Ultraform® W2320 003 PRO TR AT

POM BASF

Very free-flowing grade for injection molding with special lubricant to minimize friction,wear, stick-slip and squeaking.

Ultraform® PRO offers a comprehensive service package, which supports customers in product development for the medical technology market.

Additional compliances may also be available. Please contact your local representative or the Ultraplaste Infopoint (E-Mail: ultraplaste.infopoint@basf.com, Telefon: 49 621-60-78780, Fax: 49 621-60-78730).

For notice:
However, BASF has not designed or tested its plastics with respect to all of the special requirements related to their use in medical devices (defined in risk classes I to III according to the European and US Medical Device legislation) and pharmaceutical applications. Therefore BASF makes no warranties, express or implied, concerning the suitability of any BASF plastics for use in any medical device and pharmaceutical applications.

Abbreviated designation according to ISO 1043-1: POM
Designation according to ISO 29988-POM-K,,M-GNRS2,5-2

Rheological properties	Value	Unit	Test Standard
ISO Data			
Melt volume-flow rate, MVR	25	cm³/10min	ISO 1133
Temperature	190	°C	-
Load	2.16	kg	-
Molding shrinkage, parallel	2.0	%	ISO 294-4, 2577
Molding shrinkage, normal	1.9	%	ISO 294-4, 2577

Mechanical Properties	Value	Unit	Test Standard
ISO Data			
Tensile Modulus	2500	MPa	ISO 527
Yield stress	50	MPa	ISO 527
Yield strain	5.5	%	ISO 527
Nominal strain at break	37	%	ISO 527
Impact Strength (Charpy), +23°C	110	kJ/m²	ISO 179/1eU
Impact Strength (Charpy), -30°C	95	kJ/m²	ISO 179/1eU
Notched Impact Strength (Charpy), +23°C	5	kJ/m²	ISO 179/1eA
Notched Impact Strength (Charpy), -30°C	4.4	kJ/m²	ISO 179/1eA

Thermal Properties	Value	Unit	Test Standard
ISO Data			
Melting Temperature (10°C/min)	167	°C	ISO 11357-1/-3
Temp. of deflection under load (1.80 MPa)	92	°C	ISO 75-1/-2
Coeff. of Linear Therm. Expansion, parallel	125	E-6/K	ISO 11359-1/-2

Electrical Properties	Value	Unit	Test Standard
ISO Data			
Relative permittivity, 100Hz	3.5	-	IEC 62631-2-1
Relative permittivity, 1MHz	3.5	-	IEC 62631-2-1
Dissipation Factor, 100Hz	9	E-4	IEC 62631-2-1
Dissipation Factor, 1MHz	55	E-4	IEC 62631-2-1
Volume Resistivity	1E11	Ohm*m	IEC 62631-3-1
Surface Resistivity	1E14	Ohm	IEC 62631-3-2
Comparative tracking index	600	-	IEC 60112

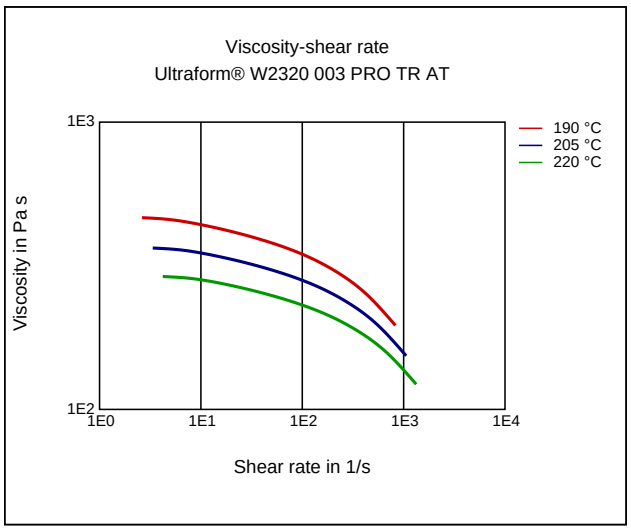
Other Properties	Value	Unit	Test Standard
ISO Data			
Water Absorption	0.8	%	Sim. to ISO 62
Humidity absorption	0.2	%	Sim. to ISO 62
Density	1380	kg/m³	ISO 1183

Test specimen production	Value	Unit	Test Standard
ISO Data			
Injection Molding, melt temperature	200	°C	ISO 294

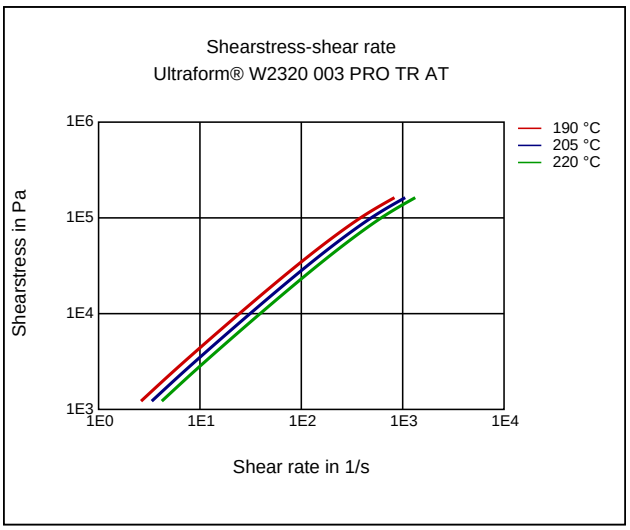
Injection Molding, mold temperature	90	°C	ISO 294
Injection Molding, injection velocity	200	mm/s	ISO 294

Diagrams

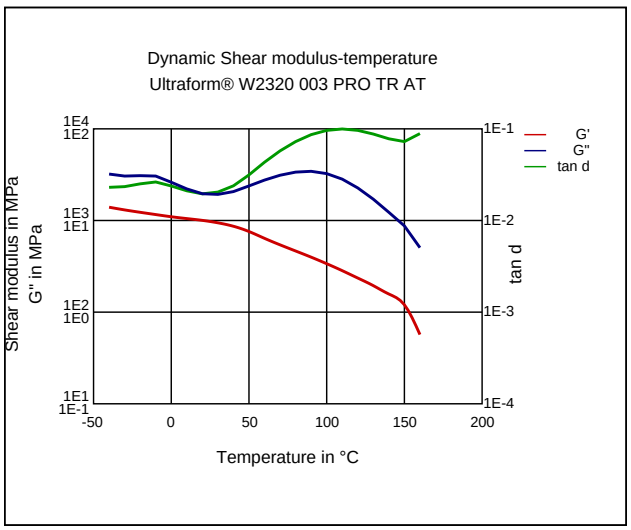
Viscosity-shear rate



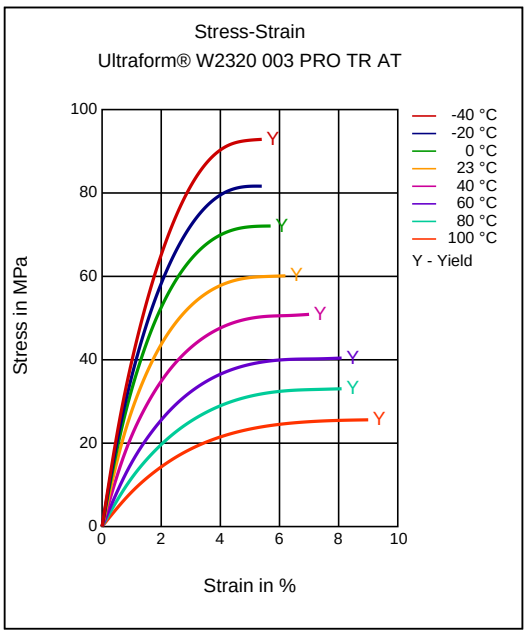
Shearstress-shear rate



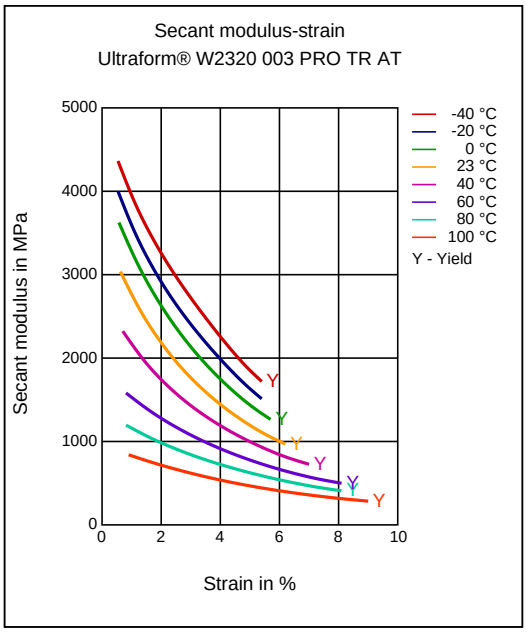
Dynamic Shear modulus-temperature



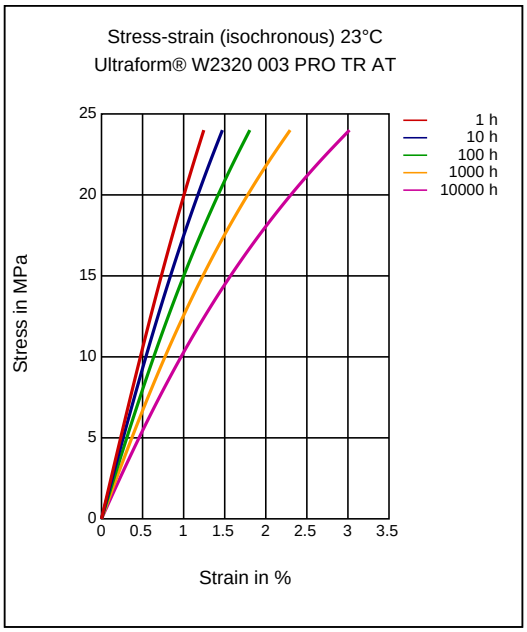
Stress-strain



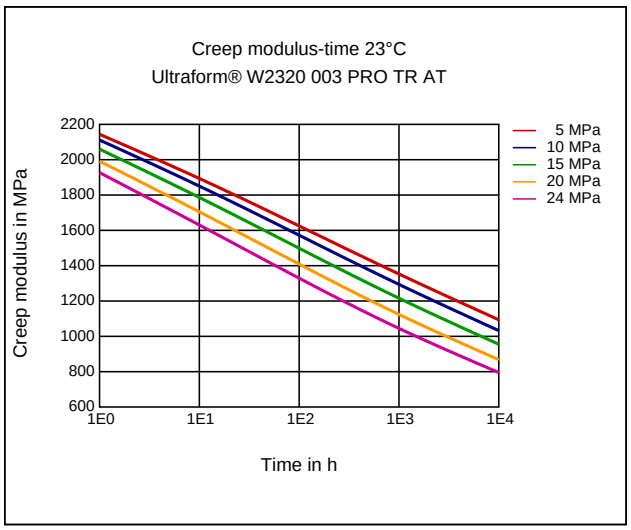
Secant modulus-strain



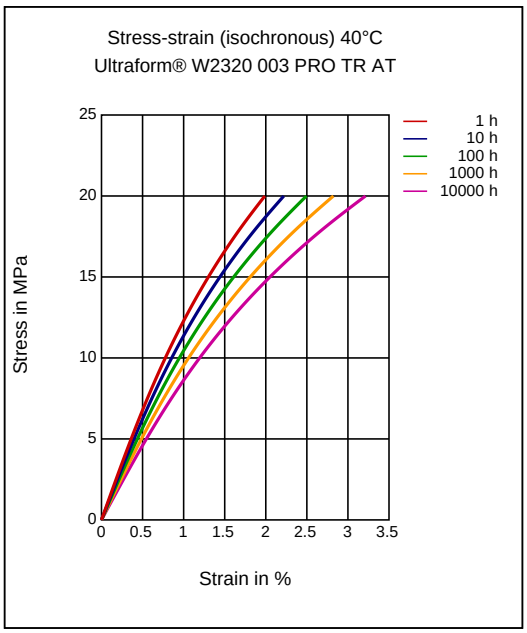
Stress-strain (isochronous) 23 °C



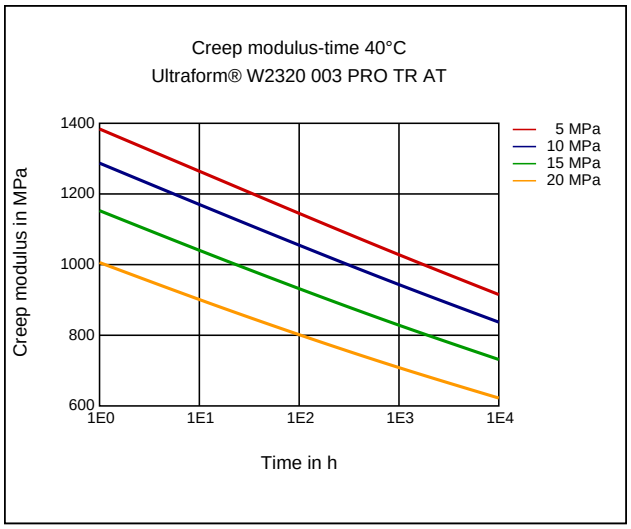
Creep modulus-time 23 °C



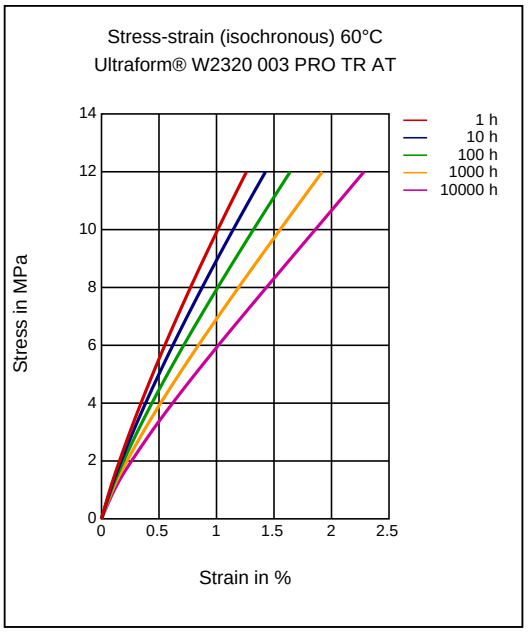
Stress-strain (isochronous) 40 °C



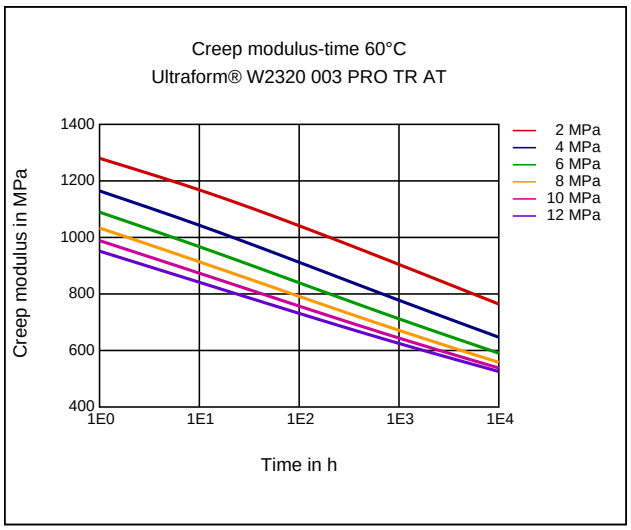
Creep modulus-time 40 °C



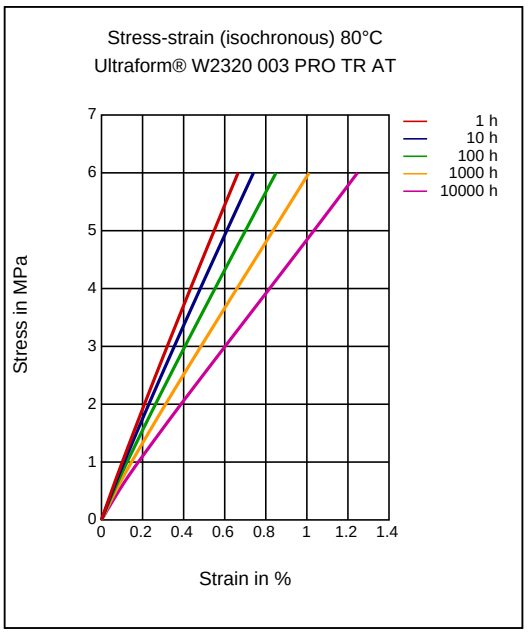
Stress-strain (isochronous) 60 °C



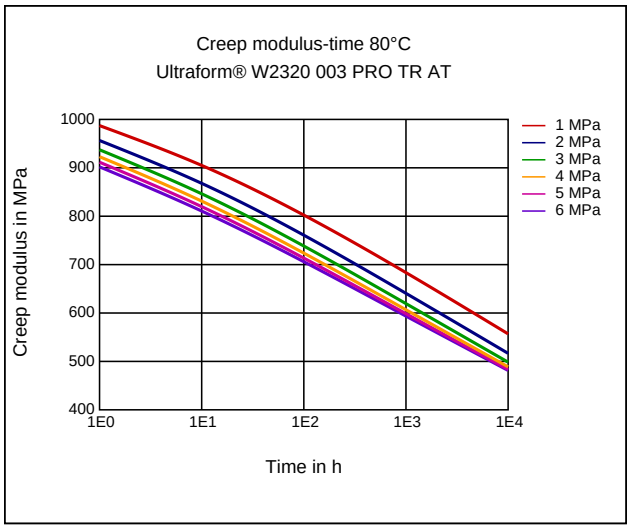
Creep modulus-time 60 °C



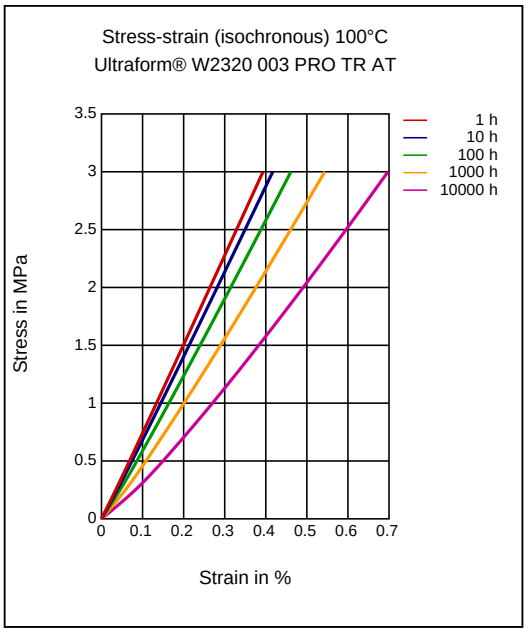
Stress-strain (isochronous) 80 °C



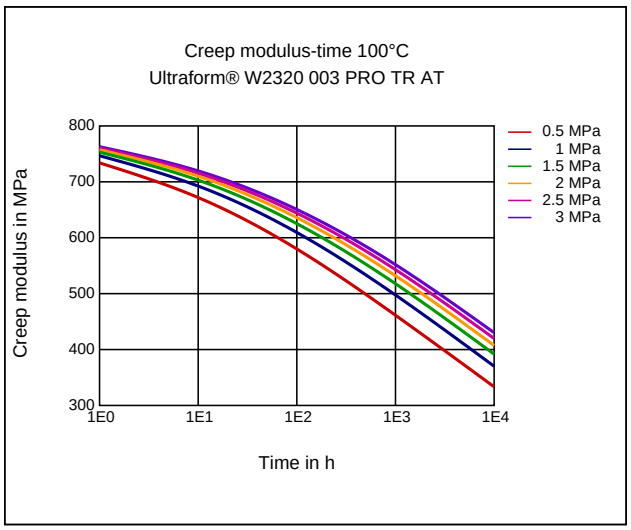
Creep modulus-time 80 °C



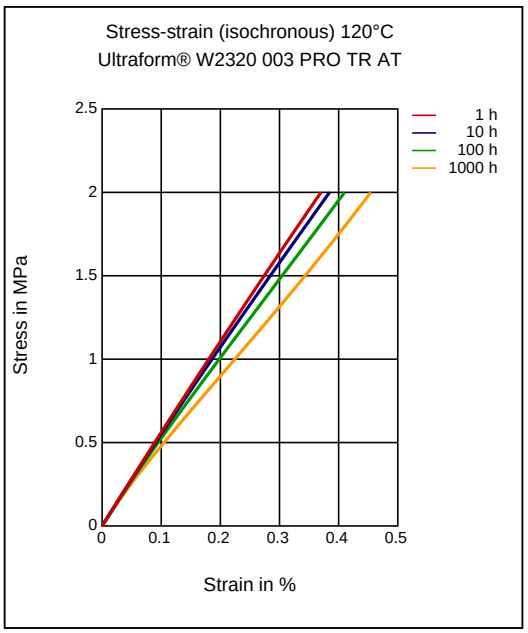
Stress-strain (isochronous) 100 °C



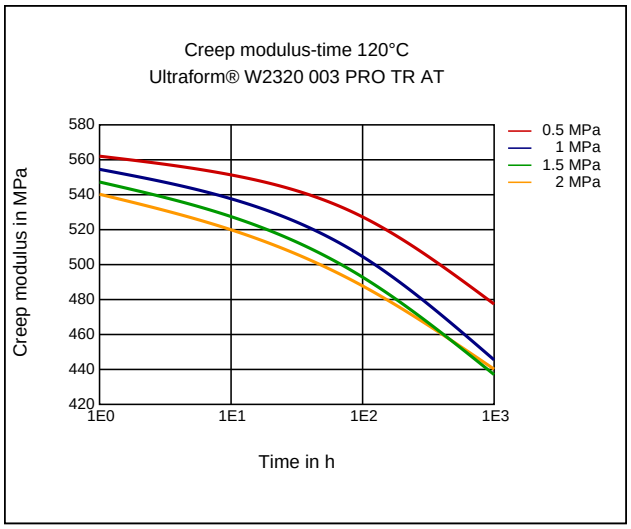
Creep modulus-time 100 °C



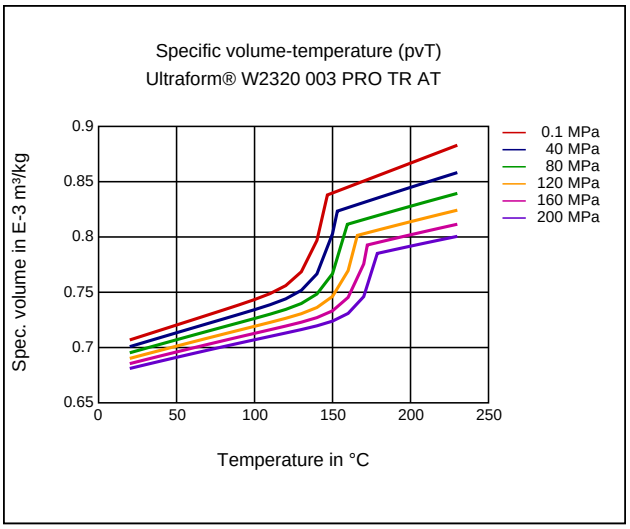
Stress-strain (isochronous) 120 °C



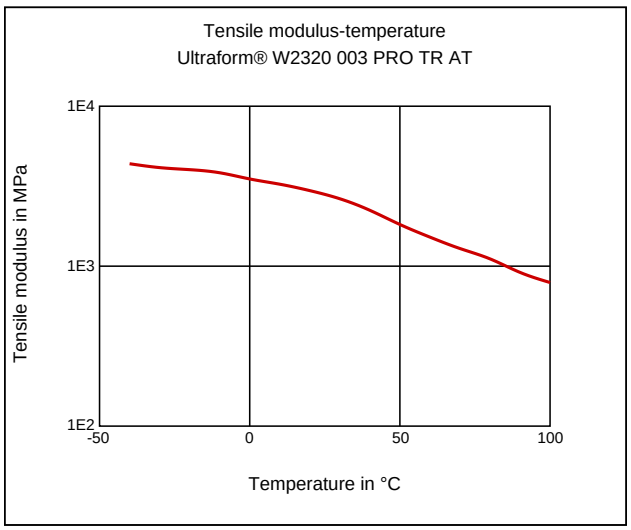
Creep modulus-time 120 °C



Specific volume-temperature (pvT)



Tensile Modulus-Temperature



Characteristics

Processing
Injection Molding

Features
Tribologic Grade

Delivery form
Pellets

Applications
Medical

Additives
Lubricants, Release agent

Injection Molding

PREPROCESSING
Pre/Post-processing, max. allowed water content: .2 %
Pre/Post-processing, Pre-drying, Temperature: 100 °C
Pre/Post-processing, Pre-drying, Time: 3 h

PROCESSING
injection molding, Melt temperature, range: 190 - 230 °C

injection molding, Melt temperature, recommended: 210 °C
injection molding, Mold temperature, range: 60 - 120 °C
injection molding, Mold temperature, recommended: 90 °C
injection molding, Dwell time, thermoplastics: 10 min

Processing

Usual single-flighted three-section screws with an effective screw length of at least 15 D, better 20 - 23 D are suitable for the injection molding of Ultraform.

Pretreatment

Granules or pellets in original packaging can be processed without any special pretreatment. Granules or pellets which have become moist due to prolonged or incorrect storage (e.g. by formation of condensed water) must be dried in dehumidifying or recirculating air dryers for approx. 3 hours at about 100 - 110 °C. The moisture content should not exceed 0.2 %.

Postprocessing

If parts were produced at a comparatively low mold temperature (e.g. in order to obtain short cycle times) and must not change their geometry in use thermal postprocessing inducing dimensional changes by postcrystallization may be necessary. In such cases parts should be stored in an oven with recirculated air at temperatures of 100 - 130 °C until dimensions don't change significantly any further. The time needed for this has to be determined experimentally.

Disclaimer