

Ultradur® B 4300 G10

PBT-GF50

BASF

Injection molding grade with 50 % glass fibers for very rigid technical parts (e.g. small motor housings).

The products can also be offered as BMBcert™ and/or Ccycled™. Due to the Massbalance approach the product properties do not change.

Abbreviated designation according to ISO 1043: PBT-GF50

Rheological properties	Value	Unit	Test Standard
ISO Data			
Melt volume-flow rate, MVR	3.5	cm³/10min	ISO 1133
Temperature	250	°C	-
Load	2.16	kg	-
Molding shrinkage, parallel	0.4	%	ISO 294-4, 2577
Molding shrinkage, normal	1.0	%	ISO 294-4, 2577

Mechanical Properties	Value	Unit	Test Standard
ISO Data			
Tensile Modulus	16500	MPa	ISO 527
Stress at Break	160	MPa	ISO 527
Strain at Break	1.7	%	ISO 527
Impact Strength (Charpy), +23°C	60	kJ/m²	ISO 179/1eU
Impact Strength (Charpy), -30°C	70	kJ/m²	ISO 179/1eU
Notched Impact Strength (Charpy), +23°C	11	kJ/m²	ISO 179/1eA
Notched Impact Strength (Charpy), -30°C	10	kJ/m²	ISO 179/1eA

Thermal Properties	Value	Unit	Test Standard
ISO Data			
Melting Temperature (10°C/min)	223	°C	ISO 11357-1/-3
Temp. of deflection under load (1.80 MPa)	210	°C	ISO 75-1/-2
Temp. of deflection under load (0.45 MPa)	220	°C	ISO 75-1/-2
Coeff. of Linear Therm. Expansion, parallel	20	E-6/K	ISO 11359-1/-2
Coeff. of Linear Therm. Expansion, normal	95	E-6/K	ISO 11359-1/-2
Burning Behav. at 1.5 mm Nom. Thickn.	HB	class	UL 94
Thickness tested	1.5	mm	-
UL recognition	yes	-	-
Burning Behav. at thickness h	HB	class	UL 94
Thickness tested	0.8	mm	-
UL recognition	yes	-	-
Oxygen index	19.5	%	ISO 4589-1/-2

Electrical Properties	Value	Unit	Test Standard
ISO Data			
Relative permittivity, 100Hz	4	-	IEC 62631-2-1
Relative permittivity, 1MHz	4	-	IEC 62631-2-1
Dissipation Factor, 100Hz	12	E-4	IEC 62631-2-1
Dissipation Factor, 1MHz	150	E-4	IEC 62631-2-1
Volume Resistivity	>1E13	Ohm*m	IEC 62631-3-1
Surface Resistivity	1E13	Ohm	IEC 62631-3-2
Electric Strength	37	kV/mm	IEC 60243-1
Comparative tracking index	425	-	IEC 60112

Other Properties	Value	Unit	Test Standard
ISO Data			
Water Absorption	0.4	%	Sim. to ISO 62
Humidity absorption	0.2	%	Sim. to ISO 62
Density	1730	kg/m³	ISO 1183

Material Specific Properties	Value	Unit	Test Standard
ISO Data			
Viscosity number	97	cm³/g	ISO 307, 1157, 1628

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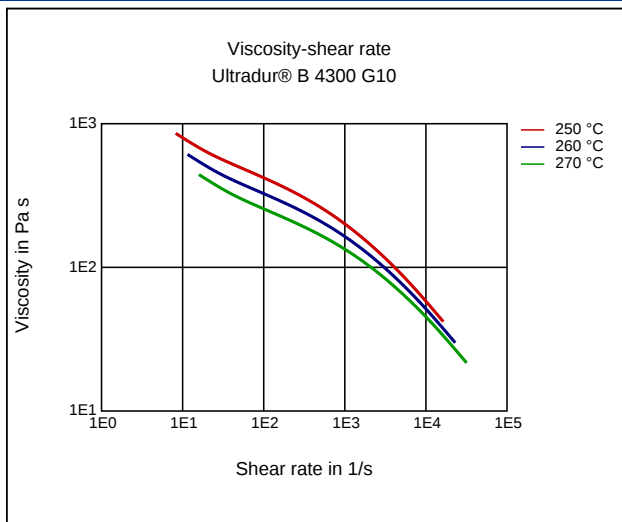
Rheological calculation properties	Value	Unit	Test Standard
ISO Data			
Ejection temperature	185	°C	-

Test specimen production	Value	Unit	Test Standard
ISO Data			
Injection Molding, melt temperature	270	°C	ISO 294
Injection Molding, mold temperature	80	°C	ISO 294
Injection Molding, injection velocity	200	mm/s	ISO 294

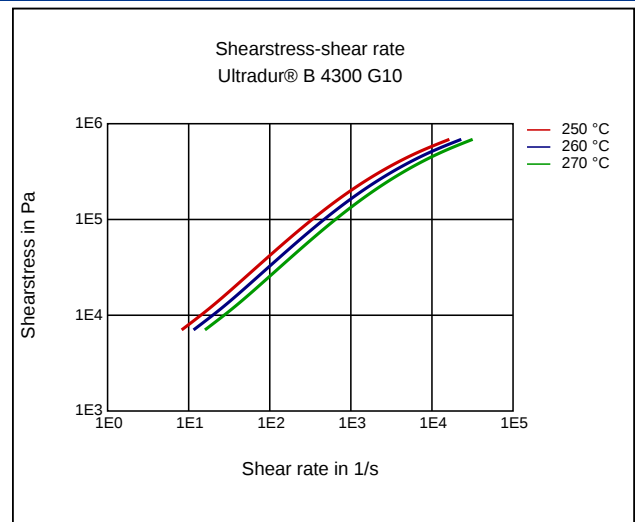
Processing Recommendation Injection Molding	Value	Unit	Test Standard
Pre-drying - Temperature	80 - 120	°C	-
Pre-drying - Time	4	h	-
Processing humidity	≤0.04	%	-
Melt temperature	260 - 275	°C	-
Mold temperature	80 - 120	°C	-

Diagrams

Viscosity-shear rate



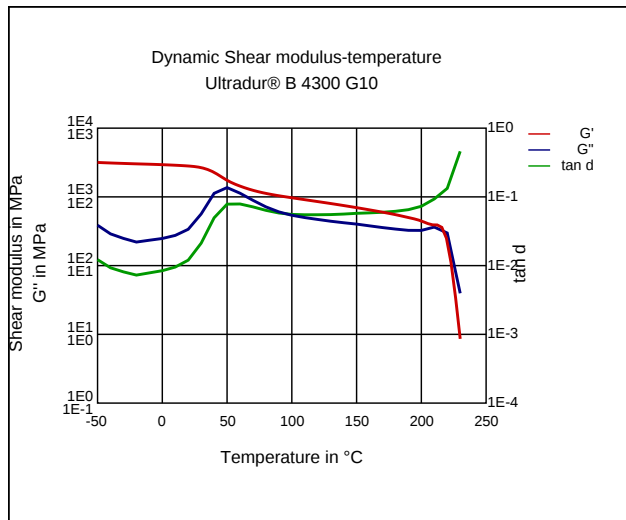
Shearstress-shear rate



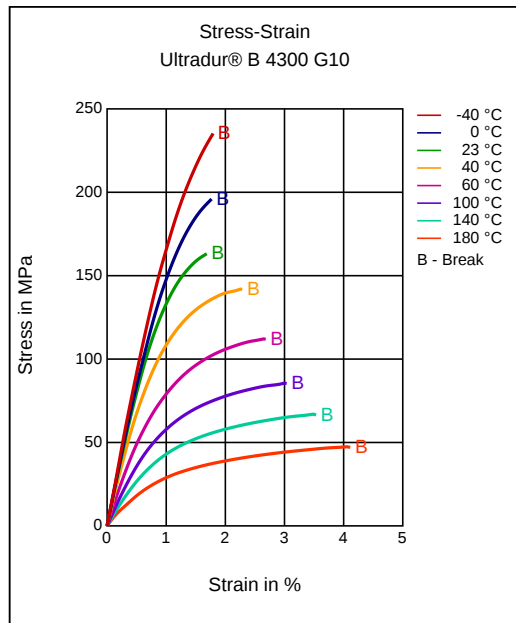
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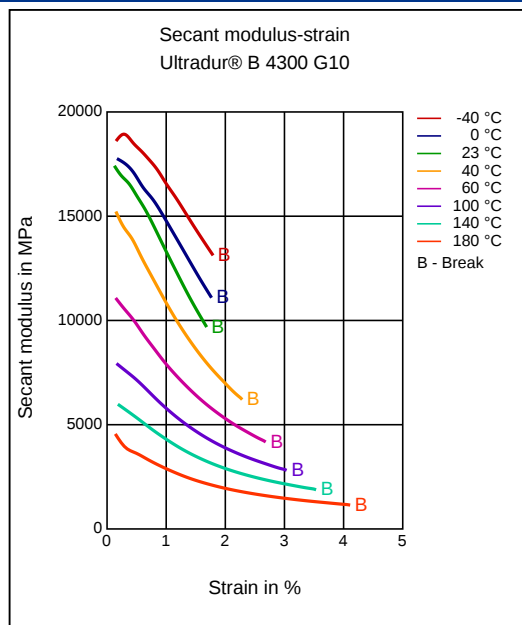
Dynamic Shear modulus-temperature



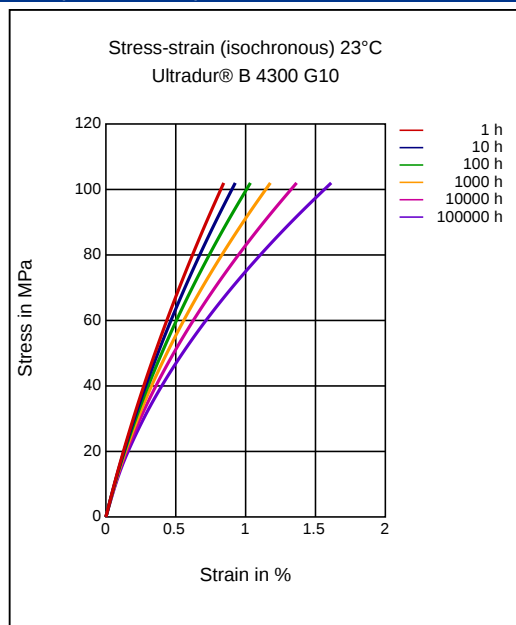
Stress-strain



Secant modulus-strain



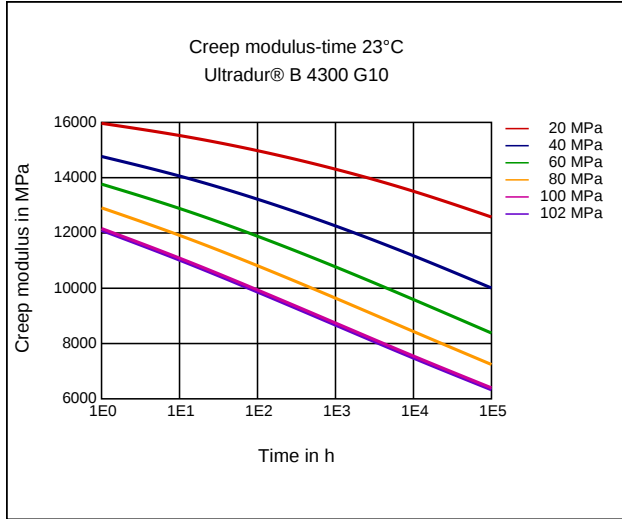
Stress-strain (isochronous) 23 °C



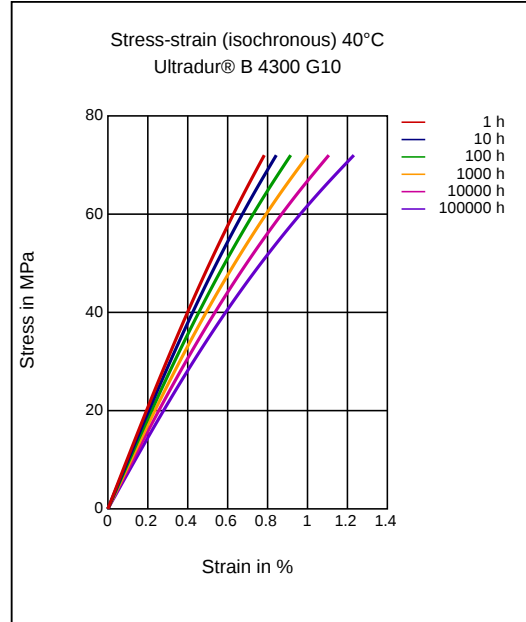
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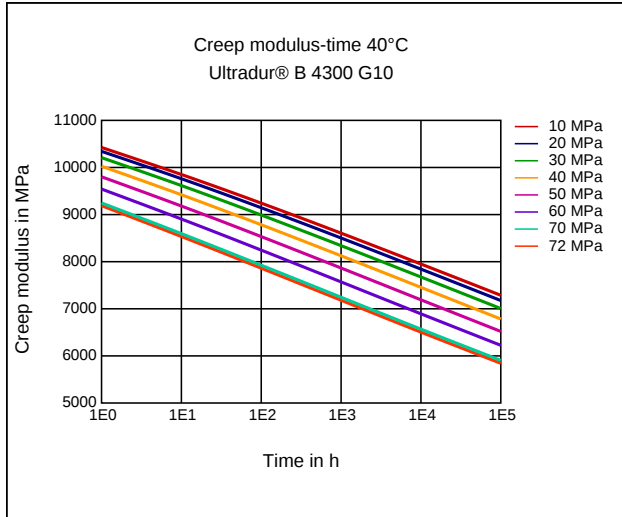
Creep modulus-time 23°C



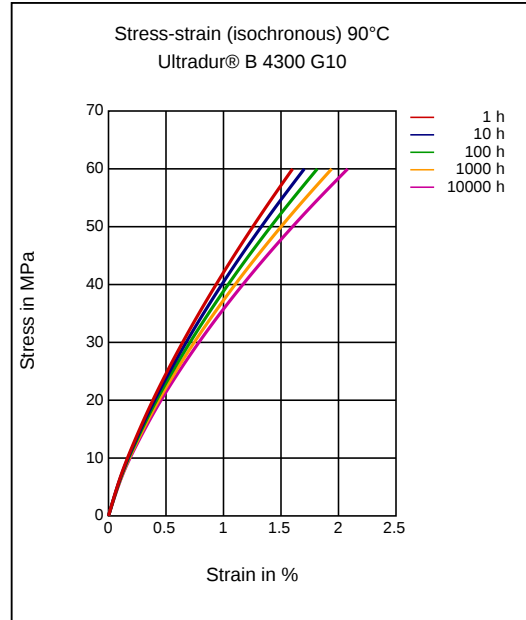
Stress-strain (isochronous) 40°C



Creep modulus-time 40°C



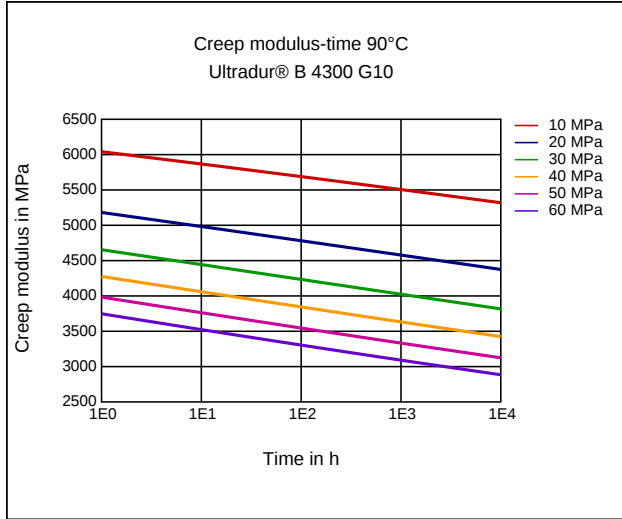
Stress-strain (isochronous) 90°C



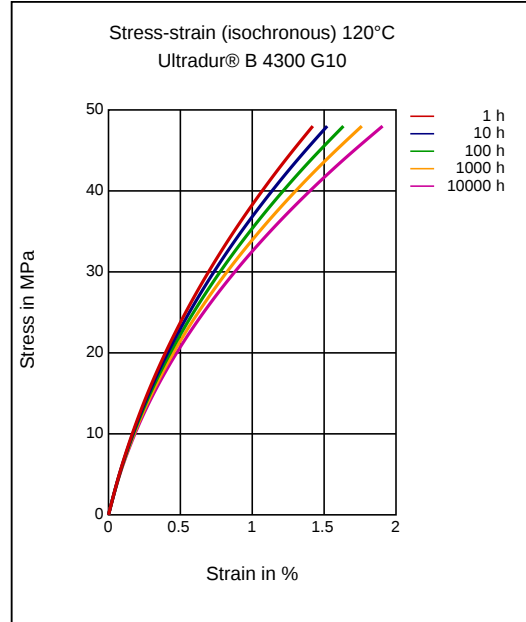
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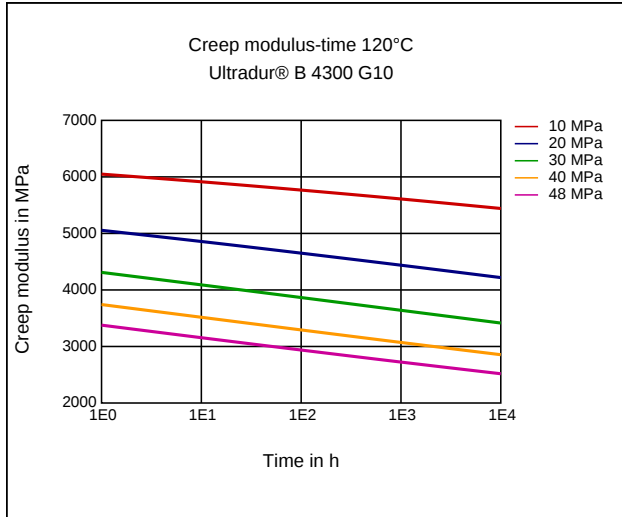
Creep modulus-time 90°C



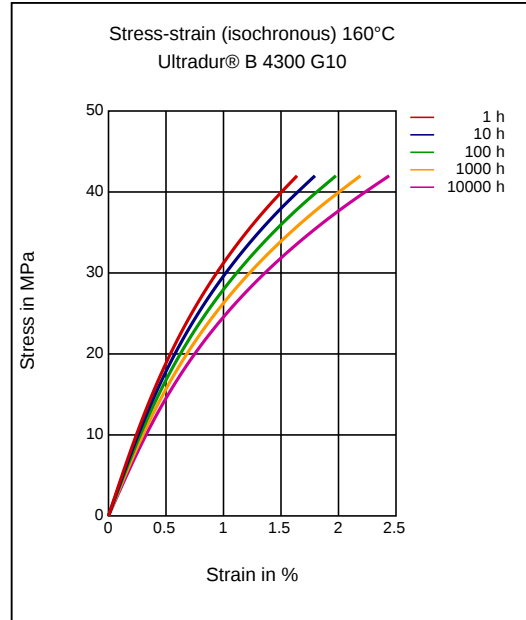
Stress-strain (isochronous) 120°C



Creep modulus-time 120°C



Stress-strain (isochronous) 160°C

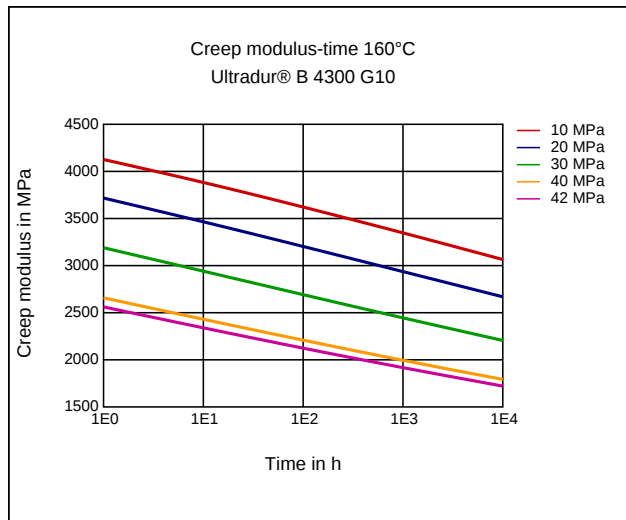


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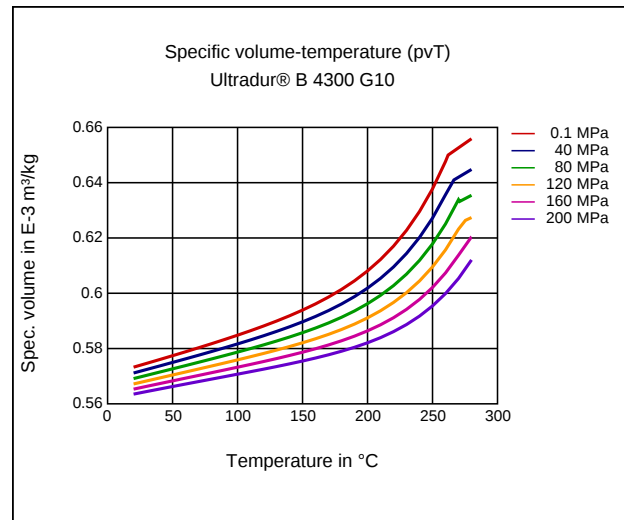
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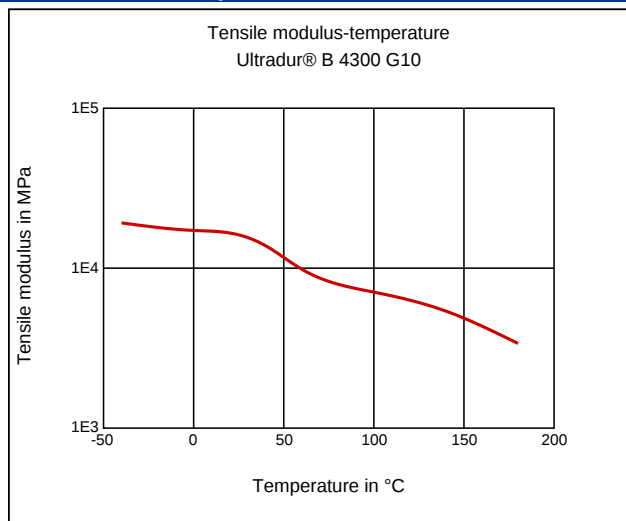
Creep modulus-time 160 °C



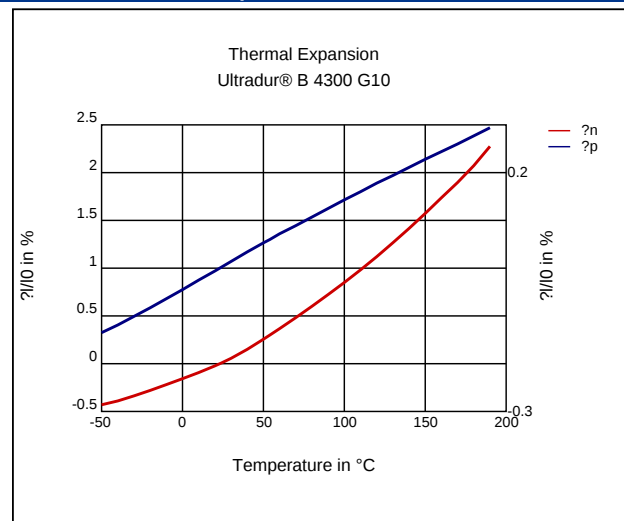
Specific volume-temperature (pvT)



Tensile Modulus-Temperature



Coeff. of linear thermal expansion, normal



Characteristics

Processing

Injection Molding

Delivery form

Pellets

Additives

Lubricants

Special Characteristics

Light stabilized or stable to light, UV stablized, Heat aging stabilized

Injection Molding

PREPROCESSING

Pre/Post-processing, max. allowed water content: .04 %

Pre/Post-processing, Pre-drying, Temperature: 80 - 120 °C

Pre/Post-processing, Pre-drying, Time: 4 h

PROCESSING

injection molding, Melt temperature, range: 260 - 275 °C

injection molding, Melt temperature, recommended: 270 °C

injection molding, Mold temperature, range: 80 - 120 °C

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injection molding, Mold temperature, recommended: 80 °C

Chemical Media Resistance

Acids

- ✓ Acetic Acid (5% by mass) (23°C)