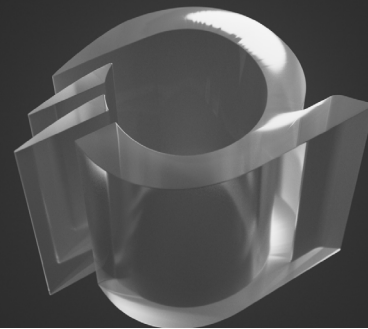




Makrolon® 2458

MVR (300°C/1.2 kg) 19 cm³/10 min; medical devices; suitable for ETO and steam sterilization at 121°C; biocompatible according to many ISO 10993-1 test requirements; low viscosity; easy release; injection molding - melt temperature 280 - 320°C; available in transparent and opaque colors

Physical Properties

MEASUREMENT	CONDITION	Value
Density (73°F)	ISO 1183	1.20g/cm ³
Apparent (Bulk) Density ³	ISO 60	0.66g/cm ³
Melt Mass-Flow Rate (MFR) (300°C/1.2 kg)	ISO 1133	20g/10 min
Melt Volume-Flow Rate (MVR) (300°C/1.2 kg)	ISO 1133	19cm ³ /10min
Molding Shrinkage		
Across Flow	ISO 2577	0.50 to 0.70%
Flow	ISO 2577	0.50 to 0.70%
Across Flow : 536°F, 0.0787 in ⁴	ISO 294-4	0.70%
Flow : 0.0787 in ⁴	ISO 294-4	0.65%
Water Absorption		
Saturation, 73°F	ISO 62	0.30%
Equilibrium, 73°F, 50% RH		0.12%

Hardness Properties

MEASUREMENT	CONDITION	Value
Ball Indentation Hardness	ISO 2039-1	16700psi

Mechanical Properties

MEASUREMENT	CONDITION	Value
Tensile Modulus (73°F)	ISO 527-1/1	348000psi
Tensile Stress		
Yield, 73°F	ISO 527-2/50	9430psi
Break, 73°F		10200psi

Features

- Biocompatible
- Ethylene Oxide Sterilizable
- Good Mold Release
- Low Viscosity

Processing Method

- Injection Molding

Applications

- Medical Devices
- Medical/Healthcare Applications

Colors

- Clear/Transparent
- Colors Available

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Mechanical Properties (continued)

MEASUREMENT	CONDITION	Value
Tensile Strain Yield, 73°F Break, 73°F	ISO 527-2/50	6.1% 130%
Nominal Tensile Strain at Break (73°F)	ISO 527-2/50	> 50%
Tensile Creep Modulus 1 hr 1000 hr	ISO 899-1	319000psi 276000psi
Flexural Modulus ⁵ (73°F)	ISO 178	341000psi
Flexural Stress ⁵ 73°F 3.5% Strain, 73°F	ISO 178	14100psi 10600psi
Flexural Strain at Flexural Strength ⁶ (73°F)	ISO 178	7.1%

Impact Properties

MEASUREMENT	CONDITION	Value
Charpy Notched Impact Strength ⁷ -22°F, Complete Break 73°F, Partial Break	ISO 179/1eA	6.7ft·lb/in ² 31ft·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 ⁷ -22°F, Complete Break 73°F, Partial Break	ISO 180/A	7.1ft·lb/in ² 31ft·lb/in ²
Multi-Axial Instrumented Impact Energy -22°F 73°F	ISO 6603-2	47.9ft·lb 40.6ft·lb
Multi-Axial Instrumented Impact Peak Force -22°F 73°F	ISO 6603-2	1350lbf 1150lbf

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Thermal Properties

MEASUREMENT	CONDITION	Value
Deflection Temperature Under Load 66 psi, Unannealed 264 psi, Unannealed	ISO 75-2/B ISO 75-2/A	282°F 257°F
Glass Transition Temperature ⁸	ISO 11357-2	295°F
Vicat Softening Temperature -- --	ISO 306/B120 ISO 306/B50	295°F 293°F
Ball Pressure Test (277°F)	IEC 60695-10-2	Pass
CLTE Flow : 73 to 131°F Transverse : 73 to 131°F	ISO 11359-2	3.6E-5in/in/°F 3.6E-5in/in/°F
Thermal Conductivity 9 (73°F)	ISO 8302	1.4 Btu·in/hr/ft²/°F

Electrical Properties

MEASUREMENT	CONDITION	Value
Surface Resistivity	IEC 60093	1.0E+16 ohms
Volume Resistivity (73°F)	IEC 60093	1.0E+16 ohms·cm
Electric Strength (73°F, 0.0394 in)	IEC 60243-1	860 V/mil
Relative Permittivity 73°F, 100 Hz 73°F, 1 MHz	IEC 60250	3.10 3.00
Dissipation Factor 73°F, 100 Hz 73°F, 1 MHz	IEC 60250	5.0E-4 9.0E-3
Comparative Tracking Index Solution A Solution B	IEC 60112	250 V

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Flammability Properties

MEASUREMENT	CONDITION	Value
Oxygen Index ¹⁰	ISO 4589-2	28%
Flash Ignition Temperature	ASTM D1929	896°F
Self Ignition Temperature	ASTM D1929	1022°F

Optical Properties

MEASUREMENT	CONDITION	Value
Refractive Index ¹⁵	ISO 489	1.586
Light Transmittance	ISO 13468-2	
39.37 mil		89.0%
78.74 mil		89.0%
118.1 mil		88.0%
157.5 mil		87.0%
Haze (118.1 mil)	ISO 14782	< 0.800%

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	482 to 500°F
Middle Temperature	518 to 536°F
Front Temperature	536 to 554°F
Nozzle Temperature	554 to 572°F
Processing (Melt) Temp	536 to 608°F

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Injection Properties (continued)

MEASUREMENT	Value
Mold Temperature	176 to 248°F
Back Pressure	725 to 2180psi
Vent Depth	9.8E-4 to 3.0E-3in
Hold Pressure (% of Injection Pressure)	50 - 75%
Peripheral Screw Speed	0.05 - 0.2 m/s
Standard Melt Temperature	300°C

Notes

³Pellets

⁴60x60x2mm, 500 bar

⁵0.079 in/min

⁶2.0 mm/min

⁷3 mm

⁸10°C/min

⁹Across Flow

¹⁰Procedure A

¹¹Method A

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