



Makrolon® 9417

PC-GF10

Covestro Deutschland AG

- 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
- UV stabilized
- easy release

Rheological properties	Value	Unit	Test Standard
ISO Data			
Melt volume-flow rate, MVR	6	cm³/10min	ISO 1133
Temperature	300	°C	-
Load	1.2	kg	-
Molding shrinkage, parallel	0.6	%	ISO 294-4, 2577
Molding shrinkage, normal	0.5	%	ISO 294-4, 2577

Mechanical Properties	Value	Unit	Test Standard
ISO Data			
Tensile Modulus	3800	MPa	ISO 527
Stress at Break	45	MPa	ISO 527
Strain at Break	15	%	ISO 527
Tensile Creep Modulus, 1h	3600	MPa	ISO 899-1
Tensile Creep Modulus, 1000h	2900	MPa	ISO 899-1
Impact Strength (Charpy), +23°C	150	kJ/m²	ISO 179/1eU
Impact Strength (Charpy), -30°C	120	kJ/m²	ISO 179/1eU
Puncture - maximum force, +23°C	4000	N	ISO 6603-2
Puncture - maximum force, -30°C	3700	N	ISO 6603-2
Puncture energy, +23°C	25	J	ISO 6603-2
Puncture energy, -30°C	15	J	ISO 6603-2

Thermal Properties	Value	Unit	Test Standard
ISO Data			
Temp. of deflection under load (1.80 MPa)	135	°C	ISO 75-1/-2
Temp. of deflection under load (0.45 MPa)	141	°C	ISO 75-1/-2
Vicat softening temperature, 50°C/h 50N	143	°C	ISO 306
Coeff. of Linear Therm. Expansion, parallel	40	E-6/K	ISO 11359-1/-2
Coeff. of Linear Therm. Expansion, normal	65	E-6/K	ISO 11359-1/-2
Burning Behav. at 1.5 mm Nom. Thickn.	V-0	class	UL 94
Thickness tested	1.5	mm	-
Burning Behav. 5V at Thickness h	5VA	class	IEC 60695-11-20
Thickness tested	3.0	mm	-
Oxygen index	35	%	ISO 4589-1/-2

Electrical Properties	Value	Unit	Test Standard
ISO Data			
Relative permittivity, 100Hz	3.2	-	IEC 62631-2-1
Relative permittivity, 1MHz	3.2	-	IEC 62631-2-1
Dissipation Factor, 100Hz	10	E-4	IEC 62631-2-1
Dissipation Factor, 1MHz	90	E-4	IEC 62631-2-1
Volume Resistivity	>1E13	Ohm*m	IEC 62631-3-1
Surface Resistivity	>1E15	Ohm	IEC 62631-3-2
Electric Strength	36	kV/mm	IEC 60243-1
Comparative tracking index	175	-	IEC 60112

Other Properties	Value	Unit	Test Standard
ISO Data			
Water Absorption	0.26	%	Sim. to ISO 62
Humidity absorption	0.1	%	Sim. to ISO 62
Density	1270	kg/m³	ISO 1183

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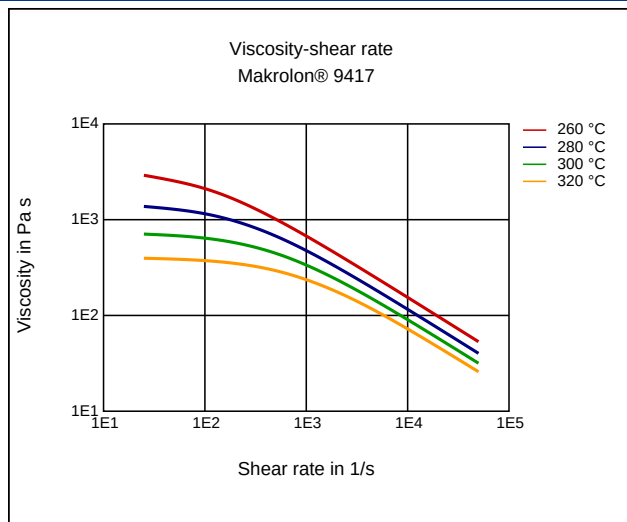
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Test specimen production	Value	Unit	Test Standard
ISO Data			
Injection Molding, melt temperature	300	°C	ISO 294
Injection Molding, mold temperature	110	°C	ISO 294
Injection Molding, injection velocity	200	mm/s	ISO 294

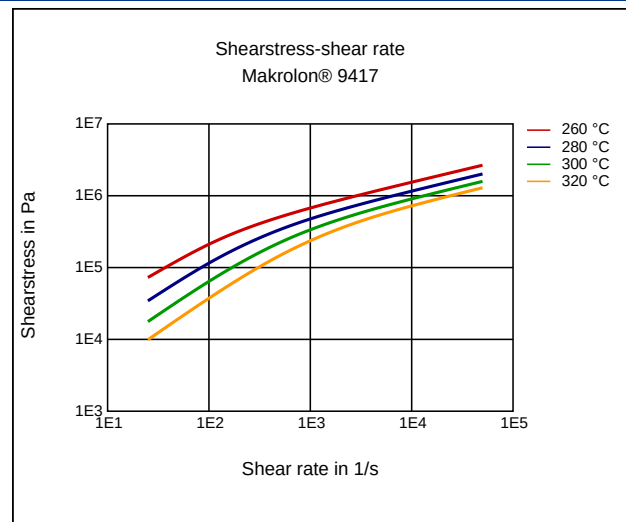
Processing Recommendation Injection Molding	Value	Unit	Test Standard
Pre-drying - Temperature	120	°C	-
Pre-drying - Time	2 - 3	h	-
Processing humidity	≤0.02	%	-
Melt temperature	310 - 330	°C	-
Mold temperature	80 - 130	°C	-

Diagrams

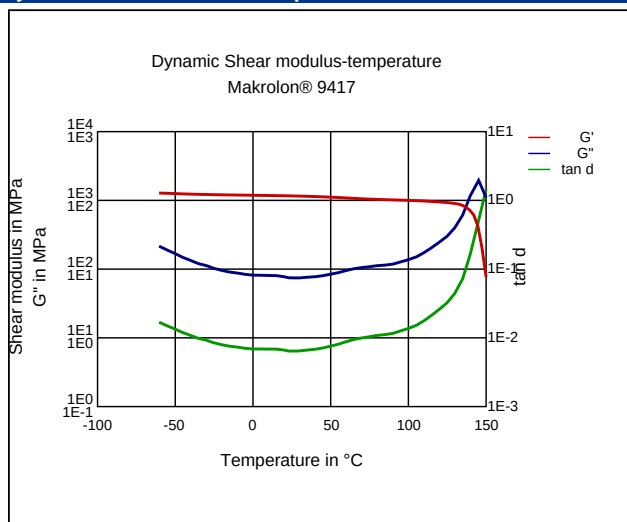
Viscosity-shear rate



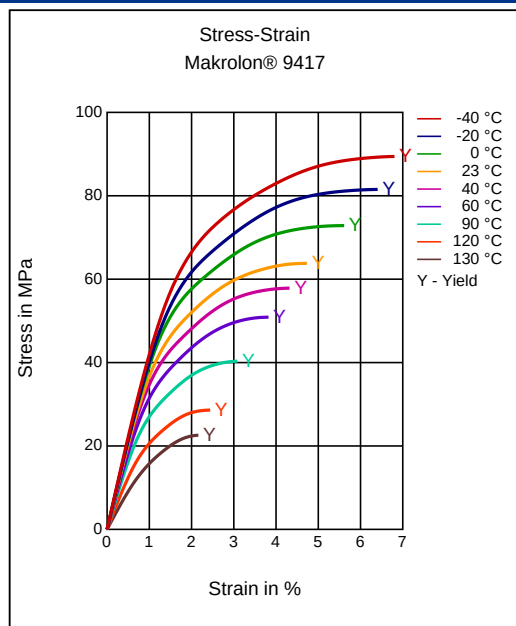
Shearstress-shear rate



Dynamic Shear modulus-temperature



Stress-strain

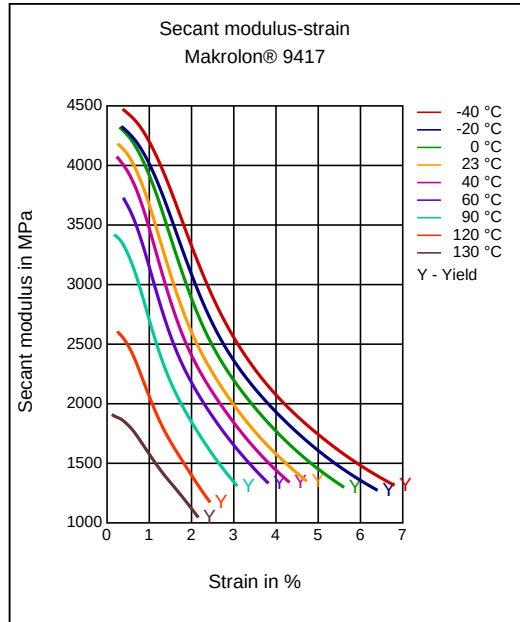


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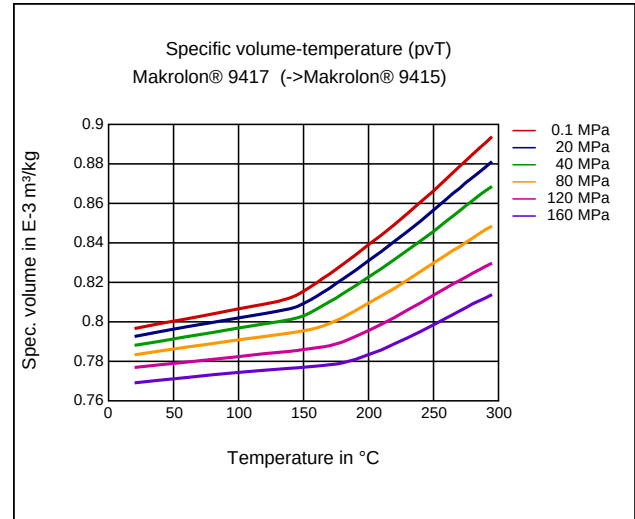
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Secant modulus-strain



Specific volume-temperature (pvT)



Characteristics

Processing

Injection Molding, Other Extrusion

Delivery form

Pellets

Additives

Release agent

Special Characteristics

Flame retardant, Light stabilized or stable to light, UV stablized

Injection Molding

PREPROCESSING

Max. Water content: 0.01 - 0.02 %

Drying temperature: 120 °C

Drying time:

Circulating air drying oven (50 % fresh air) 4-8 h

Fresh air dryer (high speed dryer) 2-4 h

Dry air dryer 2-3 h

PROCESSING

Melt temperature: 310-330 °C

Mold temperature: 80-130 °C

Use open nozzle.