KetaSpire® KT-880
polyetheretherketone

KetaSpire® KT-880 is a high flow grade of unreinforced polyetheretherketone (PEEK) supplied in pellet form. KetaSpire® PEEK is produced to the highest industry standards and is characterized by a distinct combination of properties, which include excellent wear resistance, best-in-class fatigue resistance, ease of melt processing, high purity and excellent chemical resistance to organics, acids and bases.

These properties make it well-suited for applications in healthcare, transportation, electronics, chemical processing and other industrial uses. KetaSpire® KT-880 NT can be easily processed using typical injection molding processes.

This resin is also available as KT-880P in a natural-color coarse powder form for compounding.

Pellets of KT-880 are supplied lightly dusted with the lubricant calcium stearate (0.01% level) to aid with pellet conveyance in plastication screws. The equivalent un lubricated natural color grade of high flow KetaSpire® is available as KT-880 NL.

### General

<table>
<thead>
<tr>
<th>Material Status</th>
<th>Commercial: Active</th>
</tr>
</thead>
<tbody>
<tr>
<td>Availability</td>
<td>Africa &amp; Middle East, Asia Pacific, Europe, Latin America, North America</td>
</tr>
</tbody>
</table>

### Features

- Autoclave Sterilizable
- Biocompatible
- Ductile
- E-beam Sterilizable
- Ethylene Oxide Sterilizable
- Fatigue Resistant
- Flame Retardant
- Good Chemical Resistance
- Good Dimensional Stability
- Good Impact Resistance
- Good Sterilizability
- Heat Sterilizable
- High Flow
- High Heat Resistance
- Radiation (Gamma) Resistant
- Radiation Sterilizable
- Radiotranslucent
- Steam Resistant
- Steam Sterilizable

### Uses

- Aircraft Applications
- Connectors
- Dental Applications
- Electrical/Electronic Applications
- Film
- Hospital Goods
- Industrial Applications
- Medical Devices
- Medical/Healthcare Applications
- Oil/Gas Applications
- Pump Parts
- Seals
- Surgical Instruments

### Agency Ratings

- ISO 10993
- ISO 10993-Part 1

### RoHS Compliance

- RoHS Compliant

### Appearance

- Black
- Natural Color

### Forms

- Pellets

### Processing Method

- Extrusion Blow Molding
- Fiber (Spinning) Extrusion
- Film Extrusion
- Injection Molding
- Machining
- Profile Extrusion
- Thermoforming
- Wire & Cable Extrusion

### Physical

<table>
<thead>
<tr>
<th>Property</th>
<th>Typical Value</th>
<th>Unit</th>
<th>Test method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specific Gravity</td>
<td>1.30</td>
<td></td>
<td>ASTM D792</td>
</tr>
<tr>
<td>Melt Mass-Flow Rate (MFR)</td>
<td>36</td>
<td>g/10 min</td>
<td>ASTM D1238</td>
</tr>
<tr>
<td>Molding Shrinkage</td>
<td></td>
<td></td>
<td>ASTM D955</td>
</tr>
<tr>
<td>Flow</td>
<td>0.318 mm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Across Flow</td>
<td>3.18 mm</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1.4 to 1.6 %</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1.5 to 1.7 %</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Physical Properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Typical Value</th>
<th>Unit</th>
<th>Test method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water Absorption (24 hr)</td>
<td>0.10</td>
<td>%</td>
<td>ASTM D570</td>
</tr>
</tbody>
</table>

### Mechanical Properties

#### Tensile Modulus

- -- 3    3700 MPa  ASTM D638
- -- 4     4000 MPa  ISO 527-2/1A/1

#### Tensile Stress

- Yield    102 MPa  ISO 527-2/1A/50
- Yield    100 MPa  ASTM D638

#### Tensile Elongation

- Yield 5   5.2 %   ASTM D638
- Yield     5.0 %   ISO 527-2/1A/50
- Break 5   10 to 20 %  ASTM D638
- Break     10 to 20 %  ISO 527-2/1A/50

#### Flexural Modulus

- -- 3     3800 MPa  ASTM D790
- -- 4     3900 MPa  ISO 178

#### Flexural Strength

- -- 3     153 MPa  ASTM D790
- -- 4     134 MPa  ISO 178

#### Compressive Strength

- 123 MPa  ASTM D695

#### Shear Strength

- 95.1 MPa  ASTM D732

#### Poisson’s Ratio

- 0.37  ASTM E132

### Impact Properties

#### Notched Izod Impact

- -- 3     53 J/m  ASTM D256
- -- 4     4.9 kJ/m²  ISO 180

#### Unnotched Izod Impact

- No Break  ASTM D4812  ISO 180

### Hardness

#### Rockwell Hardness (M-Scale)

- 102  ASTM D785

### Thermal Properties

#### Deflection Temperature Under Load

- 1.8 MPa, Annealed  160 °C  ASTM D648

#### Glass Transition Temperature

- 147 °C  ASTM D3418

#### Peak Melting Temperature

- 343 °C  ASTM D3418

#### CLTE - Flow (-50 to 50°C)

- 5.0E-5 cm/cm/°C  ASTM E831

#### Specific Heat

- 50°C  1330 J/kg/°C
- 200°C  1930 J/kg/°C

#### Thermal Conductivity

- 0.25 W/m/K  ASTM E1530

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Revised: 2/13/2015

Solvay Specialty Polymers
<table>
<thead>
<tr>
<th>Property</th>
<th>Typical Value</th>
<th>Unit</th>
<th>Test method</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Electrical</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Surface Resistivity</td>
<td>&gt; 1.9E+17</td>
<td>ohms</td>
<td>ASTM D257</td>
</tr>
<tr>
<td>Volume Resistivity</td>
<td>3.8E+17</td>
<td>ohms·cm</td>
<td>ASTM D257</td>
</tr>
<tr>
<td>Dielectric Strength (3.00 mm)</td>
<td>15</td>
<td>kV/mm</td>
<td>ASTM D149</td>
</tr>
<tr>
<td>Dielectric Constant</td>
<td></td>
<td></td>
<td>ASTM D150</td>
</tr>
<tr>
<td>60 Hz</td>
<td>3.10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 kHz</td>
<td>3.01</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 MHz</td>
<td>3.07</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dissipation Factor</td>
<td></td>
<td></td>
<td>ASTM D150</td>
</tr>
<tr>
<td>60 Hz</td>
<td>1.0E-3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 kHz</td>
<td>1.0E-3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 MHz</td>
<td>3.0E-3</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Flammability</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flame Rating (&gt; 3.00 mm, Natural)</td>
<td>V-0</td>
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<td>UL 94</td>
</tr>
<tr>
<td><strong>Fill Analysis</strong></td>
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<td></td>
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</tr>
<tr>
<td>Melt Viscosity (400°C, 1000 sec^-1)</td>
<td>150</td>
<td>Pa·s</td>
<td>ASTM D3835</td>
</tr>
<tr>
<td><strong>Injection</strong></td>
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</tr>
<tr>
<td>Drying Temperature</td>
<td>150</td>
<td>°C</td>
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</tr>
<tr>
<td>Drying Time</td>
<td>4.0</td>
<td>hr</td>
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<tr>
<td>Rear Temperature</td>
<td>355</td>
<td>°C</td>
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</tr>
<tr>
<td>Middle Temperature</td>
<td>365</td>
<td>°C</td>
<td></td>
</tr>
<tr>
<td>Front Temperature</td>
<td>370</td>
<td>°C</td>
<td></td>
</tr>
<tr>
<td>Nozzle Temperature</td>
<td>375</td>
<td>°C</td>
<td></td>
</tr>
<tr>
<td>Mold Temperature</td>
<td>175 to 205</td>
<td>°C</td>
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</tr>
<tr>
<td>Injection Rate</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Screw Compression Ratio</td>
<td>2.5:1.0 to 3.5:1.0</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**Isothermal Stress vs. Strain (ISO 11403-1)**

- **Stress (MPa)**: 0, 10, 20, 30, 40, 50, 60, 70, 80, 90, 100, 110
- **Strain (mm/mm)**: 23°C, 100°C, 150°C, 200°C

**Viscosity vs. Shear Rate (ISO 11403-2)**

- **Viscosity (Pa·s)**: 10, 100, 1000, 10000, 100000
- **Shear Rate (sec⁻¹)**: 370°C, 385°C, 400°C
Notes
Typical properties: these are not to be construed as specifications.

1 Pellets are supplied lightly dusted with the lubricant calcium stearate (0.01% level). For non-lubricated, natural color grade, order KT-880 NL.
2 5" x 0.5" x 0.125"
3 1.0 mm/min
4 51 mm/min
5 50 mm/min