



Makrolon® DQ5142

/ MVR (300 °C/1.2 kg) 34 cm³/10 min; light diffusion grade; medium diffusion; low viscosity; UV stabilized; easy release; injection molding - melt temperature 250 - 300 °C; available in translucent colors only

ISO Shortname

PC

Property	Test Condition	Unit	Standard	typical Value
Rheological properties				
C Melt volume-flow rate	300 °C/ 1.2 kg	cm³/10 min	ISO 1133	34
C Molding shrinkage, parallel	60x60x2 mm/ 500 bar	%	ISO 294-4	0.65
C Molding shrinkage, normal	60x60x2 mm/ 500 bar	%	ISO 294-4	0.65
Mechanical properties (23 °C/50 % r. h.)				
C Tensile modulus	1 mm/min	MPa	ISO 527-1,-2	2300
C Yield stress	50 mm/min	MPa	ISO 527-1,-2	65
C Yield strain	50 mm/min	%	ISO 527-1,-2	6
C Nominal strain at break	50 mm/min	%	ISO 527-1,-2	> 50
Stress at break	50 mm/min	MPa	ISO 527-1,-2	60
Strain at break	50 mm/min	%	b.o. ISO 527-1,-2	110
C Charpy impact strength	23 °C	kJ/m²	ISO 179/1eU	N
Charpy notched impact strength	23 °C/ 3 mm	kJ/m²	ISO 21305/based on ISO 179/1eA	12(C)
Charpy notched impact strength	-30 °C/ 3 mm	kJ/m²	ISO 21305/based on ISO 179/1eA	12(C)
C Puncture impact properties - maximum force	23 °C	N	ISO 6603-2	4900
C Puncture impact properties - maximum force	-30 °C	N	ISO 6603-2	5900
C Puncture energy	23 °C	J	ISO 6603-2	44
C Puncture energy	-30 °C	J	ISO 6603-2	50
Ball indentation hardness		N/mm²	ISO 2039-1	> 120
Thermal properties				
C Temperature of deflection under load	1.80 MPa	°C	ISO 75-1,-2	120
C Temperature of deflection under load	0.45 MPa	°C	ISO 75-1,-2	134
C Vicat softening temperature	50 N; 50 °C/h	°C	ISO 306	140
C Burning behavior UL 94 [UL recognition]	0.75 mm	Class	UL 94	V-2
Glow wire test (GWFI)	0.75 mm	°C	IEC 60695-2-12	850
Glow wire test (GWFI)	1.5 mm	°C	IEC 60695-2-12	850
Glow wire test (GWFI)	3.0 mm	°C	IEC 60695-2-12	930
Glow wire test (GWIT)	0.75 mm	°C	IEC 60695-2-13	850
Glow wire test (GWIT)	1.5 mm	°C	IEC 60695-2-13	850
Glow wire test (GWIT)	3.0 mm	°C	IEC 60695-2-13	850
Other properties (23 °C)				
C Water absorption (saturation value)	Water at 23 °C	%	ISO 62	0.30
C Water absorption (equilibrium value)	23 °C; 50 % r. h.	%	ISO 62	0.12
C Density		kg/m³	ISO 1183-1	1200
Material specific properties				
Haze	1 mm	%	ISO 14782	100
Luminous transmittance	1 mm	%	ISO 13468-2	80
Luminous transmittance	2 mm	%	ISO 13468-2	65
Luminous transmittance	3 mm	%	ISO 13468-2	54
Luminous transmittance	4 mm	%	ISO 13468-2	47
Half power angle	1 mm	°	Covestro Test	26
Half power angle	2 mm	°	Covestro Test	43
Half power angle	3 mm	°	Covestro Test	50
Half power angle	4 mm	°	Covestro Test	53





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Property	Test Condition	Unit	Standard	typical Value
Processing conditions for test specimens				
C Injection molding - Melt temperature		°C	ISO 294	280
C Injection molding - Mold temperature		°C	ISO 294	80
C Injection molding - Injection velocity		mm/s	ISO 294	200
Recommended processing and drying conditions				
Melt temperatures		°C	-	250-300
Standard Melt temperature		°C	-	270
Barrel Temperatures - Rear		°C	-	230-240
Barrel Temperatures - Middle		°C	-	250-260
Barrel Temperatures - Front		°C	-	260-270
Barrel Temperatures - Nozzle		°C	-	260-270
Mold Temperatures		°C	-	80 - 120
Hold Pressure (% of injection pressure)		%	-	50 - 75
Plastic Back Pressure (specific)		bar	-	50 - 150
Peripheral Screw Speed		m/s	-	0.05 - 0.2
Shot-to-Cylinder Size		%	-	30 - 70
Dry Air Drying Temperature		°C	-	120
Dry Air Drying Time		h	-	2-3
Moisture Content max. (%)		%	-	<= 0.02
Vent Depth		mm	-	0.025 - 0.075

C These property characteristics are taken from the CAMPUS plastics data bank and are based on the international catalogue of basic data for plastics according to ISO 10350.

Impact properties: N = non-break, P = partial break, C = complete break

