

Makroblend® UT4045 G

Covestro - Polycarbonates - Polycarbonate + PBT

General Information

Product Description

(PC+PBT)-blend, 20% Glass fiber reinforced, easy release, injection molding. Makroblend UT4045G offers a high stiffness, excellent chemical resistance, good flowability and exceptional dimensional stability.

General

Material Status	• Commercial: Active
Availability	• Africa & Middle East • Europe • North America • Asia Pacific • Latin America
Filler / Reinforcement	• Glass Fiber, 20% Filler by Weight
Features	• Chemical Resistant • Good Flow • High Stiffness • Good Dimensional Stability • Good Mold Release
RoHS Compliance	• RoHS Compliant
Processing Method	• Injection Molding

Properties ¹

Physical	Nominal Value	Unit	Test Method
Density (73°F)	1.40	g/cm ³	ISO 1183
Melt Volume-Flow Rate (MVR) (260°C/5.0 kg)	30	cm ³ /10min	ISO 1133
Molding Shrinkage			ISO 2577
Across Flow ²	0.20 to 0.60	%	
Across Flow : 194°F, 1 hr	< 0.10	%	
Flow ²	0.20 to 0.60	%	
Flow : 194°F, 1 hr	< 0.10	%	
Across Flow : 500°F, 0.118 in ³	0.50 to 0.70	%	
Flow : 500°F, 0.118 in ³	0.20 to 0.40	%	
Water Absorption (Saturation, 73°F)	0.30	%	ISO 62
Water Absorption (Equilibrium, 73°F, 50% RH)	0.15	%	ISO 62
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus (73°F)	943000	psi	ISO 527-1/1
Tensile Stress (Yield, 73°F)	14500	psi	ISO 527-2/5
Tensile Stress (Break, 73°F)	14500	psi	ISO 527-2/5
Tensile Strain (Yield, 73°F)	3.0	%	ISO 527-2/5
Tensile Strain (Break, 73°F)	3.0	%	ISO 527-2/5
Nominal Tensile Strain at Break (73°F)	3.0	%	ISO 527-2/5
Flexural Modulus ⁴ (73°F)	885000	psi	ISO 178
Flexural Stress ⁴ (73°F)	23200	psi	ISO 178
Flexural Strain at Flexural Strength ⁵ (73°F)	3.0	%	ISO 178
Impact	Nominal Value	Unit	Test Method
Charpy Unnotched Impact Strength			ISO 179/1eU
-22°F	19	ft·lb/in ²	
73°F	21	ft·lb/in ²	
Notched Izod Impact Strength			ISO 180/A
-22°F	2.9	ft·lb/in ²	
73°F	2.9	ft·lb/in ²	
Unnotched Izod Impact Strength			ISO 180
-22°F	17	ft·lb/in ²	
73°F	19	ft·lb/in ²	



Hardness	Nominal Value	Unit	Test Method
Ball Indentation Hardness	13100	psi	ISO 2039-1
Thermal	Nominal Value	Unit	Test Method
Deflection Temperature Under Load (66 psi, Unannealed)	266	°F	ISO 75-2/B
Deflection Temperature Under Load (264 psi, Unannealed)	230	°F	ISO 75-2/A
Vicat Softening Temperature	284	°F	ISO 306/B120
CLTE - Flow (73 to 131°F)	3.9E-5	in/in/°F	ISO 11359-2
CLTE - Transverse (73 to 131°F)	1.9E-5	in/in/°F	ISO 11359-2
Electrical	Nominal Value	Unit	Test Method
Surface Resistivity	> 1.0E+17	ohms	IEC 60093
Volume Resistivity (73°F)	> 1.0E+17	ohms·cm	IEC 60093
Electric Strength (73°F, 0.0394 in)	840	V/mil	IEC 60243-1
Relative Permittivity			IEC 60250
73°F, 100 Hz	3.60		
73°F, 1 MHz	3.40		
Dissipation Factor			IEC 60250
73°F, 100 Hz	1.3E-3		
73°F, 1 MHz	0.014		
Comparative Tracking Index (Solution A)	175	V	IEC 60112
Additional Information	Nominal Value	Unit	Test Method
Filler Content	20	%	ISO 3451-1A

Processing Information

Injection	Nominal Value	Unit
Drying Temperature - Dry Air Dryer	230	°F
Drying Time - Dry Air Dryer	2.0 to 4.0	hr
Suggested Max Moisture	< 0.010	%
Suggested Shot Size	30 to 70	%
Rear Temperature	473 to 491	°F
Middle Temperature	482 to 500	°F
Front Temperature	491 to 509	°F
Nozzle Temperature	491 to 518	°F
Processing (Melt) Temp	500 to 536	°F
Mold Temperature	122 to 212	°F
Back Pressure	725 to 2180	psi
Vent Depth	9.8E-4 to 3.0E-3	in

Injection Notes

Peripheral Screw Speed: 0.05 - 0.2 m/s
Standard Melt Temperature: 260°C
Hold Pressure (% of Injection Pressure): 50 - 75%

Notes

¹ Typical properties: these are not to be construed as specifications.

² 600 bar

³ 150x105x3mm., MT 80°C, 600 bar

⁴ 0.079 in/min

⁵ 2.0 mm/min

