

Durethan® AKV 30 H3.0

PA66-GF30

Envalior

PA 66, 30 % glass fibres, injection moulding

ISO Shortname: ISO 1874-PA 66, GHR, 14-090, GF30

Rheological properties	dry / cond	Unit	Test Standard
ISO Data			
Molding shrinkage, parallel	0.4 / *	%	ISO 294-4, 2577
Molding shrinkage, normal	1.1 / *	%	ISO 294-4, 2577

Mechanical Properties	dry / cond	Unit	Test Standard
ISO Data			
Tensile Modulus	9500 / 6000	MPa	ISO 527
Stress at Break	185 / 115	MPa	ISO 527
Strain at Break	3.5 / 6.5	%	ISO 527
Impact Strength (Charpy), +23°C	75 / 90	kJ/m ²	ISO 179/1eU
Impact Strength (Charpy), -30°C	60 / 60	kJ/m ²	ISO 179/1eU
Notched Impact Strength (Charpy), +23°C	10 / 15	kJ/m ²	ISO 179/1eA
Notched Impact Strength (Charpy), -30°C	10 / 10	kJ/m ²	ISO 179/1eA
Puncture - maximum force, +23°C	1000 / 1100	N	ISO 6603-2
Puncture - maximum force, -30°C	800 / -	N	ISO 6603-2
Puncture energy, +23°C	2.5 / 4.2	J	ISO 6603-2
Puncture energy, -30°C	1.9 / -	J	ISO 6603-2
Flexural Modulus (23°C)	9200 / 5500	MPa	ISO 178
Notched Impact Strength (Izod), 23°C	10 / 15	kJ/m ²	ISO 180/1A
Notched Impact Strength (Izod)	10 / 10	kJ/m ²	ISO 180/1A
Temperature	-30	°C	-
Impact Strength (Izod), 23°C	65 / 70	kJ/m ²	ISO 180/1U
Ball Indentation Hardness	230 / 130	MPa	ISO 2039-1

Thermal Properties	dry / cond	Unit	Test Standard
ISO Data			
Melting Temperature (10°C/min)	262 / *	°C	ISO 11357-1/-3
Temp. of deflection under load (1.80 MPa)	240 / *	°C	ISO 75-1/-2
Temp. of deflection under load (0.45 MPa)	250 / *	°C	ISO 75-1/-2
Temp. of deflection under load, 8.00 MPa	185 / *	°C	ISO 75-1/-2
Vicat softening temperature, 50°C/h 50N	230 / *	°C	ISO 306
Coeff. of Linear Therm. Expansion, parallel	30 / *	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.	HB / *	class	UL 94
Thickness tested	1.6 / *	mm	-
Burning Behav. at thickness h	HB / *	class	UL 94
Thickness tested	3.2 / *	mm	-

Electrical Properties	dry / cond	Unit	Test Standard
ISO Data			
Relative permittivity, 100Hz	4.5 / -	-	IEC 62631-2-1
Relative permittivity, 1MHz	4 / -	-	IEC 62631-2-1
Dissipation Factor, 100Hz	100 / -	E-4	IEC 62631-2-1
Dissipation Factor, 1MHz	180 / -	E-4	IEC 62631-2-1
Volume Resistivity	1E13 / -	Ohm*m	IEC 62631-3-1
Electric Strength	40 / -	kV/mm	IEC 60243-1
Comparative tracking index	525 / -	-	IEC 60112

Other Properties	dry / cond	Unit	Test Standard
ISO Data			
Water Absorption	5.5 / *	%	Sim. to ISO 62
Humidity absorption	1.9 / *	%	Sim. to ISO 62
Density	1360 / -	kg/m ³	ISO 1183
Bulk density	700	kg/m ³	-

Rheological calculation properties	Value	Unit	Test Standard
ISO Data			

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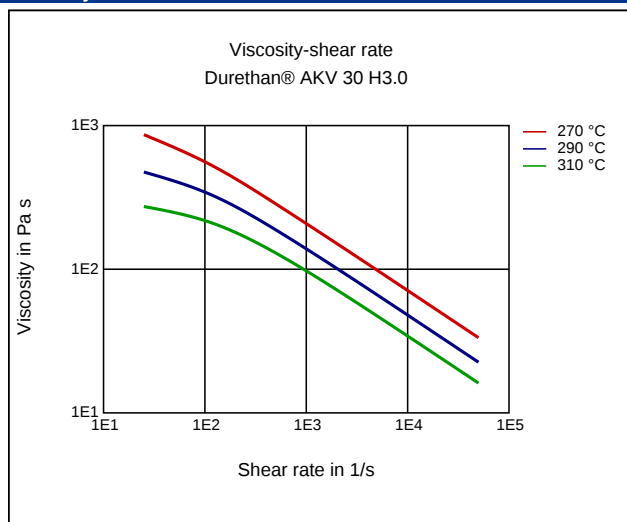
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Density of melt	1160	kg/m ³	-
Thermal Conductivity of Melt	0.256	W/(m K)	-
Spec. heat capacity of melt	2280	J/(kg K)	-
Eff. thermal diffusivity	9.73E-8	m ² /s	-
Ejection temperature	185	°C	-

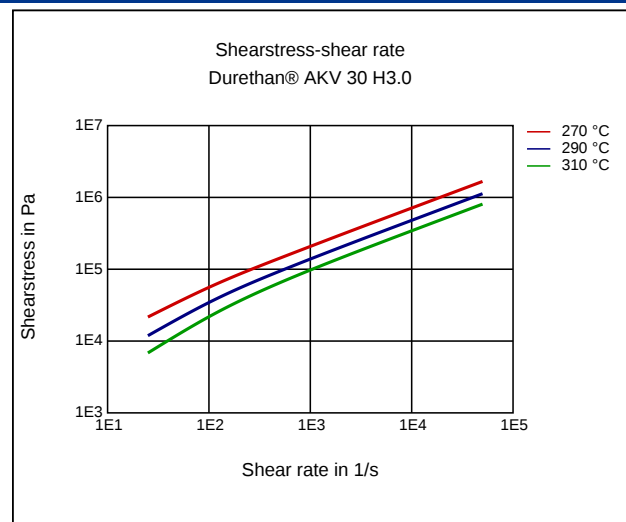
Test specimen production	Value	Unit	Test Standard
ISO Data			
Injection Molding, melt temperature	290	°C	ISO 294
Injection Molding, mold temperature	80	°C	ISO 294

Diagrams

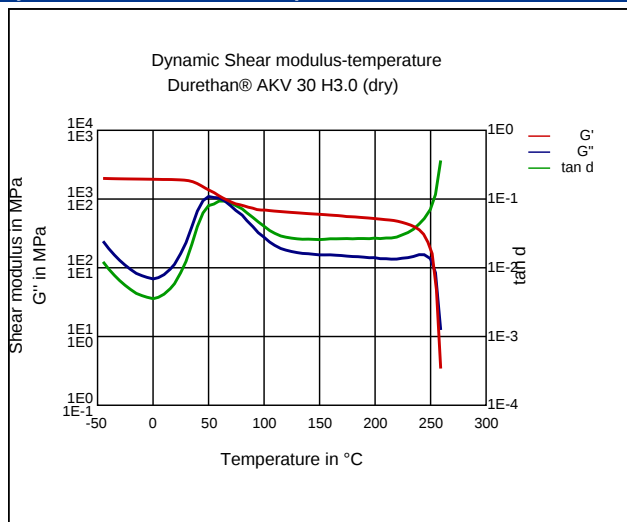
Viscosity-shear rate



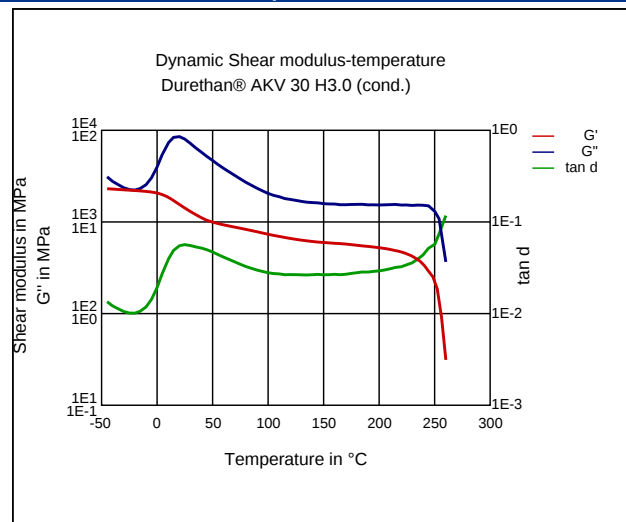
Shearstress-shear rate



Dynamic Shear modulus-temperature



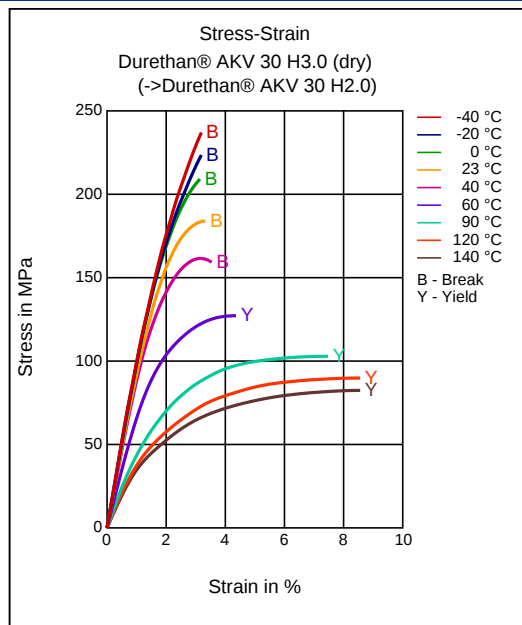
Dynamic Shear modulus-temperature



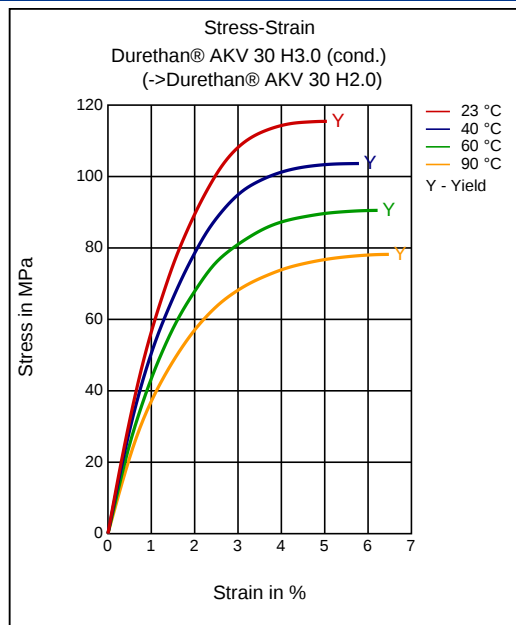
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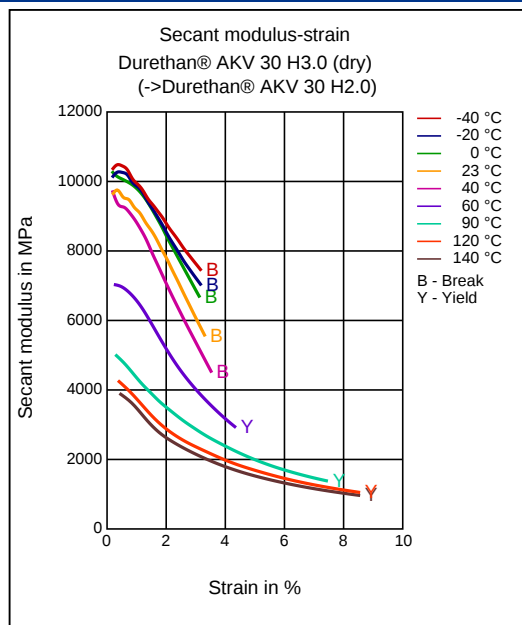
Stress-strain



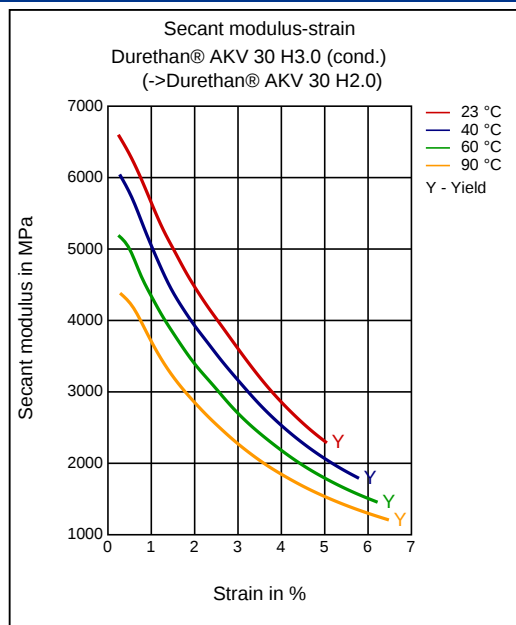
Stress-strain



Secant modulus-strain



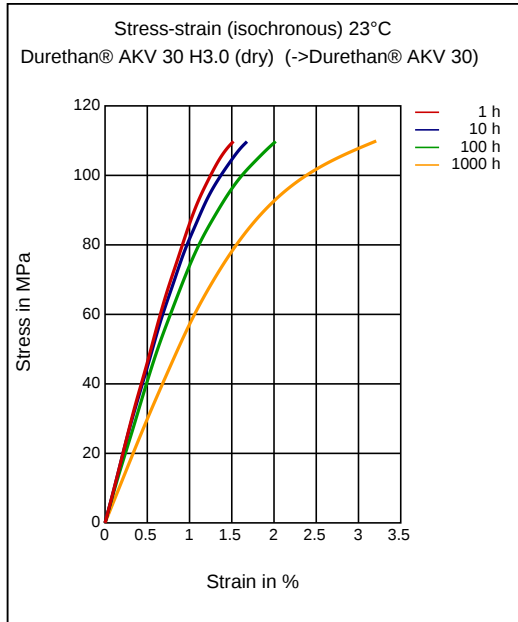
Secant modulus-strain



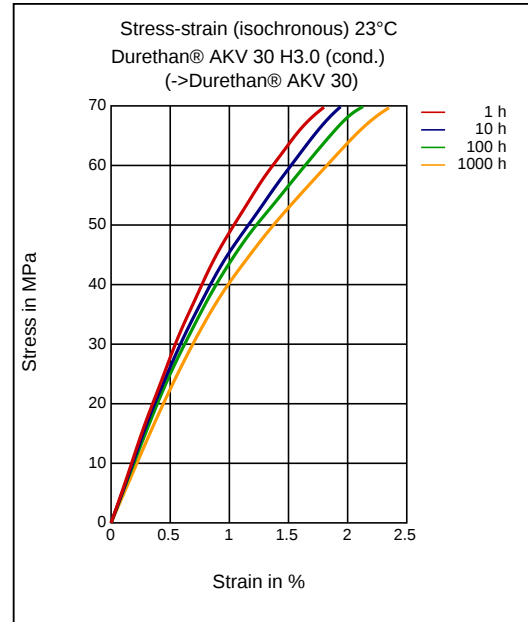
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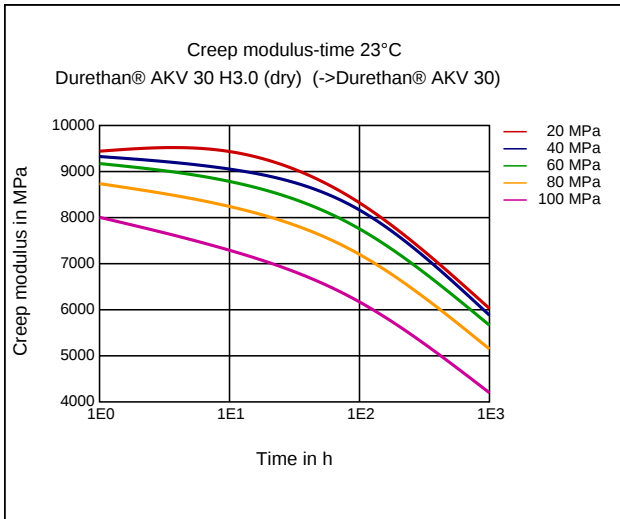
Stress-strain (isochronous) 23°C



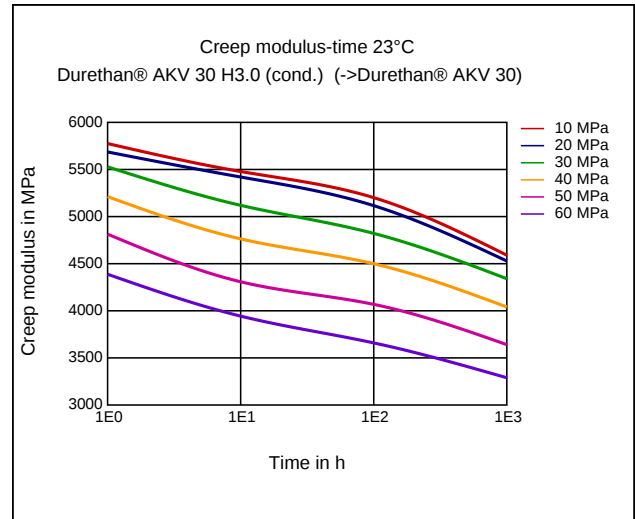
Stress-strain (isochronous) 23°C



Creep modulus-time 23°C



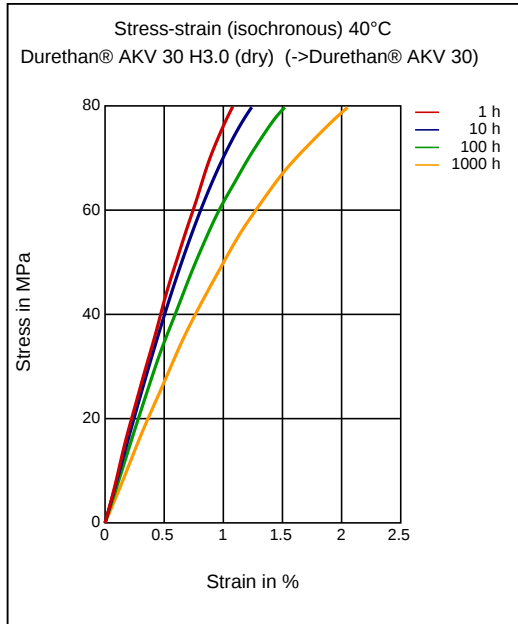
Creep modulus-time 23°C



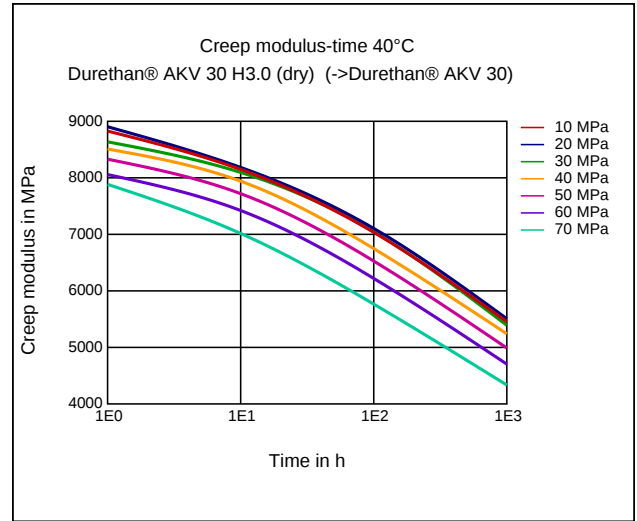
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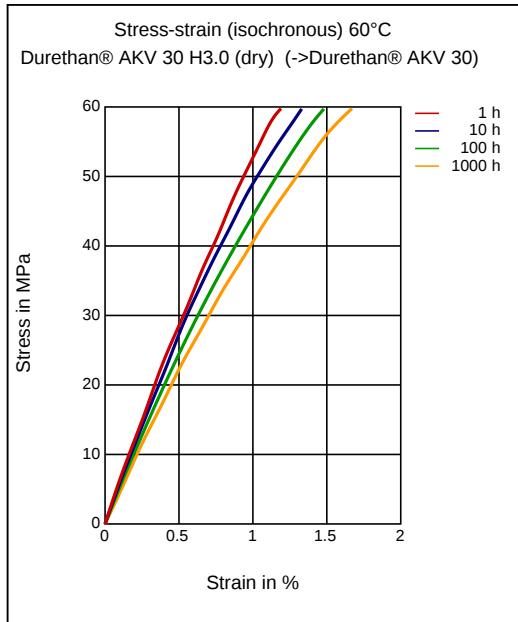
Stress-strain (isochronous) 40 °C



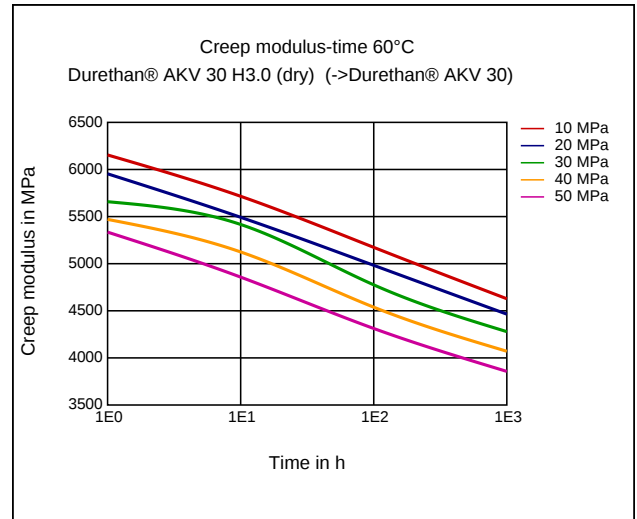
Creep modulus-time 40 °C



Stress-strain (isochronous) 60 °C



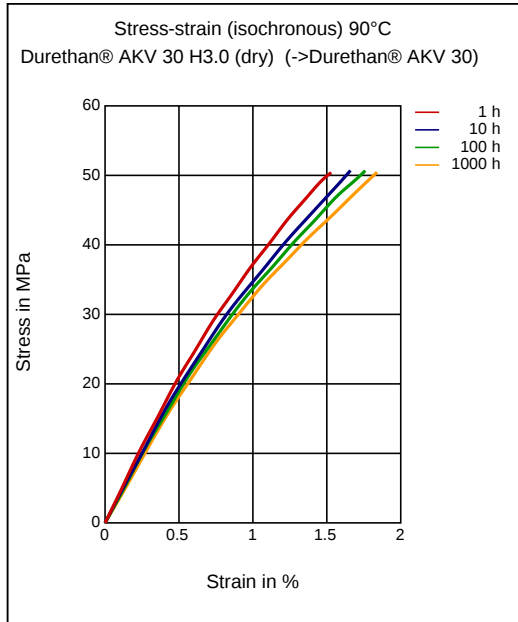
Creep modulus-time 60 °C



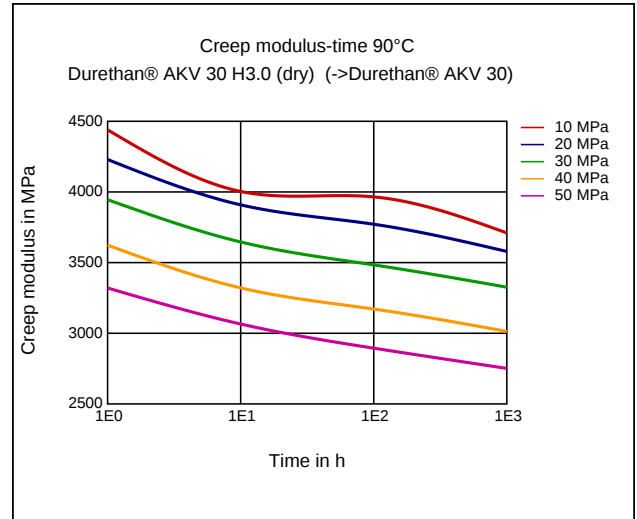
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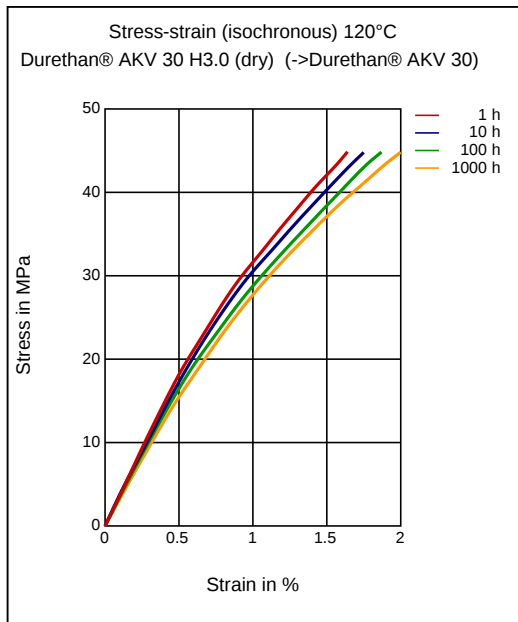
Stress-strain (isochronous) 90°C



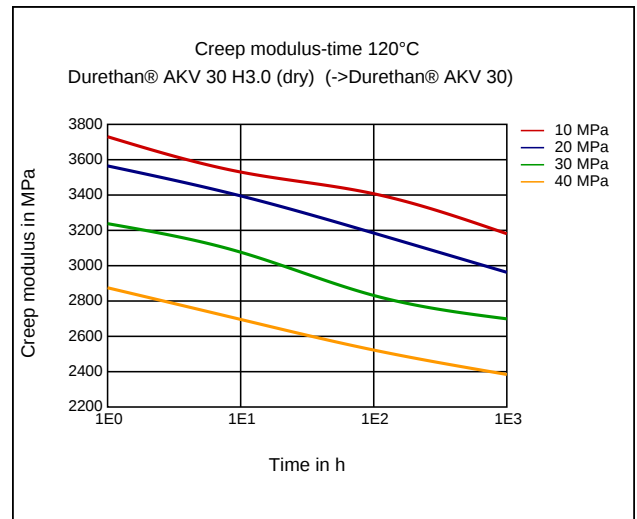
Creep modulus-time 90°C



Stress-strain (isochronous) 120°C



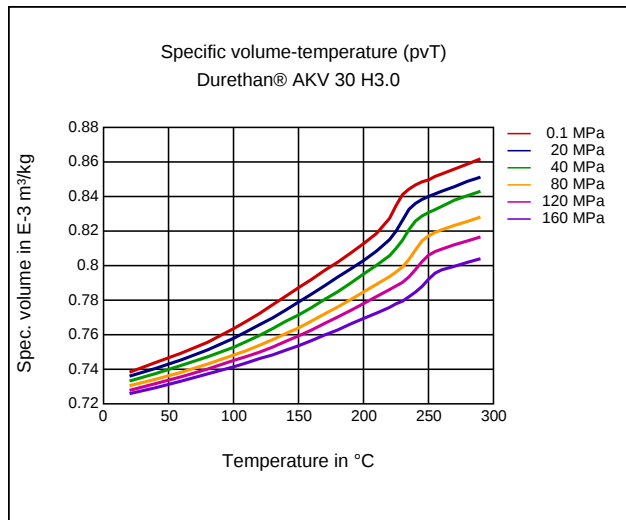
Creep modulus-time 120°C



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Specific volume-temperature (pvT)



Characteristics

Processing

Injection Molding

Additives

Release agent

Delivery form

Pellets

Special Characteristics

Heat aging stabilized

Injection Molding

PREPROCESSING

Max. Water content: 0.1 %

Drying temperature: 80 °C

Drying time:

Dry air dryer 2-20 h (will depend on the initial moisture content)

PROCESSING

Melt temperature: 280 - 300 °C

Mold temperature: 80 - 120 °C