Makrolon® AL2447 RE

PC — Covestro Deutschland AG

Product Texts

- MVR (300 °C/1.2 kg) 19 cm³/10 min
- Automotive lighting
- low viscosity
- UV stabilized
- easy release
- headlamp lenses for automotive forward lighting

Partially bio-circular grade / Attributed via mass balance (according to ISCC PLUS Standard).

Processing/Physical Characteristics	Value	Unit	Test Standard
ISO Data			
[C] Melt volume-flow rate, MVR	**19**	cm³/10min	ISO 1133
Temperature	**300**	°C	-
Load	**1.2**	kg	-
Melt flow index, MFI	**20**	g/10min	ISO 1133
Temperature	**300**	°C	-
Load	**1.2**	kg	-
[C] Molding shrinkage, parallel	**0.7**	%	ISO 294-4, 2577
[C] Molding shrinkage, normal	**0.7**	%	ISO 294-4, 2577

[C]: CAMPUS

Mechanical properties	Value	Unit	Test Standard
ISO Data			
[C] Tensile Modulus	**2400**	MPa	ISO 527
[C] Yield stress	**66**	MPa	ISO 527
[C] Yield strain	**6**	%	ISO 527
[C] Nominal strain at break	**>50**	%	ISO 527
Flexural modulus, 23°C	**2350**	MPa	ISO 178
Flexural strength	**98**	MPa	ISO 178
[C] Tensile creep modulus, 1h	**2200**	MPa	ISO 899-1
[C] Tensile creep modulus, 1000h	**1900**	MPa	ISO 899-1
[C] Charpy impact strength, +23°C	**N**	kJ/m²	ISO 179/1eU
Charpy notched impact strength, +23°C, 3mm	**65**	kJ/m²	ISO 179/1eA
Type of failure	**P(C)**	-	-
Charpy notched impact strength, -30°C, 3mm	**14**	kJ/m²	ISO 179/1eA
Type of failure	**C**	-	-
Izod notched impact strength, +23°C	**65**	kJ/m²	ISO 180/1A
Izod notched impact strength	**15**	kJ/m²	ISO 180/1A
Temperature	**-30**	°C	-
[C] Puncture - maximum force, +23°C	**5100**	N	ISO 6603-2
[C] Puncture - maximum force, -30°C	**6000**	N	ISO 6603-2
[C] Puncture energy, +23°C	**55**	J	ISO 6603-2
[C] Puncture energy, -30°C	**65**	J	ISO 6603-2
Ball indentation hardness	**115**	MPa	ISO 2039-1

[C]: CAMPUS

Thermal properties	Value	Unit	Test Standard
ISO Data			
[C] Glass transition temperature, 10°C/min	**145**	°C	ISO 11357-1/-2
[C] Temp. of deflection under load, 1.80 MPa	**125**	°C	ISO 75-1/-2
[C] Temp. of deflection under load, 0.45 MPa	**138**	°C	ISO 75-1/-2
[C] Vicat softening temperature, B	**144**	°C	ISO 306
[C] Coeff. of linear therm. expansion, parallel	**65**	E-6/K	ISO 11359-1/-2
[C] Coeff. of linear therm. expansion, normal	**65**	E-6/K	ISO 11359-1/-2
[C] Burning Behav. at thickness h	**V-2**	class	IEC 60695-11-10
Thickness tested	**0.8**	mm	-
Yellow Card available	**yes**	-	-

[C] Oxygen index	**28**	%	ISO 4589-1/-2

[C]: CAMPUS

Electrical properties	**Value**	**Unit**	**Test Standard**
ISO Data			
[C] Relative permittivity, 100Hz	**3.1**	-	IEC 62631-2-1
[C] Relative permittivity, 1MHz	**3**	-	IEC 62631-2-1
[C] Dissipation factor, 100Hz	**5**	E-4	IEC 62631-2-1
[C] Dissipation factor, 1MHz	**90**	E-4	IEC 62631-2-1
[C] Volume resistivity	**>1E13**	Ohm*m	IEC 62631-3-1
[C] Surface resistivity	**>1E15**	Ohm	IEC 62631-3-2
[C] Electric strength	**34**	kV/mm	IEC 60243-1
[C] Comparative tracking index	**250**	-	IEC 60112

[C]: CAMPUS

Optical properties	**Value**	**Unit**	**Test Standard**
ISO Data			
Haze	**0.5**	-	ISO 14782
[C] Luminous transmittance	**89**	%	ISO 13468-1, -2

[C]: CAMPUS

Other properties	**Value**	**Unit**	**Test Standard**
[C] Water absorption	**0.3**	%	Sim. to ISO 62
[C] Humidity absorption	**0.12**	%	Sim. to ISO 62
[C] Density	**1200**	kg/m³	ISO 1183
Bulk density	**660**	kg/m³	-

[C]: CAMPUS

Film Properties	**Value**	**Unit**	**Test Standard**
ISO Data			
WVTR, 23°C/85%r.h.	**15**	g/(m²*d)	ISO 15106-1/-2
Thickness of specimen	**0.1**	mm	-

Test specimen production	**Value**	**Unit**	**Test Standard**
ISO Data			
[C] Injection Molding, melt temperature	**280**	°C	ISO 294
Injection Molding, mold temperature	**80**	°C	ISO 294
Injection Molding, injection velocity	**200**	mm/s	ISO 294

[C]: CAMPUS

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	**280 - 320**	°C	-
Mold temperature	**80 - 120**	°C	-
Zone 1	**250 - 260**	°C	-
Zone 2	**270 - 280**	°C	-
Zone 3	**280 - 290**	°C	-
Nozzle temperature	**290 - 300**	°C	-
Back pressure	**5 - 15**	MPa	-

Characteristics

Processing
Injection Molding

Delivery form
Pellets

Additives
Release agent

Special Characteristics
U.V. stabilized or stable to weather, Transparent

Certifications
Contains renewable resources, ISCC Plus

Applications
Automotive

Regional Availability
North America, Europe, Asia Pacific, South and Central America, Near East/Africa