

Ultramid® B3ZG3

PA6-I-GF15

BASF

A reinforced high impact grade, key properties includes balanced property profile of good mechanics, outstanding thermal properties and chemical resistance, easy processability together with good surface aspect for injection moulding. Ease of colouring and particularly suited for consumers applications, including haircare accessories.

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

Rheological properties	dry / cond	Unit	Test Standard
ISO Data			
Melt volume-flow rate, MVR	35 / *	cm³/10min	ISO 1133
Temperature	275 / *	°C	-
Load	5 / *	kg	-
Molding shrinkage, parallel	0.6 / *	%	ISO 294-4, 2577
Molding shrinkage, normal	0.7 / *	%	ISO 294-4, 2577

Mechanical Properties	dry / cond	Unit	Test Standard
ISO Data			
Tensile Modulus	5100 / 2900	MPa	ISO 527
Stress at Break	100 / 60	MPa	ISO 527
Strain at Break	5.3 / 18	%	ISO 527
Impact Strength (Charpy), +23°C	75 / 110	kJ/m²	ISO 179/1eU
Impact Strength (Charpy), -30°C	55 / -	kJ/m²	ISO 179/1eU
Notched Impact Strength (Charpy), +23°C	16 / 30	kJ/m²	ISO 179/1eA
Notched Impact Strength (Charpy), -30°C	7 / -	kJ/m²	ISO 179/1eA

Thermal Properties	dry / cond	Unit	Test Standard
ISO Data			
Melting Temperature (10°C/min)	220 / *	°C	ISO 11357-1/-3
Temp. of deflection under load (1.80 MPa)	180 / *	°C	ISO 75-1/-2
Temp. of deflection under load (0.45 MPa)	200 / *	°C	ISO 75-1/-2
Coeff. of Linear Therm. Expansion, parallel	35 / *	E-6/K	ISO 11359-1/-2
Coeff. of Linear Therm. Expansion, normal	129 / *	E-6/K	ISO 11359-1/-2
Burning Behav. at 1.5 mm Nom. Thickn.	HB / *	class	UL 94
Thickness tested	1.6 / *	mm	-
UL recognition	yes / *	-	-
Burning Behav. at thickness h	HB / *	class	UL 94
Thickness tested	0.7 / *	mm	-
UL recognition	yes / *	-	-

Electrical Properties	dry / cond	Unit	Test Standard
ISO Data			
Relative permittivity, 1MHz	3.7 / 6.2	-	IEC 62631-2-1
Dissipation Factor, 100Hz	250 / -	E-4	IEC 62631-2-1
Dissipation Factor, 1MHz	250 / 2000	E-4	IEC 62631-2-1
Volume Resistivity	1E13 / 1E10	Ohm*m	IEC 62631-3-1
Surface Resistivity	* / 1E10	Ohm	IEC 62631-3-2
Comparative tracking index	- / 600	-	IEC 60112

Other Properties	dry / cond	Unit	Test Standard
ISO Data			
Water Absorption	7.5 / *	%	Sim. to ISO 62
Humidity absorption	2.4 / *	%	Sim. to ISO 62
Density	1220 / -	kg/m³	ISO 1183

Material Specific Properties	dry / cond	Unit	Test Standard
ISO Data			
Viscosity number	160 / *	cm³/g	ISO 307, 1157, 1628

Rheological calculation properties	Value	Unit	Test Standard
ISO Data			
Ejection temperature	150	°C	-

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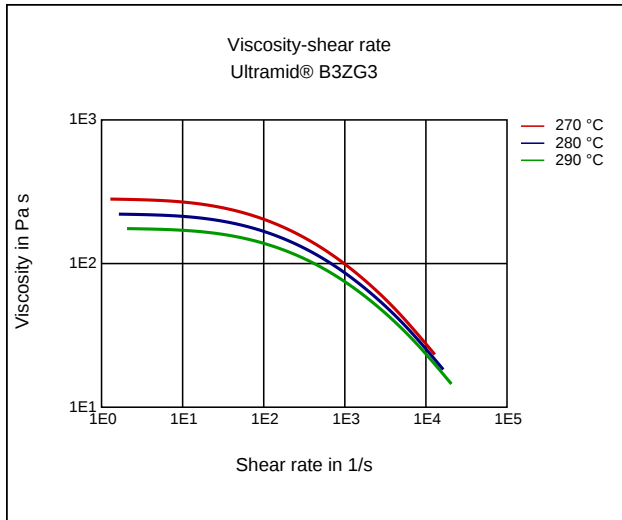
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Test specimen production	Value	Unit	Test Standard
ISO Data			
Injection Molding, melt temperature	280	°C	ISO 294
Injection Molding, mold temperature	80	°C	ISO 294
Injection Molding, injection velocity	200	mm/s	ISO 294

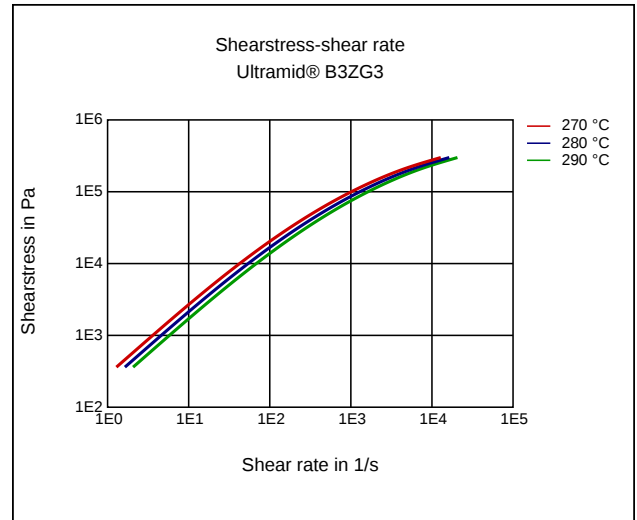
Processing Recommendation Injection Molding	Value	Unit	Test Standard
Pre-drying - Temperature	80	°C	-
Pre-drying - Time	4	h	-
Processing humidity	≤0.15	%	-
Melt temperature	270 - 290	°C	-
Mold temperature	80 - 90	°C	-

Diagrams

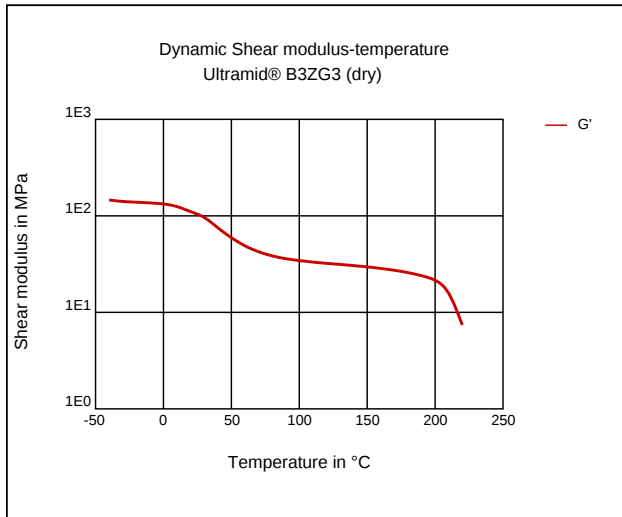
Viscosity-shear rate



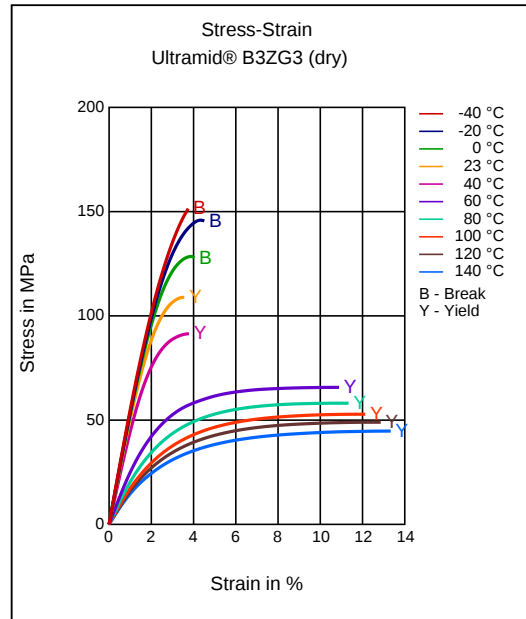
Shearstress-shear rate



Dynamic Shear modulus-temperature



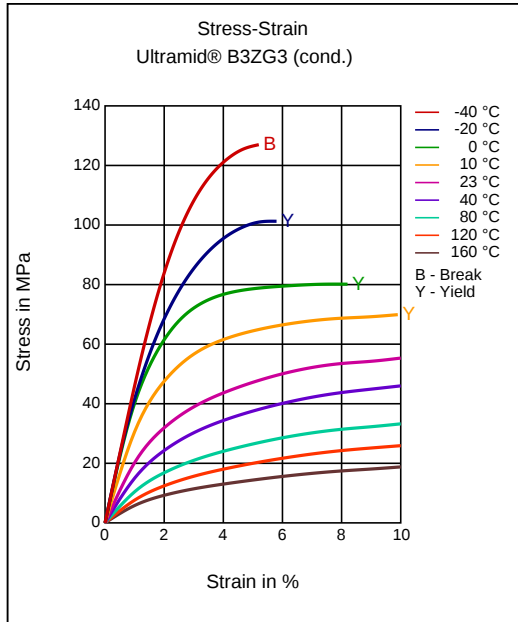
Stress-strain



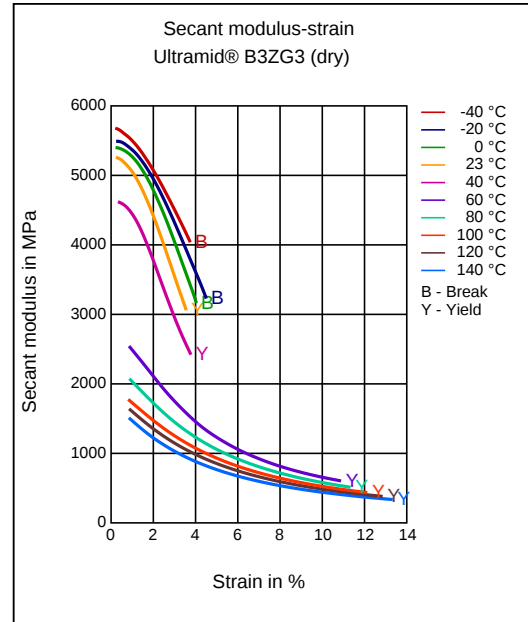
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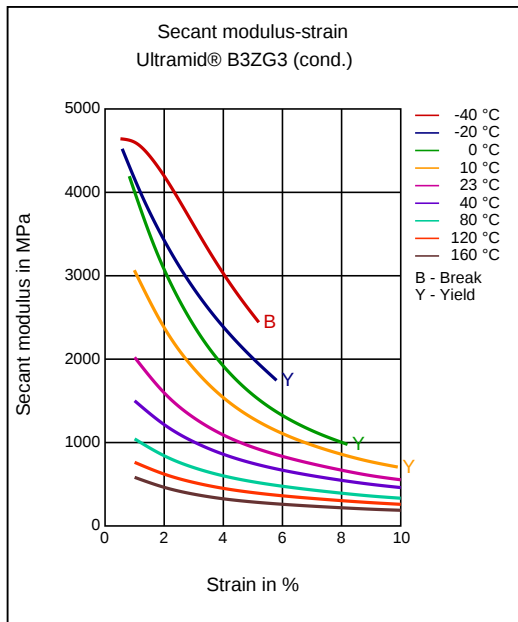
Stress-strain



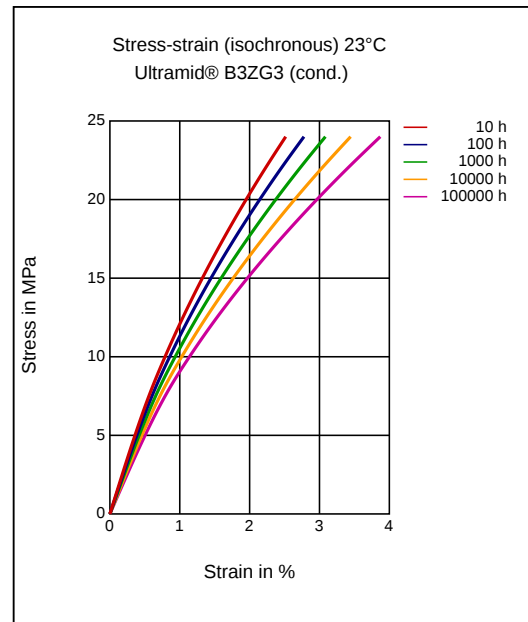
Secant modulus-strain



Secant modulus-strain



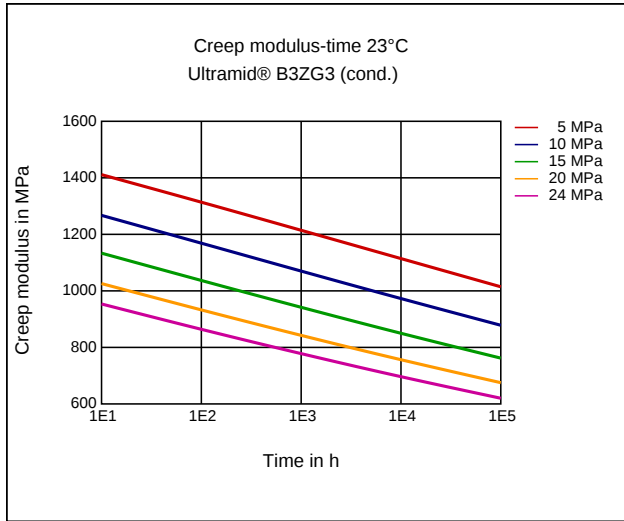
Stress-strain (isochronous) 23 °C



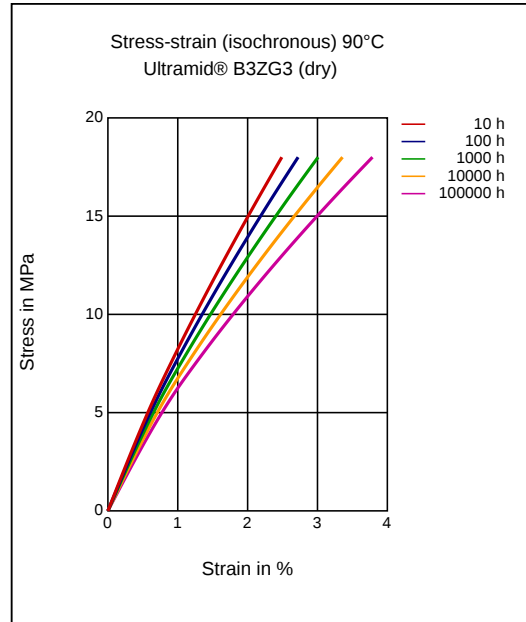
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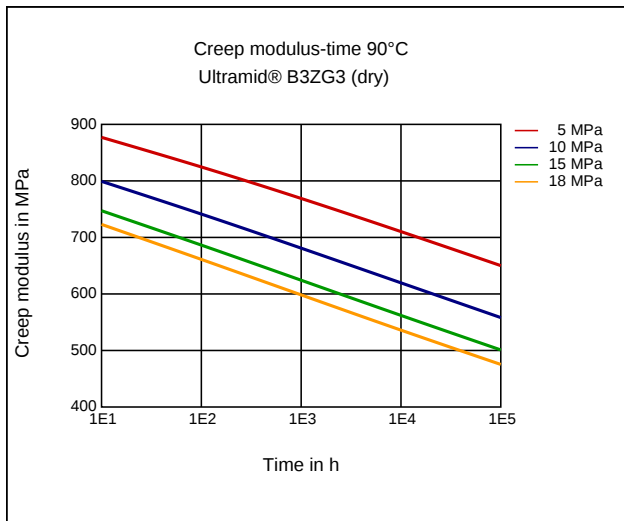
Creep modulus-time 23°C



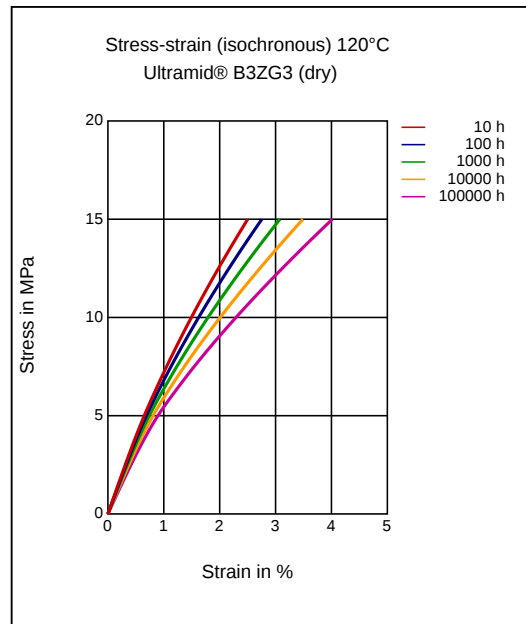
Stress-strain (isochronous) 90°C



Creep modulus-time 90°C



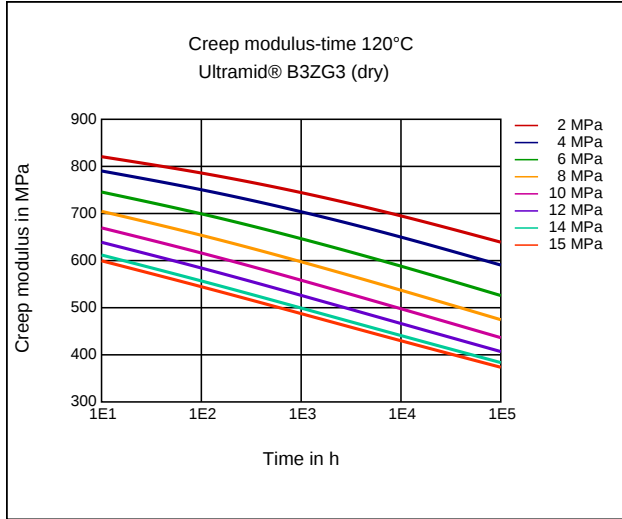
Stress-strain (isochronous) 120°C



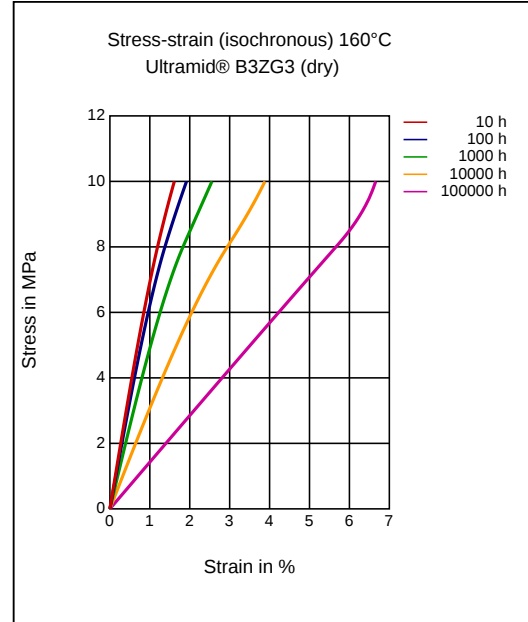
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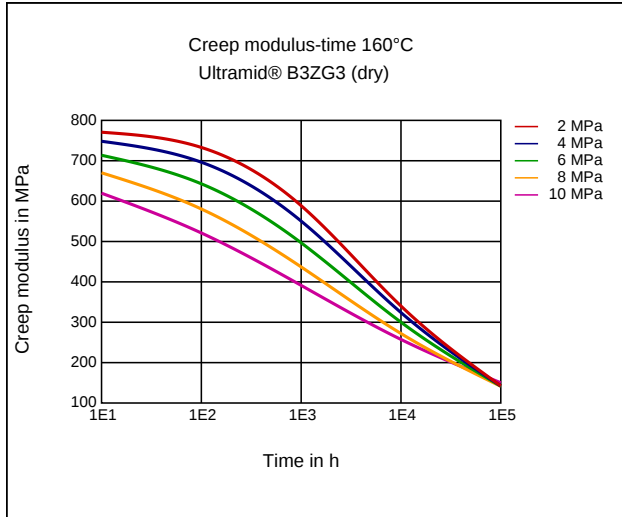
Creep modulus-time 120 °C



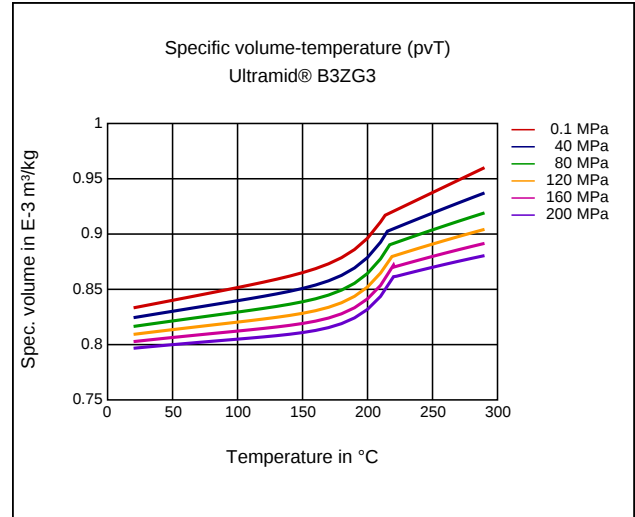
Stress-strain (isochronous) 160 °C



Creep modulus-time 160 °C



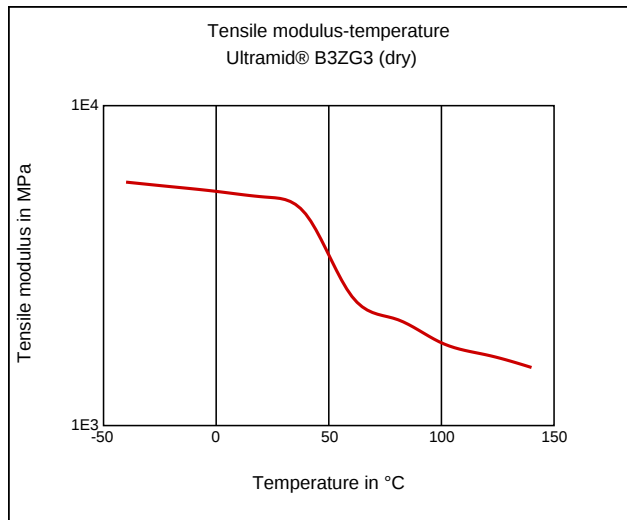
Specific volume-temperature (pvT)



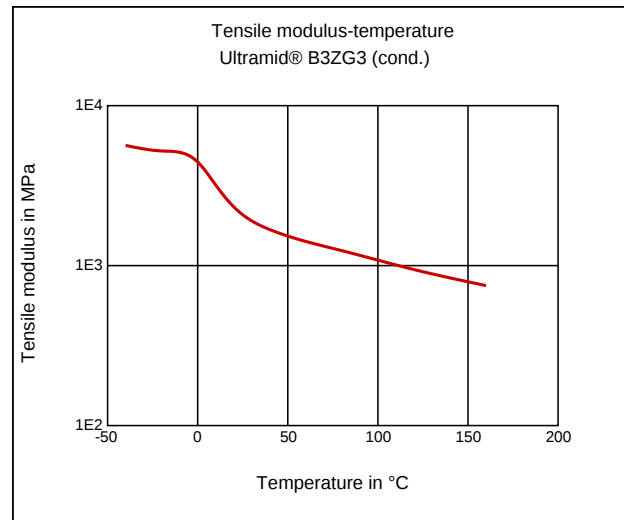
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Tensile Modulus-Temperature



Tensile Modulus-Temperature



Characteristics

Processing

Injection Molding

Delivery form

Pellets

Additives

Lubricants, Release agent

Special Characteristics

Impact modified, Heat aging stabilized

Injection Molding

PREPROCESSING

Pre/Post-processing, max. allowed water content: .15 %

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

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

PROCESSING

injection molding, Melt temperature, range: 270 - 290 °C

injection molding, Melt temperature, recommended: 280 °C

injection molding, Mold temperature, range: 80 - 90 °C

injection molding, Mold temperature, recommended: 80 °C

injection molding, Dwell time, thermoplastics: 10 min

Chemical Media Resistance

Acids

- ✓ Acetic Acid (5% by mass) (23°C)