kJ/m ² | |
| Thermal | Dry | Conditioned | Unit | Test Method |
| Heat Deflection Temperature | | | | ISO 75-2/A |
| 1.8 MPa, Unannealed | 305 | -- | °C | |
| Melting Temperature ² | 325 | -- | °C | ISO 11357-3 |
| CLTE - Flow | 3.0E-5 | -- | cm/cm/°C | ASTM D696 |
| CLTE - Flow | 2.0E-5 | -- | cm/cm/°C | ISO 11359-2 |
| CLTE - Transverse | 3.5E-5 | -- | cm/cm/°C | ASTM D696 |
| CLTE - Transverse | 6.5E-5 | -- | cm/cm/°C | ISO 11359-2 |
| RTI Elec (0.35 mm) | 140 | -- | °C | UL 746 |

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| Electrical | Dry | Conditioned | Unit | Test Method |
|-----------------------------|-----------|-------------|---------|-------------------------|
| Volume Resistivity | > 1.0E+15 | -- | ohms-cm | IEC 60093 |
| Electric Strength | 33 | 33 | kV/mm | IEC 60243-1 |
| Relative Permittivity | | | | IEC 60250 |
| 100 Hz | 4.20 | 4.20 | | |
| 1 MHz | 3.90 | 3.90 | | |
| 1.00 GHz | 3.90 | 3.90 | | |
| Comparative Tracking Index | 600 | -- | V | IEC 60112 |
| Flammability | Dry | Conditioned | Unit | Test Method |
| Flammability Classification | | | | IEC 60695-11-10, -20 |
| 0.200 mm | V-0 | -- | | |
| 1.5 mm | V-0 | -- | | |

Notes

¹ Typical properties: these are not to be construed as specifications.

² 10°C/min