



Tenac® 5010

Asahi Kasei Corporation - Acetal (POM) Homopolymer

Tuesday, July 15, 2008

General Information

General

| | | | |
|-------------------|---|--|----------|
| Material Status | • Commercial: Active | | |
| Availability | • Africa & Middle East | • Asia Pacific | • Europe |
| Features | • General Purpose • Good Flow | • Homopolymer • Medium Viscosity | |
| Uses | • Electrical/Electronic Applications • General Purpose | • Household Goods • Industrial Applications | |
| Forms | • Pellets | | |
| Processing Method | • Extrusion | • Injection Molding | |

ASTM and ISO Properties ¹

| Physical | Nominal Value (English) | Nominal Value (SI) | Test Method |
|---|----------------------------|------------------------|---------------|
| Specific Gravity | 1.42 | 1.42 | ASTM D792 |
| Density | 1.42 g/cm ³ | 1.42 g/cm ³ | ISO 1183 |
| Melt Mass-Flow Rate (MFR) | 22 g/10 min | 22 g/10 min | ASTM D1238 |
| Melt Mass-Flow Rate (MFR) (190°C/2.16 kg) | 22 g/10 min | 22 g/10 min | ISO 1133 |
| Molding Shrinkage (Flow) | 0.018 to 0.022 in/in | 1.8 to 2.2 % | ASTM D955 |
| Molding Shrinkage | | | ISO 294-4 |
| Across Flow | 1.8 to 2.2 % | 1.8 to 2.2 % | |
| Flow | 1.8 to 2.2 % | 1.8 to 2.2 % | |
| Water Absorption (24 hr) | 0.20 % | 0.20 % | ASTM D570 |
| Mechanical | Nominal Value (English) | Nominal Value (SI) | Test Method |
| Tensile Modulus | 493000 psi | 3400 MPa | ISO 527-1, -2 |
| Tensile Strength | 10000 psi | 69.0 MPa | ASTM D638 |
| Tensile Stress (Yield) | 10600 psi | 73.0 MPa | ISO 527-1, -2 |
| Tensile Elongation (Break) | 45 % | 45 % | ASTM D638 |
| Tensile Strain (Break) | 35 % | 35 % | ISO 527-1, -2 |
| Flexural Modulus | 441000 psi | 3040 MPa | ASTM D790 |
| Flexural Strength | 14900 psi | 103 MPa | ASTM D790 |
| Taber Abrasion Resistance (1000 Cycles) | 13.0 mg | 13.0 mg | ASTM D1044 |
| Impact | Nominal Value (English) | Nominal Value (SI) | Test Method |
| Charpy Notched Impact Strength | | | ISO 179/1eA |
| 73 °F (23 °C) | 3.81 ft-lb/in ² | 8.00 kJ/m ² | |
| Notched Izod Impact | 1.29 ft-lb/in | 69.0 J/m | ASTM D256 |
| Hardness | Nominal Value (English) | Nominal Value (SI) | Test Method |
| Rockwell Hardness | | | ASTM D785 |
| M-Scale | 94 | 94 | |
| R-Scale | 120 | 120 | |

Tenac® 5010
Asahi Kasei Corporation - Acetal (POM) Homopolymer

| Thermal | Nominal Value (English) | Nominal Value (SI) | Test Method |
|--|-------------------------|--------------------|---------------|
| Deflection Temperature Under Load 66 psi (0.45 MPa), Unannealed | 342 °F | 172 °C | ASTM D648 |
| Heat Deflection Temperature 66 psi (0.45 MPa), Unannealed | 329 °F | 165 °C | ISO 75B-1, -2 |
| Deflection Temperature Under Load 264 psi (1.8 MPa), Unannealed | 277 °F | 136 °C | ASTM D648 |
| Heat Deflection Temperature 264 psi (1.8 MPa), Unannealed | 212 °F | 100 °C | ISO 75A-1, -2 |
| CLTE, Flow (TMA) | 0.000056 in/in/°F | 0.00010 cm/cm/°C | ASTM E831 |
| Flammability | Nominal Value (English) | Nominal Value (SI) | Test Method |
| Flame Rating - UL | HB | HB | UL 94 |

Additional Properties

The values listed as Mold Shrinkage, were tested in accordance with Asahi Kasei method.

| Processing Information | | | |
|------------------------|-------------------------|--------------------|--|
| Injection | Nominal Value (English) | Nominal Value (SI) | |
| Drying Temperature | 176 to 194 °F | 80.0 to 90.0 °C | |
| Drying Time | 3.0 to 4.0 hr | 3.0 to 4.0 hr | |
| Processing (Melt) Temp | 374 to 410 °F | 190 to 210 °C | |
| Mold Temperature | 122 °F | 50.0 °C | |
| Extrusion | Nominal Value (English) | Nominal Value (SI) | |
| Cylinder Zone 1 Temp. | 374 °F | 190 °C | |
| Cylinder Zone 2 Temp. | 392 °F | 200 °C | |
| Cylinder Zone 3 Temp. | 410 °F | 210 °C | |
| Melt Temperature | 374 to 410 °F | 190 to 210 °C | |

Notes

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