

# Makrolon OD2015

**Grades for / Optical storage media**

 Global grade; MVR (250 °C/2.16 kg) 16.5 cm<sup>3</sup>/10 min; Optical storage media; Suitable for all formats; High purity; Injection molding - Melt temperature 300 - 350 °C; Available in color code 000000 only

**ISO Shortname**

ISO 7391-PC,D,(,)-24-9

Property	Test Condition	Unit	Standard	Value
<b>Rheological properties</b>				
C Melt volume-flow rate	250 °C; 2.16 kg	cm <sup>3</sup> /10 min	ISO 1133	16.5
C Molding shrinkage, parallel	60x60x2; 500 bar	%	ISO 294-4	0.6
C Molding shrinkage, normal	60x60x2; 500 bar	%	ISO 294-4	0.6
<b>Mechanical properties (23 °C/50 % r. h.)</b>				
C Tensile modulus	1 mm/min	MPa	ISO 527-1,-2	2350
C Yield stress	50 mm/min	MPa	ISO 527-1,-2	63
C Yield strain	50 mm/min	%	ISO 527-1,-2	5.9
C Nominal strain at break	50 mm/min	%	ISO 527-1,-2	> 50
Stress at break	50 mm/min	MPa	ISO 527-1,-2	55
Strain at break	50 mm/min	%	b.o. ISO 527-1,-2	95
Flexural modulus	2 mm/min	MPa	ISO 178	2350
Flexural strength	2 mm/min	MPa	ISO 178	97
Flexural strain at flexural strength	2 mm/min	%	ISO 178	7.1
Flexural stress at 3.5 % strain	2 mm/min	MPa	ISO 178	72
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 impact strength	-60 °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	50P(C)
Charpy notched impact strength	-30 °C; 3 mm	kJ/m <sup>2</sup>	ISO 7391/b.o. ISO 179-1eA	12C
Izod notched impact strength	23 °C; 3.2 mm	kJ/m <sup>2</sup>	b.o. ISO 180-A	55P(C)
Izod notched impact strength	-30 °C; 3.2 mm	kJ/m <sup>2</sup>	b.o. ISO 180-A	10C
C Puncture maximum force	23 °C	N	ISO 6603-2	4700
C Puncture maximum force	-30 °C	N	ISO 6603-2	5700
C Puncture energy	23 °C	J	ISO 6603-2	50
C Puncture energy	-30 °C	J	ISO 6603-2	55
Ball indentation hardness		N/mm <sup>2</sup>	ISO 2039-1	116
<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	137
C Vicat softening temperature	50 N; 50 °C/h	°C	ISO 306	145
Vicat softening temperature	50 N; 120 °C/h	°C	ISO 306	146
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 [UL recognition]	0.71 mm	Class	UL 94	V-2 (NC)
C Oxygen index	Method A	%	ISO 4589-2	27
Thermal conductivity	23 °C	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]	0.71 mm	°C	UL 746B	80
Relative temperature index (Tensile impact strength) [UL recognition]	0.71 mm	°C	UL 746B	80
Relative temperature index (Electric strength) [UL recognition]	0.71 mm	°C	UL 746B	80
Flash ignition temperature		°C	ASTM D1929	480
Self ignition temperature		°C	ASTM D1929	550

# Makrolon OD2015

Property	Test Condition	Unit	Standard	Value
<b>Electrical properties (23 °C/50 % r. h.)</b>				
C Comparative tracking index CTI	Solution A	Rating	IEC 60112	225
Comparative tracking index CTI M	Solution B	Rating	IEC 60112	125M
<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	1190
Bulk density	Pellets	kg/m <sup>3</sup>	ISO 60	660
<b>Material specific properties</b>				
Refractive index	Procedure A	-	ISO 489	1.584
Haze for transparent materials	3 mm	%	ISO 14782	< 0.5
Luminous transmittance (clear transparent materials)	550 nm; 1mm	%	ISO 13468-2	> 89
Luminous transmittance (clear transparent materials)	800 nm; 1mm	%	ISO 13468-2	> 90
<b>Processing conditions for test specimens</b>				
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

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



# Makrolon OD2015

## Disclaimer

Disclaimer for Sales products

This information and our technical advice - whether verbal, in writing or by way of trials - are given in good faith but without warranty, and this also applies where proprietary rights of third parties are involved. Our advice does not release you from the obligation to check its validity and to test our products as to their suitability for the intended processes and uses. The application, use and processing of our products and the products manufactured by you on the basis of our technical advice are beyond our control and, therefore, entirely your own responsibility. Our products are sold in accordance with the current version of our General Conditions of Sale and Delivery.

Test values

Unless specified to the contrary, the values given have been established on standardized test specimens at room temperature. The figures should be regarded as guide values only and not as binding minimum values. Please note that, under certain conditions, the properties can be affected to a considerable extent by the design of the mold/die, the processing conditions and coloring.

Processing note

Under the recommended processing conditions small quantities of decomposition product may be given off during processing. To preclude any risk to the health and well-being of the machine operatives, tolerance limits for the work environment must be ensured by the provision of efficient exhaust ventilation and fresh air at the workplace in accordance with the Safety Data Sheet. In order to prevent the partial decomposition of the polymer and the generation of volatile decomposition products, the prescribed processing temperatures should not be substantially exceeded.

---

Publisher: Global Innovations - Polycarbonates

Bayer MaterialScience AG,

D-51368 Leverkusen,

[www.bayermaterialscience.com](http://www.bayermaterialscience.com)

[pcs-info@bayermaterialscience.com](mailto:pcs-info@bayermaterialscience.com)