

# Makrolon® 6455

/ MVR (300 °C/1.2 kg) 12 cm<sup>3</sup>/10 min; flame retardant; UL 94V-0/3.0 mm; medium viscosity; easy release; injection molding - melt temperature 280 - 320 °C; available in transparent, translucent and opaque colors

ISO Shortname ISO 7391-PC,MFR,(,)-18-9

Property	Test Condition	Unit	Standard	typical Value
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## Rheological properties

C Melt volume-flow rate	300 °C; 1.2 kg	cm <sup>3</sup> /10 min	ISO 1133	12
C Molding shrinkage, parallel	60x60x2 mm; 500 bar	%	ISO 294-4	0.65
C Molding shrinkage, normal	60x60x2 mm; 500 bar	%	ISO 294-4	0.7
Molding shrinkage, parallel/normal	Value range based on general practical experience	%	b.o. ISO 2577	0.6 - 0.8
Melt mass-flow rate	300 °C; 1.2 kg	g/10 min	ISO 1133	12.5

## Mechanical properties (23 °C/50 % r. h.)

C Tensile modulus	1 mm/min	MPa	ISO 527-1,-2	2400
C Yield stress	50 mm/min	MPa	ISO 527-1,-2	66
C Yield strain	50 mm/min	%	ISO 527-1,-2	6.1
C Nominal strain at break	50 mm/min	%	ISO 527-1,-2	> 50
Stress at break	50 mm/min	MPa	ISO 527-1,-2	65
Strain at break	50 mm/min	%	b.o. ISO 527-1,-2	115
Flexural modulus	2 mm/min	MPa	ISO 178	2400
Flexural strength	2 mm/min	MPa	ISO 178	98
Flexural strain at flexural strength	2 mm/min	%	ISO 178	7.1
Flexural stress at 3.5 % strain	2 mm/min	MPa	ISO 178	74
C Charpy impact strength	23 °C	kJ/m <sup>2</sup>	ISO 179-1eU	N
C Charpy impact strength	-30 °C	kJ/m <sup>2</sup>	ISO 179-1eU	N
Charpy notched impact strength	23 °C; 3 mm	kJ/m <sup>2</sup>	ISO 7391/b.o. ISO 179-1eA	70P
Charpy notched impact strength	-30 °C; 3 mm	kJ/m <sup>2</sup>	ISO 7391/b.o. ISO 179-1eA	14C
Izod notched impact strength	23 °C; 3 mm	kJ/m <sup>2</sup>	ISO 7391/b.o. ISO 180-A	65P
Izod notched impact strength	-30 °C; 3 mm	kJ/m <sup>2</sup>	ISO 7391/b.o. ISO 180-A	14C
C Puncture maximum force	23 °C	N	ISO 6603-2	5400
C Puncture maximum force	-30 °C	N	ISO 6603-2	6300
C Puncture energy	23 °C	J	ISO 6603-2	60
C Puncture energy	-30 °C	J	ISO 6603-2	65

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<b>Thermal properties</b>				
C Glass transition temperature	10 °C/min	°C	ISO 11357-1,-2	145
C Temperature of deflection under load	1.80 MPa	°C	ISO 75-1,-2	124
C Temperature of deflection under load	0.45 MPa	°C	ISO 75-1,-2	136
C Vicat softening temperature	50 N; 50 °C/h	°C	ISO 306	143
Vicat softening temperature	50 N; 120 °C/h	°C	ISO 306	144
C Coefficient of linear thermal expansion, parallel	23 to 55 °C	10 <sup>-4</sup> /K	ISO 11359-1,-2	0.65
C Coefficient of linear thermal expansion, transverse	23 to 55 °C	10 <sup>-4</sup> /K	ISO 11359-1,-2	0.65
C Burning behavior UL 94 (1.5 mm) [UL recognition]	1.5 mm	Class	UL 94	V-2
C Burning behavior UL 94 [UL recognition]	3.0 mm	Class	UL 94	V-0
C Oxygen index	Method A	%	ISO 4589-2	35
Thermal conductivity, cross-flow	23 °C; 50 % r. h.	W/(m·K)	ISO 8302	0.20
Resistance to heat (ball pressure test)		°C	IEC 60695-10-2	136
Relative temperature index (Tensile strength) [UL recognition]	1.5 mm	°C	UL 746B	125
Relative temperature index (Tensile impact strength) [UL recognition]	1.5 mm	°C	UL 746B	115
Relative temperature index (Electric strength) [UL recognition]	1.5 mm	°C	UL 746B	125
Glow wire test (GWFI)	1.0 mm	°C	IEC 60695-2-12	875
Glow wire test (GWFI)	1.5 mm	°C	IEC 60695-2-12	960
Glow wire test (GWFI)	2.0 mm	°C	IEC 60695-2-12	960
Glow wire test (GWFI)	3.0 mm	°C	IEC 60695-2-12	960
Glow wire test (GWFI)	4.0 mm	°C	IEC 60695-2-12	960
Burning rate (US-FMVSS)	>=1.0 mm	mm/min	ISO 3795	passed
Flash ignition temperature		°C	ASTM D1929	460
Self ignition temperature		°C	ASTM D1929	530
<b>Electrical properties (23 °C/50 % r. h.)</b>				
C Relative permittivity	100 Hz	-	IEC 60250	3.1
C Relative permittivity	1 MHz	-	IEC 60250	3.0
C Dissipation factor	100 Hz	10 <sup>-4</sup>	IEC 60250	8
C Dissipation factor	1 MHz	10 <sup>-4</sup>	IEC 60250	90
C Volume resistivity		Ohm·m	IEC 60093	1E14
C Surface resistivity		Ohm	IEC 60093	1E16
C Electrical strength	1 mm	kV/mm	IEC 60243-1	34
C Comparative tracking index CTI	Solution A	Rating	IEC 60112	225
Comparative tracking index CTI M	Solution B	Rating	IEC 60112	125M
Electrolytic corrosion		Rating	IEC 60426	A1
<b>Other properties (23 °C)</b>				
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/m <sup>3</sup>	ISO 1183-1	1200
Water vapor permeability	23 °C; 85 % RH; 100 µm film	g/(m <sup>2</sup> ·24 h)	ISO 15106-1	15
Bulk density	Pellets	kg/m <sup>3</sup>	ISO 60	640
<b>Material specific properties</b>				
Refractive index	Procedure A	-	ISO 489	1.586
Luminous transmittance (clear transparent materials)	1 mm	%	ISO 13468-2	89
C Luminous transmittance (clear transparent materials)	2 mm	%	ISO 13468-2	89
Luminous transmittance (clear transparent materials)	3 mm	%	ISO 13468-2	88
Luminous transmittance (clear transparent materials)	4 mm	%	ISO 13468-2	87

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Property	Test Condition	Unit	Standard	typical Value
<b>Processing conditions for test specimens</b>				
C Injection molding-Melt temperature		°C	ISO 294	290
C Injection molding-Mold temperature		°C	ISO 294	80
C Injection molding-Injection velocity		mm/s	ISO 294	200

**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



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## Disclaimer

### Typical value

These values are typical values only. Unless explicitly agreed in written form, they do not constitute a binding material specification or warranted values. Values may be affected by the design of the mold/die, the processing conditions and coloring/pigmentation of the product. Unless specified to the contrary, the property values given have been established on standardized test specimens at room temperature.

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