Product Information

INVISTA U4800 PA66 Resin

Product Description

INVISTA U4800 is a general purpose, natural PA66 resin suitable for compounding, injection molding, and extrusion applications where ease of processing, excellent color, and physical property retention are desired.

| RV in formic acid, nominal48-ASTM D789VN at 0.5% in sulfuric acid, nominal150mL/gISO 307RV at 1% in sulfuric acid, nominal2.7Density1.14g/cm³ISO 1183Mold shrinkage, 2.0 mm, parallel1.5%ISO 294.4Mold shrinkage, 2.0 mm, transverse1.8%ISO 294.4Vater absorption - 24 hours1.8%ISO 62Vater absorption - 24 hours1.8%ISO 62Vater absorption - equilibrium @ 50% RH2.6%ISO 527Elongation at yield4.2%ISO 527Elongation at yield4.2%ISO 527Fensile strength at yield3100MPaISO 527Fensile modulus3100MPaISO 178Fexural modulus2900MPaISO 178Fexural strength94MPaISO 179Notched Charpy at 23°CNBK/m²ISO 179Notched Charpy at 23°CNBK/m²ISO 179Notched Izod at 23°CNBK/m²ISO 179Notched Izod at 23°CNBK/m²ISO 180Notched Izod at 23°CNBK/m²ISO 1357Notched Izod at 23°CNBK/m²ISO 1357NDT at 0.45 MPa200°CISO 1357HDT at 0.45 MPa200°CISO 1357HDT at 0.45 MPa200°CISO 75HDT at 1.80 MPa72°CISO 75HDT at 1.80 MPa72°C | | Properties (dry) | Value | Units | Method |
|--|-----------|---|-------|-----------------------|-----------|
| RV at 1% in sulfuric acid, nominal2.7-Density1.14g/cm3ISO 1183Mold shrinkage, 2.0 mm, parallel1.5%ISO 294.4Mold shrinkage, 2.0 mm, transverse1.8%ISO 294.4Water absorption - 24 hours1.8%ISO 62Water absorption - equilibrium @ 50% RH2.6%ISO 527Elongation at yield82MPaISO 527Elongation at yield4.2%ISO 527Elongation at break40%ISO 527Flexural modulus3100MPaISO 527Flexural modulus2900MPaISO 178Flexural strength94MPaISO 178Notched Charpy at 23°CNBKJ/m2ISO 179Unnotched Charpy at -30°CNBKJ/m2ISO 179Notched Izod at 23°CNBKJ/m2ISO 179Notched Izod at 23°CNBKJ/m2ISO 179IDT at 0.45 MPa200°CISO 1357HDT at 1.80 MPa72°CISO 1357 | Viscosity | RV in formic acid, nominal | 48 | _ | ASTM D789 |
| Provide Mold shrinkage, 2.0 mm, parallel1.5%150 294-4Mold shrinkage, 2.0 mm, transverse1.8%150 294-4Water absorption - 24 hours1.8%150 62Water absorption - equilibrium @ 50% RH2.6%150 62Water absorption - equilibrium @ 50% RH2.6%150 527Elongation at yield4.2%150 527Elongation at break40%150 527Flexural modulus3100MPa150 527Flexural modulus2900MPa150 178Flexural strength94MPa150 178Notched Charpy at 23°C5.4kJ/m²150 179Unnotched Charpy at -30°CNBkJ/m²150 179Unnotched Charpy at -30°CNBkJ/m²150 180Melting temperature, 10°C/min261°C150 11357HDT at 0.45 MPa200°C150 75HDT at 1.80 MPa72°C150 75 | | VN at 0.5% in sulfuric acid, nominal | 150 | mL/g | ISO 307 |
| Provide Mold shrinkage, 2.0 mm, parallel1.5%150 294-4Mold shrinkage, 2.0 mm, transverse1.8%150 294-4Water absorption - 24 hours1.8%150 62Water absorption - equilibrium @ 50% RH2.6%150 62Water absorption - equilibrium @ 50% RH2.6%150 527Elongation at yield4.2%150 527Elongation at break40%150 527Flexural modulus3100MPa150 527Flexural modulus2900MPa150 178Flexural strength94MPa150 178Notched Charpy at 23°C5.4kJ/m²150 179Unnotched Charpy at -30°CNBkJ/m²150 179Unnotched Charpy at -30°CNBkJ/m²150 180Melting temperature, 10°C/min261°C150 11357HDT at 0.45 MPa200°C150 75HDT at 1.80 MPa72°C150 75 | | RV at 1% in sulfuric acid, nominal | 2.7 | - | _ |
| Mold shrinkage, 2.0 mm, transverse1.8%ISO 294-4Water absorption - 24 hours1.8%ISO 62Water absorption - equilibrium @ 50% RH2.6%ISO 527Tensile strength at yield82MPaISO 527Elongation at yield4.2%ISO 527Elongation at break40%ISO 527Tensile modulus3100MPaISO 527Flexural modulus2900MPaISO 178Flexural strength94MPaISO 178Notched Charpy at 23°C5.4kJ/m²ISO 179Unnotched Charpy at -30°C4.2kJ/m²ISO 179Notched Izod at 23°CNBkJ/m²ISO 180Melting temperature, 10°C/min261°CISO 11357HDT at 0.45 MPa200°CISO 75HDT at 1.80 MPa72°CISO 75 | | Density | 1.14 | g/cm ³ | ISO 1183 |
| Vater absorption - equilibrium @ 50% RH2.6%ISO 62Tensile strength at yield82MPaISO 527Elongation at yield4.2%ISO 527Elongation at break40%ISO 527Tensile modulus3100MPaISO 527Flexural modulus2900MPaISO 178Flexural strength94MPaISO 178Notched Charpy at 23°C5.4KJ/m2ISO 179Notched Charpy at -30°C4.2KJ/m2ISO 179Unnotched Charpy at -30°CNBKJ/m2ISO 179Notched Izod at 23°CNBKJ/m2ISO 179Notched Izod at 23°C4.7KJ/m2ISO 179Notched Izod at 23°C4.7KJ/m2ISO 1357Motting temperature, 10°C/min261°CISO 11357HDT at 0.45 MPa200°CISO 75HDT at 1.80 MPa72°CISO 75 | | Mold shrinkage, 2.0 mm, parallel | 1.5 | % | ISO 294-4 |
| Vater absorption - equilibrium @ 50% RH2.6%ISO 62Tensile strength at yield82MPaISO 527Elongation at yield4.2%ISO 527Elongation at break40%ISO 527Tensile modulus3100MPaISO 527Flexural modulus2900MPaISO 178Flexural strength94MPaISO 178Notched Charpy at 23°C5.4KJ/m2ISO 179Notched Charpy at -30°C4.2KJ/m2ISO 179Unnotched Charpy at -30°CNBKJ/m2ISO 179Notched Izod at 23°CNBKJ/m2ISO 179Notched Izod at 23°C4.7KJ/m2ISO 179Notched Izod at 23°C4.7KJ/m2ISO 1357Motting temperature, 10°C/min261°CISO 11357HDT at 0.45 MPa200°CISO 75HDT at 1.80 MPa72°CISO 75 | sical | Mold shrinkage, 2.0 mm, transverse | 1.8 | % | ISO 294-4 |
| Tensile strength at yield82MPaISO 527Elongation at yield4.2%ISO 527Elongation at break40%ISO 527Tensile modulus3100MPaISO 527Flexural modulus2900MPaISO 178Flexural strength94MPaISO 178Notched Charpy at 23°C5.4kJ/m²ISO 179Unnotched Charpy at -30°C4.2kJ/m²ISO 179Unnotched Charpy at -30°CNBkJ/m²ISO 179IDT at 0.45 MPa200°CISO 11357HDT at 1.80 MPa72°CISO 75 | Phys | Water absorption - 24 hours | 1.8 | % | ISO 62 |
| Floration at yield4.2%ISO 527Elongation at break40%ISO 527Tensile modulus3100MPaISO 527Flexural modulus2900MPaISO 178Flexural strength94MPaISO 178Notched Charpy at 23°C5.4kJ/m²ISO 179Unnotched Charpy at 23°CNBkJ/m²ISO 179Unnotched Charpy at 30°CNBkJ/m²ISO 179Unnotched Izod at 23°C0CISO 1357HDT at 0.45 MPa200°CISO 75HDT at 1.80 MPa72°CISO 75 | | Water absorption - equilibrium @ 50% RH | 2.6 | % | ISO 62 |
| Floringation at break 40 % ISO 527 Tensile modulus 3100 MPa ISO 527 Flexural modulus 2900 MPa ISO 178 Flexural strength 94 MPa ISO 178 Notched Charpy at 23°C 5.4 kJ/m² ISO 179 Notched Charpy at -30°C 4.2 kJ/m² ISO 179 Unnotched Charpy at -30°C NB kJ/m² ISO 179 Unnotched Charpy at -30°C NB kJ/m² ISO 179 Vinotched Izod at 23°C 4.7 kJ/m² ISO 180 Melting temperature, 10°C/min 261 °C ISO 11357 HDT at 1.80 MPa 72 °C ISO 75 | | Tensile strength at yield | 82 | MPa | ISO 527 |
| Tensile modulus3100MPaISO 527Flexural modulus2900MPaISO 178Flexural strength94MPaISO 178Notched Charpy at 23°C5.4kJ/m²ISO 179Notched Charpy at -30°C4.2kJ/m²ISO 179Unnotched Charpy at 23°CNBkJ/m²ISO 179Unnotched Charpy at 23°CNBkJ/m²ISO 179Unnotched Charpy at 23°CNBkJ/m²ISO 179Unnotched Charpy at 23°CNBkJ/m²ISO 179Unnotched Charpy at -30°CNBkJ/m²ISO 179IDT at 1.80 MPa200°CISO 11357HDT at 1.80 MPa72°CISO 75 | | Elongation at yield | 4.2 | % | ISO 527 |
| Flexural modulus2900MPaISO 178Flexural strength94MPaISO 178Notched Charpy at 23°C5.4KJ/m²ISO 179Notched Charpy at -30°C4.2KJ/m²ISO 179Unnotched Charpy at 23°CNBKJ/m²ISO 179Unnotched Charpy at 23°CNBKJ/m²ISO 179Notched Izod at 23°CNBKJ/m²ISO 179Notched Izod at 23°C4.7KJ/m²ISO 180Melting temperature, 10°C/min261°CISO 11357HDT at 0.45 MPa200°CISO 75HDT at 1.80 MPa72°CISO 75 | | Elongation at break | 40 | % | ISO 527 |
| Notched Charpy at -30°C4.2kJ/m²ISO 179Unnotched Charpy at 23°CNBkJ/m²ISO 179Unnotched Charpy at -30°CNBkJ/m²ISO 179Notched Izod at 23°C4.7kJ/m²ISO 180Melting temperature, 10°C/min261°CISO 11357HDT at 0.45 MPa200°CISO 75HDT at 1.80 MPa72°CISO 75 | | Tensile modulus | 3100 | MPa | ISO 527 |
| Notched Charpy at -30°C4.2kJ/m²ISO 179Unnotched Charpy at 23°CNBkJ/m²ISO 179Unnotched Charpy at -30°CNBkJ/m²ISO 179Notched Izod at 23°C4.7kJ/m²ISO 180Melting temperature, 10°C/min261°CISO 11357HDT at 0.45 MPa200°CISO 75HDT at 1.80 MPa72°CISO 75 | ical | Flexural modulus | 2900 | MPa | ISO 178 |
| Notched Charpy at -30°C4.2kJ/m²ISO 179Unnotched Charpy at 23°CNBkJ/m²ISO 179Unnotched Charpy at -30°CNBkJ/m²ISO 179Notched Izod at 23°C4.7kJ/m²ISO 180Melting temperature, 10°C/min261°CISO 11357HDT at 0.45 MPa200°CISO 75HDT at 1.80 MPa72°CISO 75 | chan | Flexural strength | 94 | MPa | ISO 178 |
| Vint of the second se | Med | Notched Charpy at 23°C | 5.4 | kJ/m² | ISO 179 |
| Unnotched Charpy at -30°CNBkJ/m²ISO 179Notched Izod at 23°C4.7kJ/m²ISO 180Melting temperature, 10°C/min261°CISO 11357HDT at 0.45 MPa200°CISO 75HDT at 1.80 MPa72°CISO 75 | | Notched Charpy at -30°C | 4.2 | kJ/m² | ISO 179 |
| Notched Izod at 23°C4.7kJ/m²ISO 180Melting temperature, 10°C/min261°CISO 11357HDT at 0.45 MPa200°CISO 75HDT at 1.80 MPa72°CISO 75 | | Unnotched Charpy at 23°C | NB | kJ/m² | ISO 179 |
| Melting temperature, 10°C/min 261 °C ISO 11357 HDT at 0.45 MPa 200 °C ISO 75 HDT at 1.80 MPa 72 °C ISO 75 | | Unnotched Charpy at -30°C | NB | kJ/m² | ISO 179 |
| HDT at 0.45 MPa 200 °C ISO 75 HDT at 1.80 MPa 72 °C ISO 75 | | Notched Izod at 23°C | 4.7 | kJ/m² | ISO 180 |
| HDT at 1.80 MPa 72 °C ISO 75 | Thermal | Melting temperature, 10°C/min | 261 | °C | ISO 11357 |
| HDT at 1.80 MPa 72 °C ISO 75 CLTE, 2.0 mm, Parallel, 23 - 55°C 0.9 10-4/°C ISO 11359 | | HDT at 0.45 MPa | 200 | °C | ISO 75 |
| E CLTE, 2.0 mm, Parallel, 23 - 55°C 0.9 10-4/°C ISO 11359 | | HDT at 1.80 MPa | 72 | °C | ISO 75 |
| | | CLTE, 2.0 mm, Parallel, 23 - 55°C | 0.9 | 10 ⁻⁴ / °C | ISO 11359 |
| CLTE, 2.0 mm, Transverse, 23 – 55°C 1.1 10-4/ °C ISO 11359 | | CLTE, 2.0 mm, Transverse, 23 – 55°C | 1.1 | 10 ⁻⁴ / °C | ISO 11359 |



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| | Properties (dry) | Value | Units | Method |
|--------------|--|-------|--------|-----------|
| Electrical | Surface Resistivity | 2E+14 | ohms | IEC 60093 |
| | Volume Resistivity, 2.0 mm | 4E+14 | ohm-cm | IEC 60093 |
| | Dielectric Strength, 1.0 mm | 32 | kV/mm | IEC 60243 |
| Flammability | Flammability Classification at 0.71 mm | V-2 | - | UL 94 |
| | Flammability Classification at 0.71 mm | V-2 | - | UL 94 |
| | Flammability Classification at 0.71 mm | V-2 | - | UL 94 |
| | Glow-Wire Flammability at 0.71 mm | 960 | °C | IEC 60695 |
| | Glow-Wire Flammability at 0.71 mm | 960 | °C | IEC 60695 |
| | Glow-Wire Flammability at 0.71 mm | 960 | °C | IEC 60695 |
| | Glow-Wire Flammability at 0.71 mm | 960 | °C | IEC 60695 |
| | Glow-Wire Flammability at 0.71 mm | 960 | °C | IEC 60695 |
| | Glow-Wire Flammability at 0.71 mm | 960 | °C | IEC 60695 |

General Information

Material Status

Commercial: Active

Availability

- North America
- South America
- Europe
- Asia

Features

- Lowe moisture
- Excellent whiteness

RoHS

No intentional additives or ingredients used in U4800 are among those in European directive 2011/65/EC (RoHS), as amended.

| Process Guidelines for Molding | | | | |
|--------------------------------|-----------------|--|--|--|
| Drying temperature | 80°C | | | |
| Drying time* | 3 - 4 hrs | | | |
| Barrel temperatures | | | | |
| Rear | 250 - 280°C | | | |
| Middle | 275 - 290°C | | | |
| Front | 275 - 290°C | | | |
| Nozzle | 275 - 290°C | | | |
| Processing temperature (melt) | 280 - 295°C | | | |
| Mold temperature | 50 - 90°C | | | |
| Back pressure** | 2-10 bar | | | |
| Vent depth | 0.007 - 0.04 mm | | | |
| Cushion (range) | 4 – 6 mm | | | |
| Suggested moisture (max) | 0.20 wt% | | | |
| Suggested moister (min) | 0.10 wt% | | | |
| Screw Speed | 75 - 180 rpm | | | |

* Initial moisture below 0.25 wt%. Use dehumidified air.

** Melt pressure

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