Makrolon® GF9415

PC-GF10 FR — Covestro Deutschland AG

Product Texts

- MVR (300 °C/1.2 kg) 6.0 cm³/10 min
- 10 % glass fiber reinforced
- flame retardant
- UL 94V-0/1.5 mm and 5VA/3.0 mm
- high viscosity
- easy release

Former Makrolon® TP5059

Processing/Physical Characteristics	Value	Unit	Test Standard
ISO Data			
[C] Melt volume-flow rate, MVR	**6**	cm³/10min	ISO 1133
Temperature	**300**	°C	-
Load	**1.2**	kg	-
[C] Molding shrinkage, parallel	**0.7**	%	ISO 294-4, 2577
[C] Molding shrinkage, normal	**0.5**	%	ISO 294-4, 2577

[C]: CAMPUS

Mechanical properties	Value	Unit	Test Standard
ISO Data			
[C] Tensile Modulus	**3800**	MPa	ISO 527
[C] Stress at break	**45**	MPa	ISO 527
[C] Strain at break	**15**	%	ISO 527
Flexural modulus, 23°C	**3600**	MPa	ISO 178
Flexural strength	**5.8**	MPa	ISO 178
[C] Charpy impact strength, +23°C	**150**	kJ/m²	ISO 179/1eU
[C] Type of failure	**C**	-	-
Charpy impact strength, -30°C	**130**	kJ/m²	ISO 179/1eU
Type of failure	**C**	-	-
Izod notched impact strength, +23°C	**10**	kJ/m²	ISO 180/1A
Izod notched impact strength	**6**	kJ/m²	ISO 180/1A
Temperature	**-30**	°C	-
[C] Puncture - maximum force, +23°C	**3900**	N	ISO 6603-2
[C] Puncture - maximum force, -30°C	**3700**	N	ISO 6603-2
[C] Puncture energy, +23°C	**25**	J	ISO 6603-2
[C] Puncture energy, -30°C	**15**	J	ISO 6603-2

[C]: CAMPUS

Thermal properties	Value	Unit	Test Standard
ISO Data			
[C] Temp. of deflection under load, 1.80 MPa	**137**	°C	ISO 75-1/-2
[C] Temp. of deflection under load, 0.45 MPa	**145**	°C	ISO 75-1/-2
[C] Vicat softening temperature, B	**145**	°C	ISO 306
[C] Burning Behav. at 1.5 mm nom. thickn.	**V-0**	class	IEC 60695-11-10
Thickness tested	**1.5**	mm	-
[C] Burning Behav. at thickness h	**V-2**	class	IEC 60695-11-10
Thickness tested	**0.8**	mm	-
[C] Burning Behav. 5V at thickness h	**5VA**	class	IEC 60695-11-20
Thickness tested	**3.0**	mm	-
[C] Oxygen index	**35**	%	ISO 4589-1/-2
Glow Wire Flammability Index (GWFI)	**960**	°C	IEC 60695-2-12
GWFI - thickness tested (1)	**0.75**	mm	-
Glow Wire Flammability Index (GWFI)	**960**	°C	IEC 60695-2-12
GWFI - thickness tested (2)	**1.5**	mm	-
Glow Wire Flammability Index (GWFI)	**960**	°C	IEC 60695-2-12
GWFI - thickness tested (3)	**3**	mm	-
Glow Wire Ignition Temperature (GWIT)	**825**	°C	IEC 60695-2-13

GWIT - thickness tested (1)	**0.75**	mm	-
Glow Wire Ignition Temperature (GWIT)	**850**	°C	IEC 60695-2-13
GWIT - thickness tested (2)	**1.5**	mm	-
Glow Wire Ignition Temperature (GWIT)	**850**	°C	IEC 60695-2-13
GWIT - thickness tested (3)	**3**	mm	-

[C]: CAMPUS

Electrical properties	**Value**	**Unit**	**Test Standard**
ISO Data			
[C] Volume resistivity	**>1E13**	Ohm*m	IEC 62631-3-1
[C] Surface resistivity	**1E15**	Ohm	IEC 62631-3-2
[C] Electric strength	**37**	kV/mm	IEC 60243-1
[C] Comparative tracking index	**175**	-	IEC 60112

[C]: CAMPUS

Other properties	**Value**	**Unit**	**Test Standard**
[C] Density	**1270**	kg/m³	ISO 1183

[C]: CAMPUS

Test specimen production	**Value**	**Unit**	**Test Standard**
ISO Data			
[C] Injection Molding, melt temperature	**300**	°C	ISO 294
Injection Molding, mold temperature	**110**	°C	ISO 294
Injection Molding, injection velocity	**200**	mm/s	ISO 294

[C]: CAMPUS

Processing Recommendation Injection Molding	**Value**	**Unit**	**Test Standard**
Pre-drying - Temperature	**120**	°C	-
Pre-drying - Time	**2 - 3**	h	-
Melt temperature	**280 - 320**	°C	-
Mold temperature	**110**	°C	-

Characteristics

Processing
Injection Molding

Additives
Release agent

Special Characteristics
Flame retardant, Opaque

Regional Availability
North America, Europe, Asia Pacific, South and Central America, Near East/Africa