

## Covestro Makrolon® 2405 MAS056 Polycarbonate

Category : Polymer , Thermoplastic , Polycarbonate (PC) , Polycarbonate, Impact Modified , Polycarbonate, Molded

### Material Notes:

Main characteristics:• High toughness• Good heat resistance• Glass-like transparency, optical quality• High dimensional accuracy and stability  
Grade characteristics:• General purpose• Low viscosity, easy release• Improved impact strength  
As of 1 September 2015, Bayer MaterialScience was separated from Bayer AG and officially adopted its new name – Covestro.

Order this product through the following link:

[http://www.lookpolymers.com/polymer\\_Covestro-Makrolon-2405-MAS056-Polycarbonate.php](http://www.lookpolymers.com/polymer_Covestro-Makrolon-2405-MAS056-Polycarbonate.php)

Physical Properties	Metric	English	Comments
Bulk Density	0.640 g/cc	0.0231 lb/in <sup>3</sup>	pellets; ISO 60
Density	1.20 g/cc	0.0434 lb/in <sup>3</sup>	ISO 1183-1
Moisture Absorption at Equilibrium	0.12 %	0.12 %	ISO 62, 50% RH
Water Absorption at Saturation	0.30 %	0.30 %	ISO 62
Linear Mold Shrinkage, Flow	0.0065 cm/cm @Thickness 2.00 mm	0.0065 in/in @Thickness 0.0787 in	60x60x2 mm; 500 bar; ISO 294-4
Linear Mold Shrinkage, Transverse	0.0070 cm/cm @Thickness 2.00 mm	0.0070 in/in @Thickness 0.0787 in	60x60x2 mm; 500 bar; ISO 294-4
Melt Flow	20 g/10 min @Load 1.20 kg, Temperature 300 °C	20 g/10 min @Load 2.65 lb, Temperature 572 °F	ISO 1133

Mechanical Properties	Metric	English	Comments
Puncture Resistance	4900 N @Temperature 23.0 °C	1100 lb (f) @Temperature 73.4 °F	ISO 6603-2
	5800 N @Temperature -30.0 °C	1300 lb (f) @Temperature -22.0 °F	ISO 6603-2
Ball Indentation Hardness	113 MPa	16400 psi	ISO 2039-1
Tensile Strength at Break	65.0 MPa	9430 psi	50 mm/min; ISO 527-1,-2
Tensile Strength, Yield	62.0 MPa	8990 psi	50 mm/min; ISO 527-1,-2
Elongation at Break	>= 50 %	>= 50 %	Nominal, 50 mm/min; ISO 527-1,-2
	115 %	115 %	50 mm/min; b.o. ISO 527-1,-2

Elongation at Yield Mechanical Properties	5.8 % Metric	5.8 % English	50 mm/min; ISO 527-1,-2 Comments
Tensile Modulus	2.40 GPa	348 ksi	1 mm/min; ISO 527-1,-2
Flexural Strength	93.0 MPa	13500 psi	2 mm/min; ISO 178
Flexural Yield Strength	72.0 MPa @Strain 3.50 %	10400 psi @Strain 3.50 %	2 mm/min; ISO 178
Flexural Modulus	2.40 GPa	348 ksi	2 mm/min; ISO 178
Izod Impact, Notched (ISO)	16.0 kJ/m <sup>2</sup> @Thickness 3.20 mm, Temperature -30.0 °C	7.61 ft-lb/in <sup>2</sup> @Thickness 0.126 in, Temperature -22.0 °F	complete break; b.o. ISO 180-A
	70.0 kJ/m <sup>2</sup> @Thickness 3.20 mm, Temperature 23.0 °C	33.3 ft-lb/in <sup>2</sup> @Thickness 0.126 in, Temperature 73.4 °F	partial break; b.o. ISO 180-A
Charpy Impact Unnotched	NB @Temperature 23.0 °C	NB @Temperature 73.4 °F	ISO 179-1eU
	NB @Temperature -30.0 °C	NB @Temperature -22.0 °F	ISO 179-1eU
	NB @Temperature -60.0 °C	NB @Temperature -76.0 °F	ISO 179-1eU
Charpy Impact, Notched	1.60 J/cm <sup>2</sup> @Thickness 3.00 mm, Temperature -30.0 °C	7.61 ft-lb/in <sup>2</sup> @Thickness 0.118 in, Temperature -22.0 °F	complete break; ISO 7391/b.o. ISO 179-1eA
	6.00 J/cm <sup>2</sup> @Thickness 3.00 mm, Temperature 23.0 °C	28.6 ft-lb/in <sup>2</sup> @Thickness 0.118 in, Temperature 73.4 °F	partial break; ISO 7391/b.o. ISO 179-1eA
Puncture Energy	50.0 J @Temperature 23.0 °C	36.9 ft-lb @Temperature 73.4 °F	ISO 6603-2
	55.0 J @Temperature -30.0 °C	40.6 ft-lb @Temperature -22.0 °F	ISO 6603-2
Thermal Properties	Metric	English	Comments
CTE, linear, Parallel to Flow	65.0 μm/m-°C	36.1 μin/in-°F	ISO 11359-1,-2
	@Temperature 23.0 - 55.0 °C	@Temperature 73.4 - 131 °F	
	65.0 μm/m-°C	36.1 μin/in-°F	

Thermal Properties	Metric @ Temperature 23.0 - 55.0 °C	English @ Temperature 73.4 - 131 °F	Comments ISO 11358-1,-2
Thermal Conductivity	0.200 W/m-K	1.39 BTU-in/hr-ft <sup>2</sup> -°F	cross-flow; ISO 8302
Hot Ball Pressure Test	136 °C	277 °F	IEC 60695-10-2
Deflection Temperature at 0.46 MPa (66 psi)	136 °C	277 °F	ISO 75-1,-2
Deflection Temperature at 1.8 MPa (264 psi)	123 °C	253 °F	ISO 75-1,-2
Vicat Softening Point	143 °C	289 °F	50°C/h; ISO 306
	@Load 5.10 kg	@Load 11.2 lb	
	144 °C	291 °F	120°C/h; ISO 306
	@Load 5.10 kg	@Load 11.2 lb	
Flammability, UL94	V-2	V-2	
	@Thickness 0.800 mm	@Thickness 0.0315 in	
	V-2	V-2	
	@Thickness 1.50 mm	@Thickness 0.0591 in	
	V-2	V-2	
	@Thickness 3.00 mm	@Thickness 0.118 in	
Flash Point	460 °C	860 °F	ASTM D 1929
	540 °C	1000 °F	self ignition; ASTM D 1929
Oxygen Index	30 %	30 %	Method A; ISO 4589-2
Glow Wire Test	800 °C	1470 °F	GWFI; IEC 60695-2-12
	@Thickness 1.00 mm	@Thickness 0.0394 in	
	800 °C	1470 °F	GWFI; IEC 60695-2-12
	@Thickness 1.50 mm	@Thickness 0.0591 in	
	825 °C	1520 °F	GWIT; IEC 60695-2-13
	@Thickness 1.00 mm	@Thickness 0.0394 in	
	825 °C	1520 °F	GWIT; IEC 60695-2-13
	@Thickness 1.50 mm	@Thickness 0.0591 in	
	825 °C	1520 °F	GWIT; IEC 60695-2-13
	@Thickness 2.00 mm	@Thickness 0.0787 in	
	850 °C	1560 °F	

Thermal Properties	Metric	English	Comments
	@Thickness 3.00 mm	@Thickness 0.118 in	GWIT; IEC 60695-2-13
	850 °C	1560 °F	
	@Thickness 4.00 mm	@Thickness 0.157 in	GWIT; IEC 60695-2-13
	850 °C	1560 °F	
	@Thickness 2.00 mm	@Thickness 0.0787 in	GWFI; IEC 60695-2-12
	930 °C	1710 °F	
	@Thickness 3.00 mm	@Thickness 0.118 in	GWFI; IEC 60695-2-12
	960 °C	1760 °F	
	@Thickness 4.00 mm	@Thickness 0.157 in	GWFI; IEC 60695-2-12

Electrical Properties	Metric	English	Comments
Volume Resistivity	1.00e+16 ohm-cm	1.00e+16 ohm-cm	IEC 60093
Surface Resistance	1.00e+16 ohm	1.00e+16 ohm	IEC 60093
Dielectric Constant	3.0	3.0	
	@Frequency 1.00e+6 Hz	@Frequency 1.00e+6 Hz	IEC 60250
	3.1	3.1	
	@Frequency 100 Hz	@Frequency 100 Hz	IEC 60250
Dielectric Strength	34.0 kV/mm	864 kV/in	
	@Thickness 1.00 mm	@Thickness 0.0394 in	IEC 60243-1
Dissipation Factor	0.0010	0.0010	
	@Frequency 100 Hz	@Frequency 100 Hz	IEC 60250
	0.011	0.011	
	@Frequency 1.00e+6 Hz	@Frequency 1.00e+6 Hz	IEC 60250
Comparative Tracking Index	125 V	125 V	CTI M; Solution B; IEC 60112
	250 V	250 V	Solution A; IEC 60112

Processing Properties	Metric	English	Comments
Melt Temperature	280 °C	536 °F	Injection molding; ISO 294
Mold Temperature	80.0 °C	176 °F	Injection molding; ISO 294
Injection Velocity	200 mm/sec	7.87 in/sec	ISO 294

Processing Properties	Metric	English	Comments
Descriptive Properties		Value	Comments
Electrolytic Corrosion		A1	IEC 60426

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