

Covestro Makrolon® 2405 Polycarbonate, Injection Grade

Category : Polymer , Thermoplastic , Polycarbonate (PC) , Polycarbonate, Unreinforced, Flame Retardant

Material Notes:

Very easy flowing injection molding grade with easy mold release, Makrolon grade 2458 for food contact applications. Information provided by Bayer. 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-Polycarbonate-Injection-Grade.php

Physical Properties	Metric	English	Comments
Density	1.20 g/cc	0.0434 lb/in ³	
Water Absorption	0.35 %	0.35 %	Saturation in water
Moisture Absorption at Equilibrium	0.15 %	0.15 %	Equilibrium at 50% RH
Water Absorption at Saturation	0.35 %	0.35 %	
Linear Mold Shrinkage	0.0050 - 0.0070 cm/cm	0.0050 - 0.0070 in/in	ASTM D955
Melt Flow	19 g/10 min @Load 1.20 kg, Temperature 300 °C	19 g/10 min @Load 2.65 lb, Temperature 572 °F	

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell M	75	75	ASTM D785
Hardness, Rockwell R	118	118	ASTM D785
Tensile Strength, Ultimate	69.0 MPa	10000 psi	ASTM D638
Tensile Strength, Yield	63.0 MPa	9140 psi	
Elongation at Break	120 %	120 %	ASTM D638
Elongation at Yield	6.0 %	6.0 %	
Tensile Modulus	2.30 GPa	334 ksi	
Flexural Yield Strength	83.0 MPa	12000 psi	at 5% strain; ASTM D790
Flexural Modulus	2.30 GPa	334 ksi	ASTM D790
Izod Impact, Notched	7.50 J/cm @Thickness 3.20 mm	14.1 ft-lb/in @Thickness 0.126 in	ASTM D256
Charpy Impact Unnotched	NB	NB	
Tensile Creep Modulus, 1 hour			

Mechanical Properties	2200 MPa Metric	319000 psi English	Comments
Tensile Creep Modulus, 1000 hours	1900 MPa	276000 psi	

Thermal Properties	Metric	English	Comments
CTE, linear, Parallel to Flow	70.0 $\mu\text{m}/\text{m}\cdot^\circ\text{C}$	38.9 $\mu\text{in}/\text{in}\cdot^\circ\text{F}$	
	@Temperature 20.0 $^\circ\text{C}$	@Temperature 68.0 $^\circ\text{F}$	
CTE, linear, Transverse to Flow	70.0 $\mu\text{m}/\text{m}\cdot^\circ\text{C}$	38.9 $\mu\text{in}/\text{in}\cdot^\circ\text{F}$	
	@Temperature 20.0 $^\circ\text{C}$	@Temperature 68.0 $^\circ\text{F}$	
Specific Heat Capacity	1.17 J/g- $^\circ\text{C}$	0.280 BTU/lb- $^\circ\text{F}$	ASTM D2766
Thermal Conductivity	0.200 W/m-K	1.39 BTU-in/hr-ft ² - $^\circ\text{F}$	ASTM C177
Deflection Temperature at 0.46 MPa (66 psi)	137 $^\circ\text{C}$	279 $^\circ\text{F}$	
Deflection Temperature at 1.8 MPa (264 psi)	124 $^\circ\text{C}$	255 $^\circ\text{F}$	
Vicat Softening Point	144 $^\circ\text{C}$	291 $^\circ\text{F}$	
Glass Transition Temp, Tg	148 $^\circ\text{C}$	298 $^\circ\text{F}$	
UL RTI, Electrical	125 $^\circ\text{C}$	257 $^\circ\text{F}$	
UL RTI, Mechanical with Impact	115 $^\circ\text{C}$	239 $^\circ\text{F}$	
UL RTI, Mechanical without Impact	125 $^\circ\text{C}$	257 $^\circ\text{F}$	
Flammability, UL94	V-2	V-2	
	@Thickness 2.60 mm	@Thickness 0.102 in	
	V-2	V-2	
	@Thickness 1.60 mm	@Thickness 0.0630 in	
Oxygen Index	26 %	26 %	

Optical Properties	Metric	English	Comments
Refractive Index	1.584	1.584	
Haze	1.0 %	1.0 %	ASTM D1003
	@Thickness 3.17 mm	@Thickness 0.125 in	
Transmission, Visible	88 %	88 %	ASTM D1003
	@Thickness 3.20 mm	@Thickness 0.126 in	

Electrical Properties	Metric	English	Comments
Electrical Resistivity	$\geq 1.00 \times 10^{15}$ ohm-cm	$\geq 1.00 \times 10^{15}$ ohm-cm	
Surface Resistance	1.00×10^{15} ohm	1.00×10^{15} ohm	
Dielectric Constant	2.9	2.9	
	@Frequency 1e+6 Hz	@Frequency 1e+6 Hz	
Dielectric Strength	3.0	3.0	
	@Frequency 100 Hz	@Frequency 100 Hz	
Dielectric Strength	30.0 kV/mm	762 kV/in	
Dissipation Factor	0.0010	0.0010	
	@Frequency 100 Hz	@Frequency 100 Hz	
Dissipation Factor	0.010	0.010	
	@Frequency 1e+6 Hz	@Frequency 1e+6 Hz	
Arc Resistance	120 sec	120 sec	Tungsten Electrodes; ASTM D495
Comparative Tracking Index	275 V	275 V	
Hot Wire Ignition, HWI	30 - 60 sec	30 - 60 sec	UL PLC 2 (30-60 s)
	@Thickness 1.50 mm	@Thickness 0.0591 in	
Hot Wire Ignition, HWI	30 - 60 sec	30 - 60 sec	UL PLC 2 (30-60 s)
	@Thickness 3.00 mm	@Thickness 0.118 in	
High Amp Arc Ignition, HAI	60 - 120 arcs	60 - 120 arcs	UL PLC 1 (60-120 arcs)
	@Thickness 3.00 mm	@Thickness 0.118 in	
High Voltage Arc-Tracking Rate, HVTR	0.000 - 10.0 mm/min	0.000 - 0.394 in/min	UL PLC 0 (0-10 mm/min)
	@Thickness 3.00 mm	@Thickness 0.118 in	

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