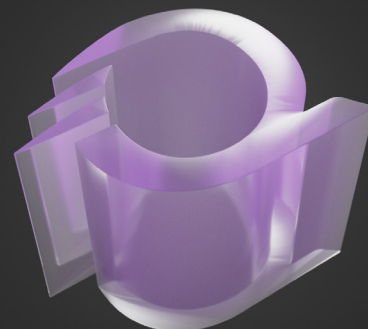




Makrolon Rx1805

MVR (300°C/1.2 kg) 6.0 cm³/10 min; medical devices; high lipid resistance; suitable for sterilization with high-energy radiation; biocompatible according to many ISO 10993-1 test requirements; high viscosity; injection molding - melt temperature 280 - 320°C; transparent parts for medical devices

Physical Properties

MEASUREMENT	CONDITION	Value
Density (73°F)	ISO 1183	1.20 g/cm ³
Apparent (Bulk) Density ²	ISO 60	0.66 g/cm ³
Melt Mass-Flow Rate (MFR) (300°C/1.2 kg)	ISO 1133	6.5 g/10 min
Melt Volume-Flow Rate (MVR) (300°C/1.2 kg)	ISO 1133	6.0 cm ³ /10min
Molding Shrinkage		
Across Flow	ISO 2577	0.60 to 0.80%
Flow	ISO 2577	0.60 to 0.80%
Across Flow : 536°F, 0.0787 in ³	ISO 294-4	0.70%
Flow 0.0787 in ³	ISO 294-4	0.70%
Water Absorption		
Saturation, 73°F	ISO 62	0.30%
Equilibrium, 73°F, 50% RH		0.12%

Features

- Biocompatible
- High Viscosity
- Radiation Sterilizable

Applications

- Medical Devices
- Medical/Healthcare Applications

Processing Method

- Injection Molding

Hardness Properties

MEASUREMENT	CONDITION	Value
Ball Indentation Hardness	ISO 2039-1	16500 psi

Mechanical Properties

MEASUREMENT	CONDITION	Value
Tensile Modulus (73°F)	ISO 527-1/1	348000 psi
Tensile Stress		
Yield, 73°F	ISO 527-2/50	9720 psi
Break, 73°F		10900 psi

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Makrolon Rx1805

Mechanical Properties (continued)

MEASUREMENT	CONDITION	Value
Tensile Strain Yield, 73°F Break, 73°F	ISO 527-2/50	6.3% 130%
Nominal Tensile Strain at Break (73°F)	ISO 527-2/50	> 50%
Flexural Modulus ⁴ (73°F)	ISO 178	348000 psi
Flexural Stress ⁴ 73°F 3.5% Strain, 73°F	ISO 178	14200 psi 10600 psi
Flexural Strain at Flexural Strength ⁵ (73°F)	ISO 178	7.1%

Impact Properties

MEASUREMENT	CONDITION	Value
Charpy Notched Impact Strength ⁶ -22°F, Complete Break 73°F, Partial Break	ISO 179/1eA	7.6ft-lb/in ² 38ft-lb/in ²
Charpy Unnotched Impact Strength -76°F -22°F 73°F	ISO 179/1eU	No Break No Break No Break
Notched Izod Impact Strength ⁶ -22°F, Complete Break 73°F, Partial Break	ISO 180/A	7.1ft-lb/in ² 33ft-lb/in ²
Multi-Axial Instrumented Impact Energy -22°F 73°F	ISO 6603-2	51.6ft-lb 47.9ft-lb
Multi-Axial Instrumented Impact Peak Force -22°F 73°F	ISO 6603-2	1480lbf 1280lbf

Thermal Properties

MEASUREMENT	CONDITION	Value
Deflection Temperature Under Load 66 psi, Unannealed 264 psi, Unannealed	ISO 75-2/B ISO 75-2/A	280°F 259°F

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Quickparts

North America
+1 931 766 7290

United Kingdom
+44 (0) 1494 479 690

Germany
+49 (0) 6073 689 6000

France
+33 (0) 2 43 51 20 30

Italy
+39 0121 390310

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Makrolon Rx1805

Thermal Properties (continued)

MEASUREMENT	CONDITION	Value
Glass Transition Temperature ⁷	ISO 11357-2	293°F
Vicat Softening Temperature	ISO 306/B120 ISO 306/B50	293°F
--		291°F
Ball Pressure Test (275°F)	IEC 60695-10-2	Pass
CLTE	ISO 11359-2	
Flow : 73 to 131°F		3.6E-5in/in/°F
Transverse : 73 to 131°F		3.6E-5in/in/°F
Thermal Conductivity 8 (73°F)	ISO 8302	1.4 Btu-in/hr/ft ² /°F

Flammability Properties

MEASUREMENT	CONDITION	Value
Oxygen Index ⁹	ISO 4589-2	27%
Flash Ignition Temperature	ASTM D1929	896°F
Self Ignition Temperature	ASTM D1929	1022°F

Injection Properties

MEASUREMENT	Value
Drying Temperature - Dry Air Dryer	248°F
Drying Time - Dry Air Dryer	2.0 to 3.0hr
Suggested Max Moisture	< 0.020%
Suggested Shot Size	30 to 70%
Rear Temperature	500 to 518°F
Middle Temperature	536 to 554°F
Front Temperature	554 to 572°F
Nozzle Temperature	572 to 590°F
Processing (Melt) Temp	554 to 626°F
Mold Temperature	176 to 248°F
Back Pressure	725 to 2180psi
Vent Depth	9.8E-4 to 3.0E-3in

Injection Notes

Hold Pressure (% of Injection Pressure): 50 - 75%
Peripheral Screw Speed: 0.05 - 0.2 m/s
Standard Melt Temperature: 310°C

Notes

¹These links provide you with access to supplier literature. We work hard to keep them up to date; however you may find the most current literature from the supplier.

²Pellets

³60x60x2mm, 500 bar

⁴0.079 in/min

⁵2.0 mm/min

⁶3.0 mm

⁷10°C/min

⁸Across Flow

⁹Procedure A

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