

Durethan® B31SK 000000
PA6

Envalior

Injection Molding, Unreinforced

ISO 1043 PA6

Rheological properties	dry / cond	Unit	Test Standard
ISO Data			
Melt volume-flow rate, MVR	110 / *	cm ³ /10min	ISO 1133
Temperature	260 / *	°C	-
Load	5 / *	kg	-

Mechanical Properties	dry / cond	Unit	Test Standard
ISO Data			
Tensile Modulus	3500 / 1100	MPa	ISO 527
Yield stress	85 / 50	MPa	ISO 527
Yield strain	4 / 20	%	ISO 527
Nominal strain at break	10 / >50	%	ISO 527
Tensile Creep Modulus, 1h	* / 900	MPa	ISO 899-1
Tensile Creep Modulus, 1000h	* / 700	MPa	ISO 899-1
Impact Strength (Charpy), +23°C	no break / no break	kJ/m ²	ISO 179/1eU
Impact Strength (Charpy), -30°C	no break / no break	kJ/m ²	ISO 179/1eU
Notched Impact Strength (Charpy), +23°C	- / 25	kJ/m ²	ISO 179/1eA
Notched Impact Strength (Charpy), -30°C	- / 10	kJ/m ²	ISO 179/1eA
Puncture - maximum force, +23°C	6100 / -	N	ISO 6603-2
Puncture - maximum force, -30°C	6800 / -	N	ISO 6603-2
Puncture energy, +23°C	65 / -	J	ISO 6603-2
Puncture energy, -30°C	70 / -	J	ISO 6603-2

Thermal Properties	dry / cond	Unit	Test Standard
ISO Data			
Melting Temperature (10°C/min)	222 / *	°C	ISO 11357-1/-3
Temp. of deflection under load (1.80 MPa)	60 / *	°C	ISO 75-1/-2
Temp. of deflection under load (0.45 MPa)	170 / *	°C	ISO 75-1/-2
Coeff. of Linear Therm. Expansion, parallel	70 / *	E-6/K	ISO 11359-1/-2
Coeff. of Linear Therm. Expansion, normal	90 / *	E-6/K	ISO 11359-1/-2
Burning Behav. at 1.5 mm Nom. Thickn.	V-2 / *	class	UL 94
Thickness tested	1.5 / *	mm	-
Oxygen index	25 / *	%	ISO 4589-1/-2

Electrical Properties	dry / cond	Unit	Test Standard
ISO Data			
Relative permittivity, 100Hz	4 / 13	-	IEC 62631-2-1
Relative permittivity, 1MHz	3.5 / 4	-	IEC 62631-2-1
Dissipation Factor, 100Hz	60 / 1900	E-4	IEC 62631-2-1
Dissipation Factor, 1MHz	200 / 1000	E-4	IEC 62631-2-1
Volume Resistivity	1E13 / 1E10	Ohm*m	IEC 62631-3-1
Surface Resistivity	* / 1E14	Ohm	IEC 62631-3-2
Electric Strength	30 / 30	kV/mm	IEC 60243-1
Comparative tracking index	600 / -	-	IEC 60112

Other Properties	dry / cond	Unit	Test Standard
ISO Data			
Water Absorption	10 / *	%	Sim. to ISO 62
Humidity absorption	3 / *	%	Sim. to ISO 62
Density	1140 / -	kg/m ³	ISO 1183

Material Specific Properties	dry / cond	Unit	Test Standard
ISO Data			
Viscosity number	138 / *	cm ³ /g	ISO 307, 1157, 1628

Durethan® B31SK 000000
PA6

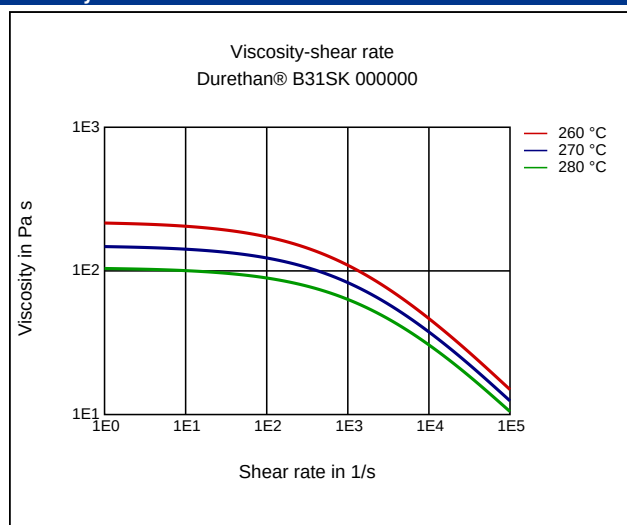
Envalior

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

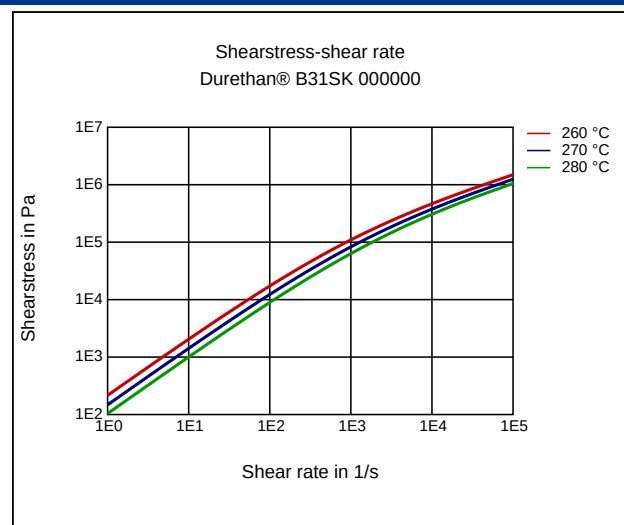
Processing Recommendation Injection Molding	Value	Unit	Test Standard
Pre-drying - Temperature	80	°C	-
Pre-drying - Time	2 - 6	h	-
Processing humidity	≤0.12	%	-
Melt temperature	260 - 280	°C	-
Mold temperature	80 - 100	°C	-

Diagrams

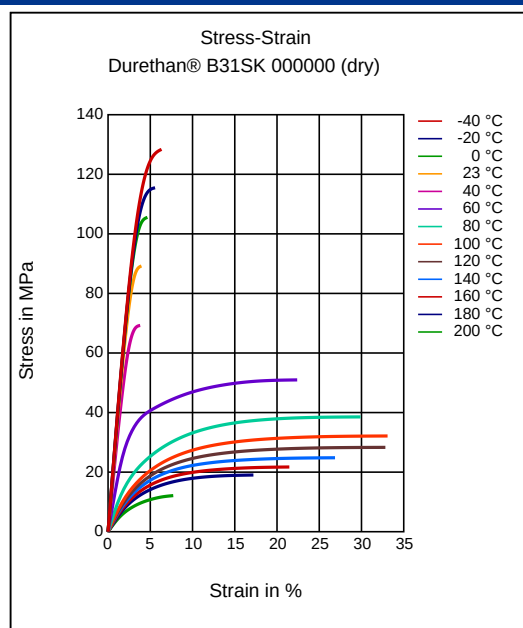
Viscosity-shear rate



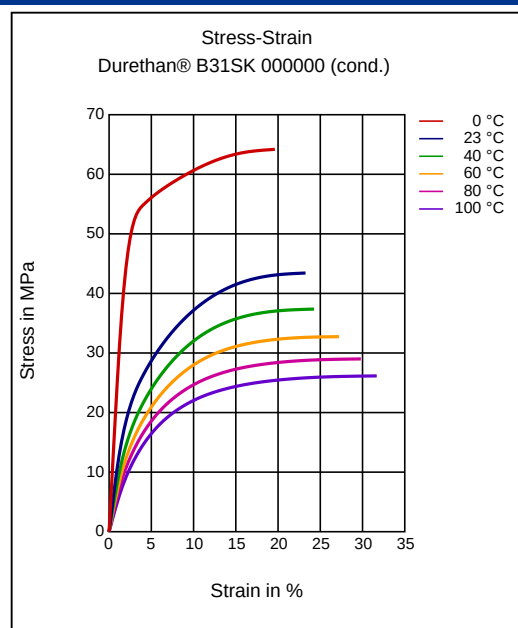
Shearstress-shear rate



Stress-strain



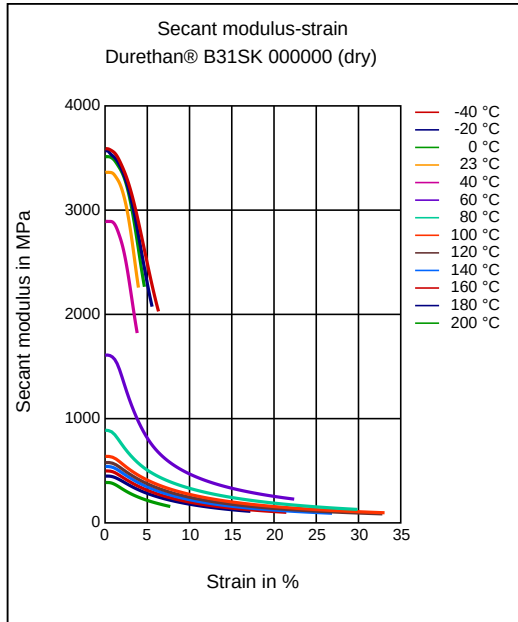
Stress-strain



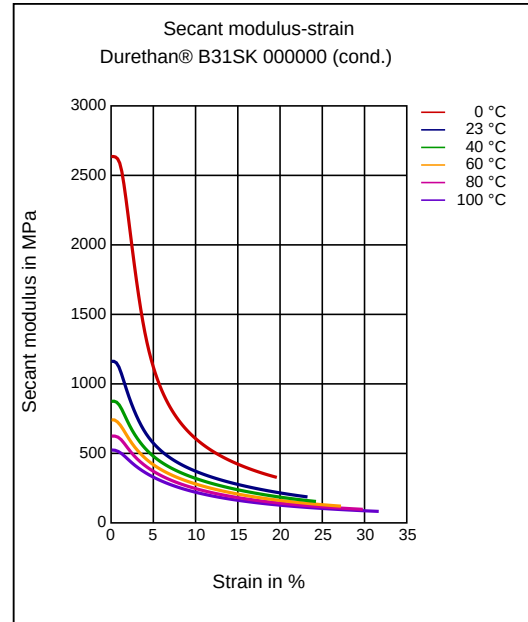
Durethan® B31SK 000000
PA6

Envalior

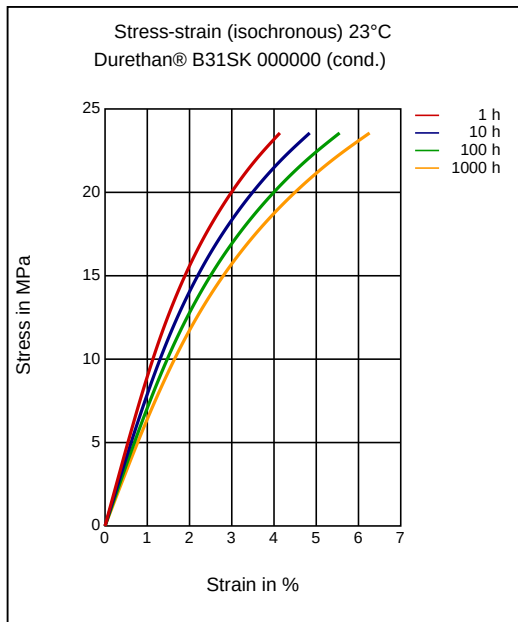
Secant modulus-strain



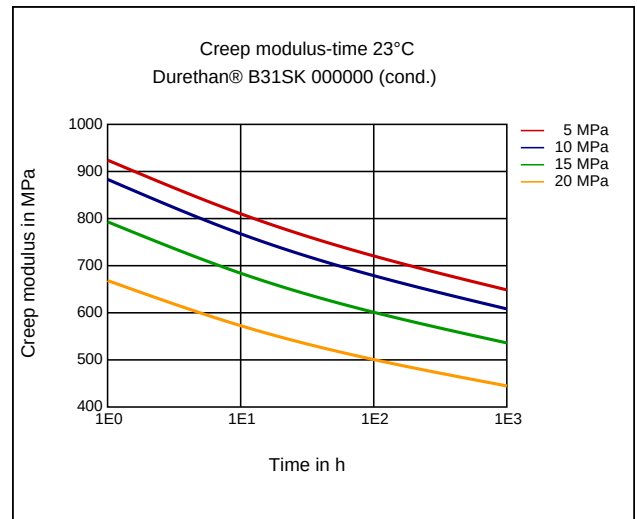
Secant modulus-strain



Stress-strain (isochronous) 23 °C



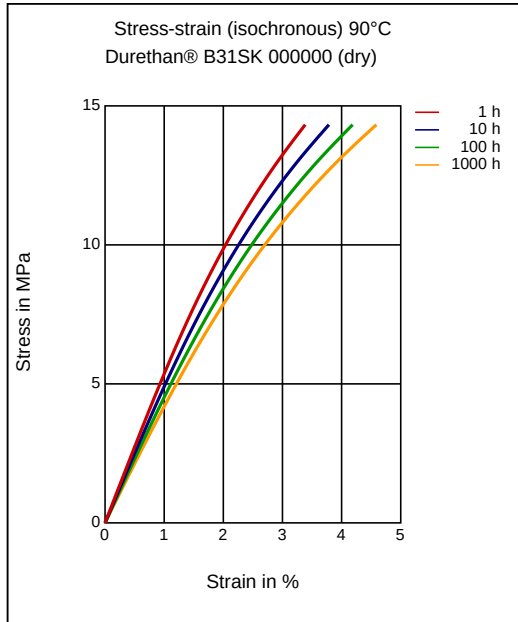
Creep modulus-time 23 °C



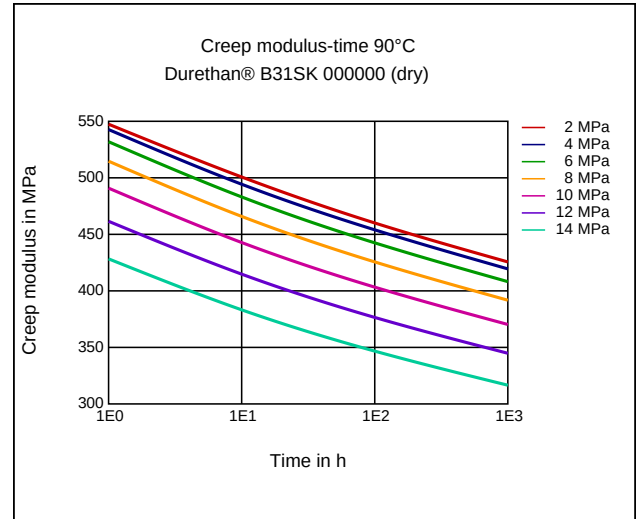
Durethan® B31SK 000000
PA6

Envalior

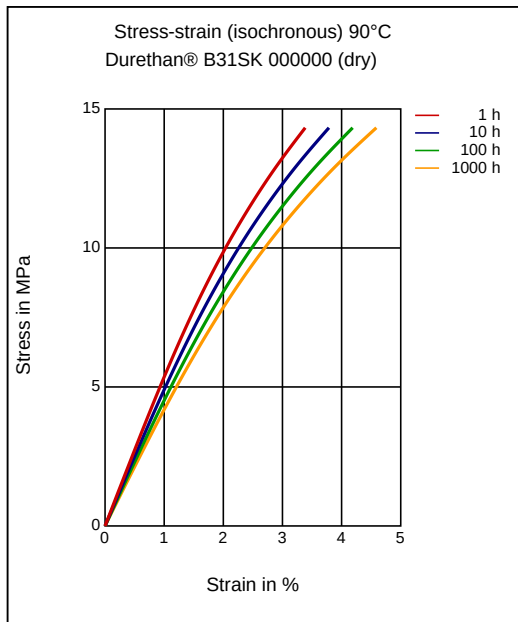
Stress-strain (isochronous) 90 °C



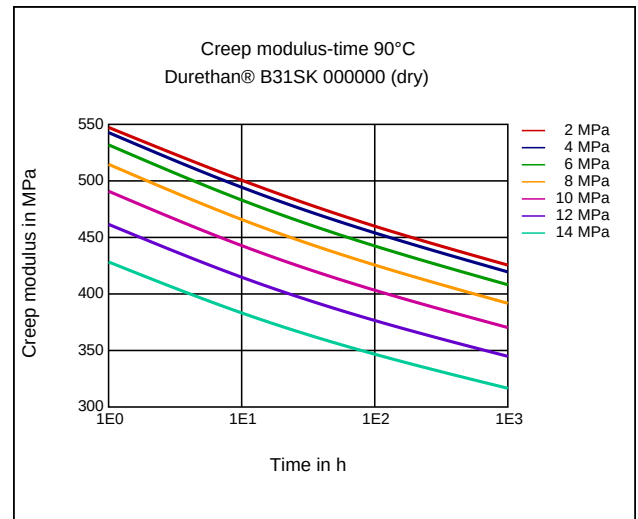
Creep modulus-time 90 °C



Stress-strain (isochronous) 90 °C



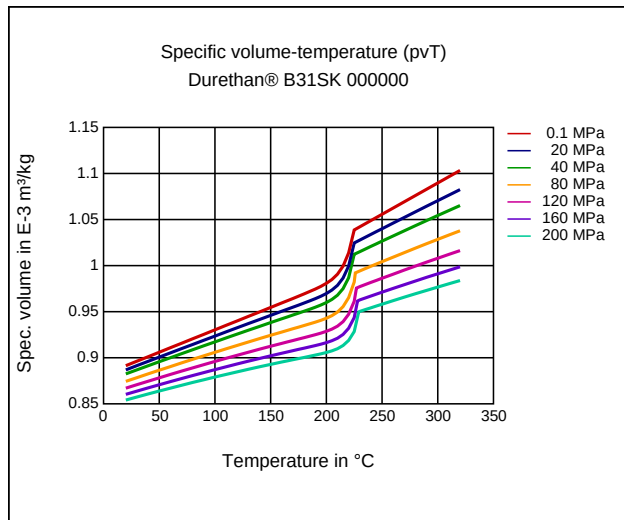
Creep modulus-time 90 °C



Durethan® B31SK 000000
PA6

Envalior

Specific volume-temperature (pvT)



Characteristics

Processing

Injection Molding

Delivery form

Pellets

Injection Molding

PREPROCESSING

Residual moisture content: 0.03 - 0.12%

Drying temperature dry air dryer: 80 °C

Drying time dry air dryer 2 - 6 h

PROCESSING

Melt temperature (Tmin - Tmax): 260 - 280 °C

Mold temperature: 80 - 100 °C