Makrolon® Rx3440

PC

Covestro Deutschland AG

- high viscosity
- MVR (300 °C/1.2 kg) 4.5 cm/10 min
- medical devices
- high lipid resistance
- suitable for sterilization with high-energy radiation
- biocompatible according to many ISO 10993-1 test requirements
- improved oncology drug resistance
- transparent parts for medical devices

Rheological properties	Value	Unit	Test Standard
ISO Data			
Melt volume-flow rate, MVR	4.5	cm³/10min	ISO 1133
Temperature	300	°C	-
Load	1.2	kg	-
Molding shrinkage, parallel	0.7	%	ISO 294-4, 2577
Molding shrinkage, normal	0.7	%	ISO 294-4, 2577
Melt Flow Index, MFI	4.7	g/10min	ISO 1133
MFI temperature	300	°C	-
MFI load	1.2	kg	-

Mechanical Properties	Value	Unit	Test Standard
ISO Data			
Tensile Modulus	2300	MPa	ISO 527
Yield stress	65	MPa	ISO 527
Yield strain	6.4	%	ISO 527
Nominal strain at break	>50	%	ISO 527
Impact Strength (Charpy), +23°C	no break	kJ/m²	ISO 179/1eU
Impact Strength (Charpy), -30°C	no break	kJ/m²	ISO 179/1eU
Puncture - maximum force, +23°C	5700	N	ISO 6603-2
Puncture - maximum force, -30°C	6600	N	ISO 6603-2
Puncture energy, +23°C	65	J	ISO 6603-2
Puncture energy, -30°C	70	J	ISO 6603-2
Flexural Modulus (23°C)	2300	MPa	ISO 178
Flexural strength	98	MPa	ISO 178
Notched Impact Strength (Izod), 23°C	80	kJ/m²	ISO 180/1A
Notched Impact Strength (Izod)	14	kJ/m²	ISO 180/1A
Temperature	-30	°C	-
Ball Indentation Hardness	114	MPa	ISO 2039-1

Thermal Properties	Value	Unit	Test Standard
ISO Data			
Glass Transition Temperature (10°C/min)	145	°C	ISO 11357-1/-2
Temp. of deflection under load (1.80 MPa)	126	°C	ISO 75-1/-2
Temp. of deflection under load (0.45 MPa)	139	°C	ISO 75-1/-2
Vicat softening temperature, 50°C/h 50N	144	°C	ISO 306
Coeff. of Linear Therm. Expansion, parallel	65	E-6/K	ISO 11359-1/-2
Coeff. of Linear Therm. Expansion, normal	65	E-6/K	ISO 11359-1/-2
Oxygen index	27	%	ISO 4589-1/-2

Other Properties	Value	Unit	Test Standard
ISO Data			
Water Absorption	0.3	%	Sim. to ISO 62
Humidity absorption	0.12	%	Sim. to ISO 62
Density	1200	kg/m³	ISO 1183
Bulk density	660	kg/m³	-

Test specimen production	Value	Unit	Test Standard
ISO Data			
Injection Molding, melt temperature	300	°C	ISO 294
Injection Molding, mold temperature	80	°C	ISO 294
Injection Molding, injection velocity	200	mm/s	ISO 294

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Processing Recommendation Injection Molding	Value	Unit	Test Standard
Pre-drying - Temperature	120	°C	-
Pre-drying - Time	2 - 3	h	-
Processing humidity	≤0.02	%	-
Melt temperature	290 - 330	°C	-
Mold temperature	80 - 120	°C	-
Zone 1	260 - 270	°C	-
Zone 2	280 - 290	°C	-
Zone 3	290 - 300	°C	-
Nozzle temperature	300 - 310	°C	-
Back pressure	5 - 15	MPa	-

Characteristics

Processing
Injection Molding

Chemical Resistance
Radiation Resistance

Delivery form
Pellets

Certifications
Medical, Biocompatibility ISO 10993

Special Characteristics
Transparent, Sterilizable, Gamma irradiation sterilization

Applications
Medical