

FORTRON® 6165A6

65% Mineral/Glass reinforced, easy flow, V-0

Fortron 6165A6 is an easier flow version of Fortron 6165A4. It offers similar characteristics to the 6165A4. Applications include electronic components (i.e. lamps housings and sockets) and mechanical components (i.e. pumps and pistons).

Rheological properties

Moulding shrinkage, parallel	0.2 %	ISO 294-4, 2577
Moulding shrinkage, normal	0.5 %	ISO 294-4, 2577

Typical mechanical properties

Tensile Modulus	19500 MPa	ISO 527-1/-2
Stress at break, 5mm/min	135 MPa	ISO 527-1/-2
Strain at break, 5mm/min	1.2 %	ISO 527-1/-2
Flexural Modulus	19000 MPa	ISO 178
Flexural Strength	210 MPa	ISO 178
Compressive modulus	18500 MPa	ISO 604
Shear Modulus	5130 MPa	ISO 6721
Charpy impact strength, 23°C	20 kJ/m ²	ISO 179/1eU
Charpy impact strength, -30°C	20 kJ/m ²	ISO 179/1eU
Charpy notched impact strength, 23°C	7 kJ/m ²	ISO 179/1eA
Charpy notched impact strength, -30°C	7 kJ/m ²	ISO 179/1eA
Izod notched impact strength, 23°C	6 kJ/m ²	ISO 180/1A
Izod notched impact strength, -30°C	6 kJ/m ²	ISO 180/1A
Izod impact strength, 23°C	20 kJ/m ²	ISO 180/1U
Izod impact strength, -30°C	20 kJ/m ²	ISO 180/1U
Hardness, Rockwell, M-scale	100	ISO 2039-2

Thermal properties

Melting temperature, 10°C/min	280 °C	ISO 11357-1/-3
Glass transition temperature, 10°C/min	90 °C	ISO 11357-1/-3
Temp. of deflection under load, 1.8 MPa	270 °C	ISO 75-1/-2
Temp. of deflection under load, 8 MPa	215 °C	ISO 75-1/-2
Spec. heat capacity of melt	1600 J/(kg K)	Internal

Flammability

Burning Behav. at 1.5mm nom. thickn.	V-0 class	UL 94
Thickness tested	1.5 mm	UL 94
Burning Behav. at thickness h	V-0 class	UL 94
Thickness tested	0.75 mm	UL 94

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Electrical properties

Relative permittivity, 1MHz	5.6	IEC 62631-2-1
Dissipation factor, 1MHz	20 E-4	IEC 62631-2-1
Volume resistivity	>1E13 Ohm.m	IEC 62631-3-1
Surface resistivity	>1E15 Ohm	IEC 62631-3-2
Electric strength	25 kV/mm	IEC 60243-1
Comparative tracking index	PLC 2 PLC	UL 746A

Other properties

Water absorption, 2mm	0.02 %	Sim. to ISO 62
Density	1950 kg/m ³	ISO 1183

Injection

Drying Temperature	130 - 140 °C	
Drying Time, Dehumidified Dryer	3 - 4 h	
Processing Moisture Content	0.02 %	
Melt Temperature Optimum	315 °C	Internal
Screw tangential speed	0.14 - 0.16 m/s	
Max. mould temperature	140 - 160 °C	
Injection speed	fast	

Characteristics

Additives Release agent, Flame retardant

Additional information

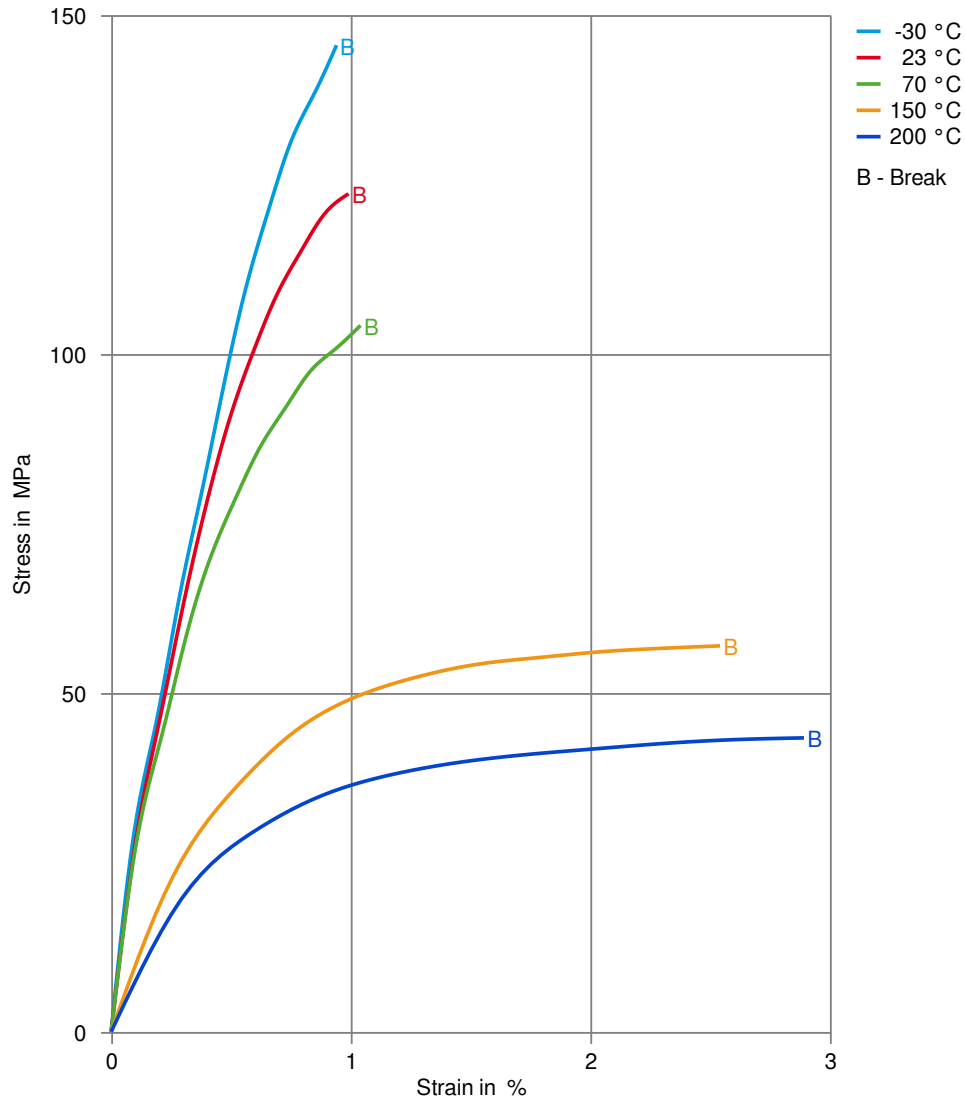
Injection molding On injection molding machines with 15-25 D long three-section screws, as are usual in the trade, the FORTRON is processable. A shut-off nozzle is preferred to a free-flow nozzle.

Melt temperature 320-340 degC
 Mold wall temperature at least 140 degC

A medium injection rate is normally preferred. All mold cavities must be effectively vented.

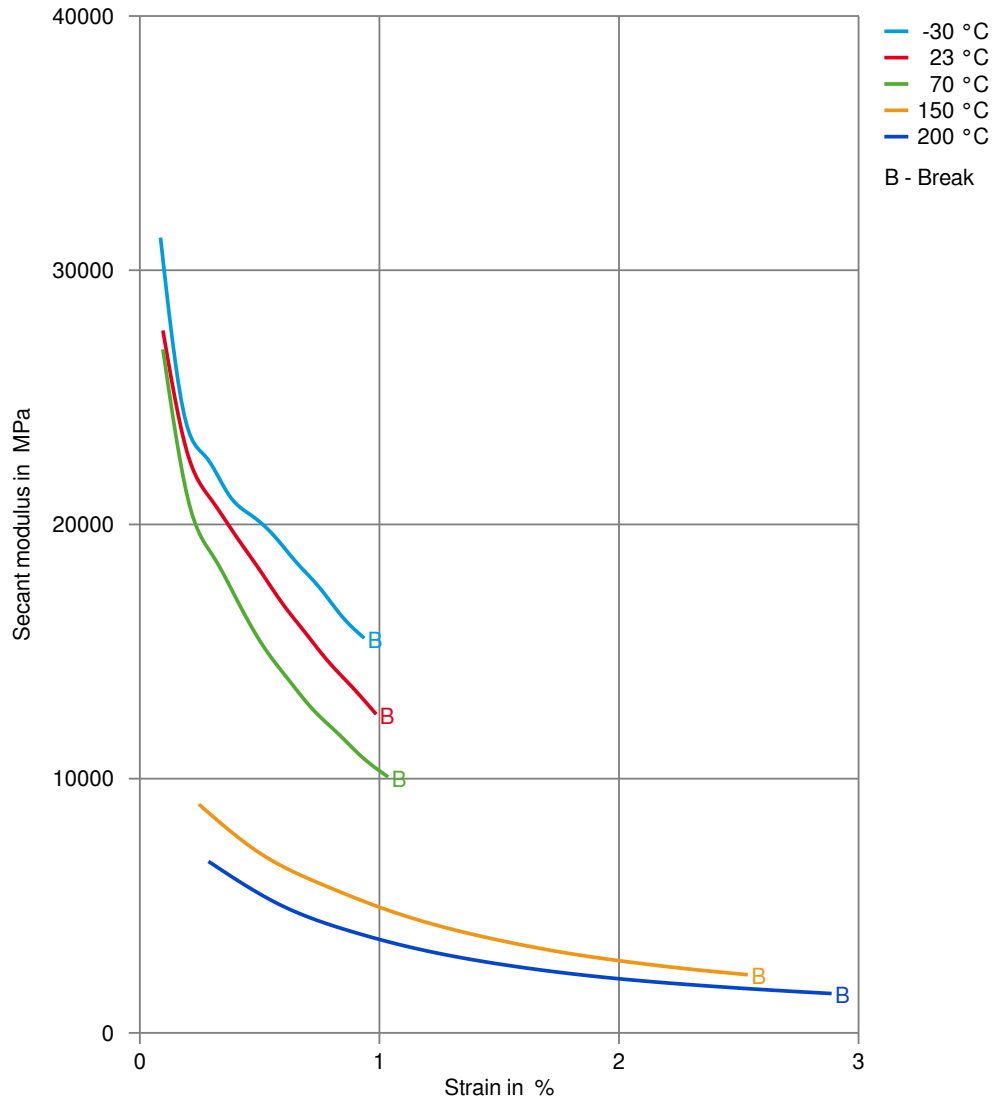
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Stress-strain



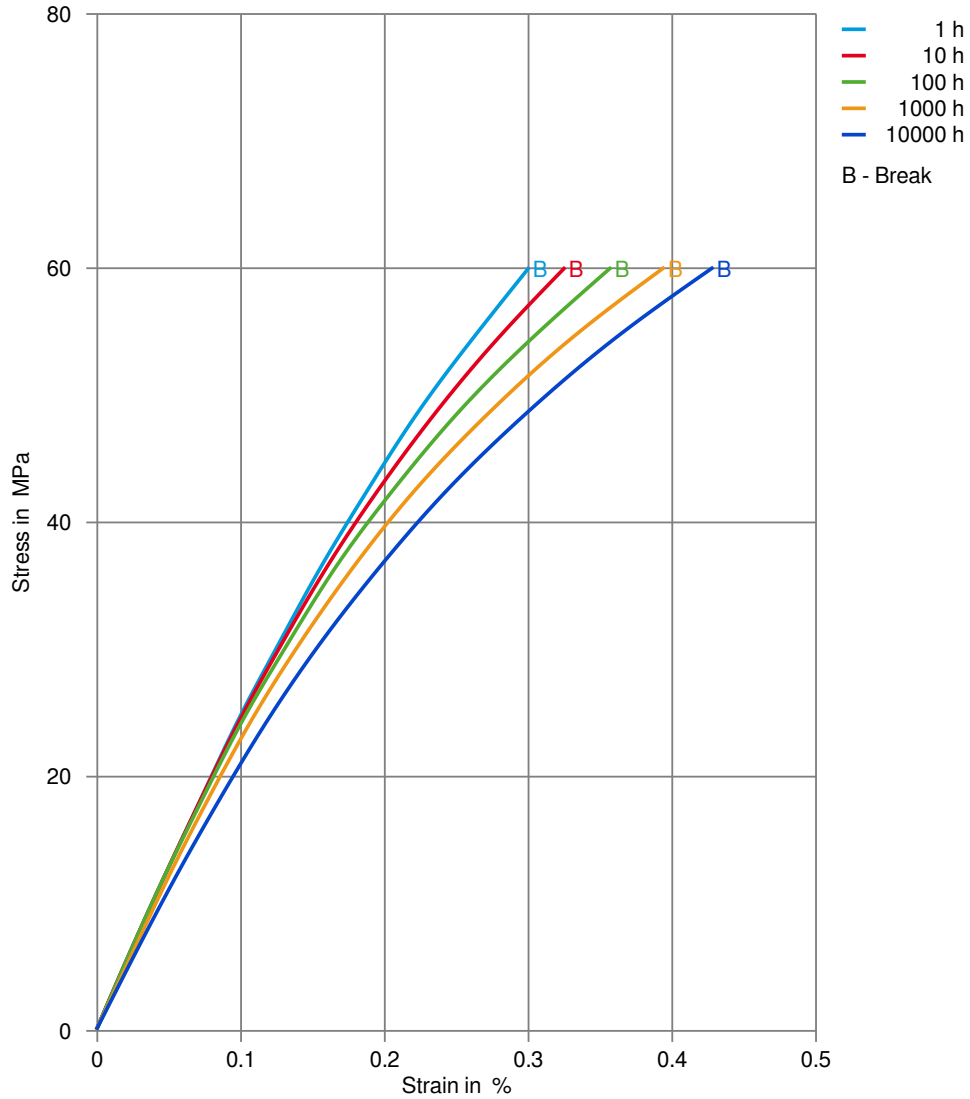
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Secant modulus-strain



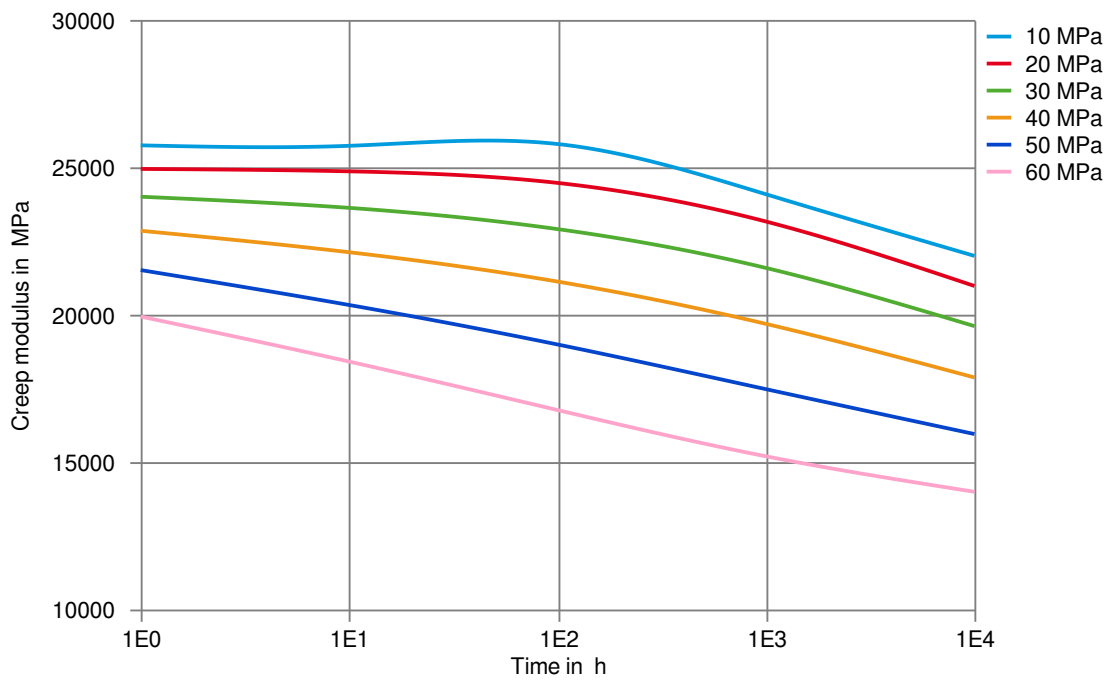
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Stress-strain (isochronous) 23°C



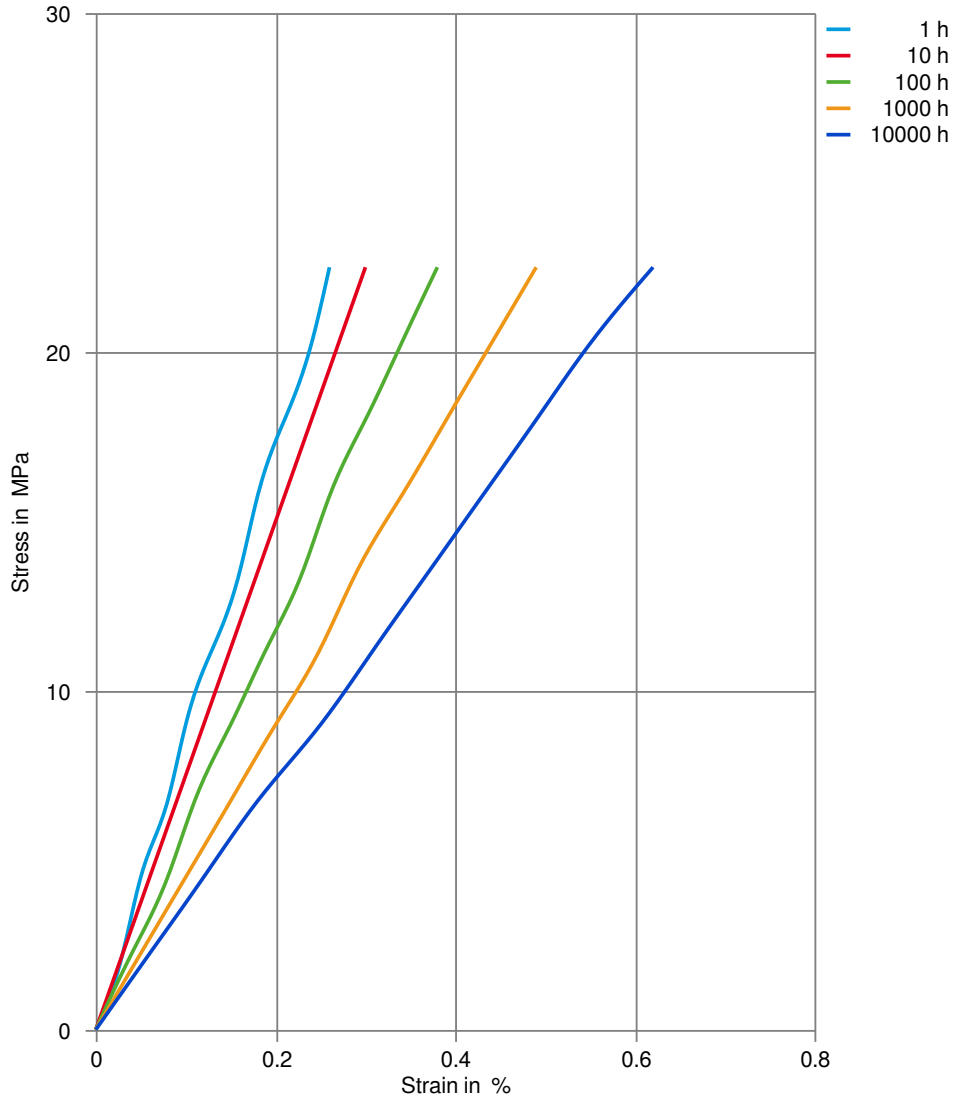
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Creep modulus-time 23°C



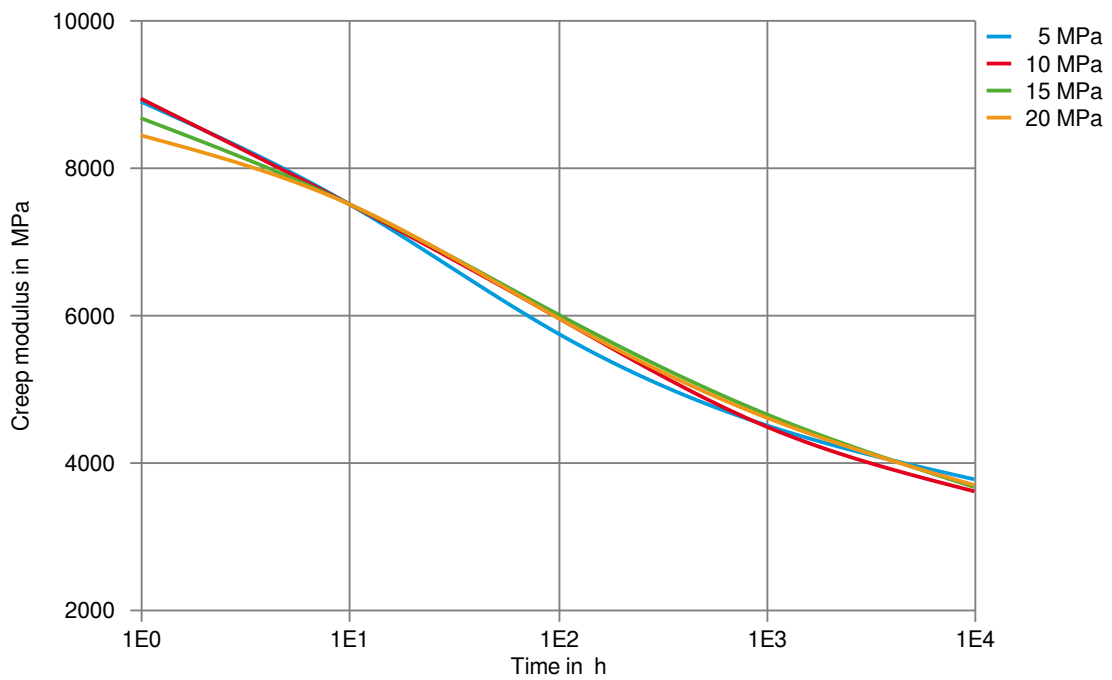
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Stress-strain (isochronous) 120°C



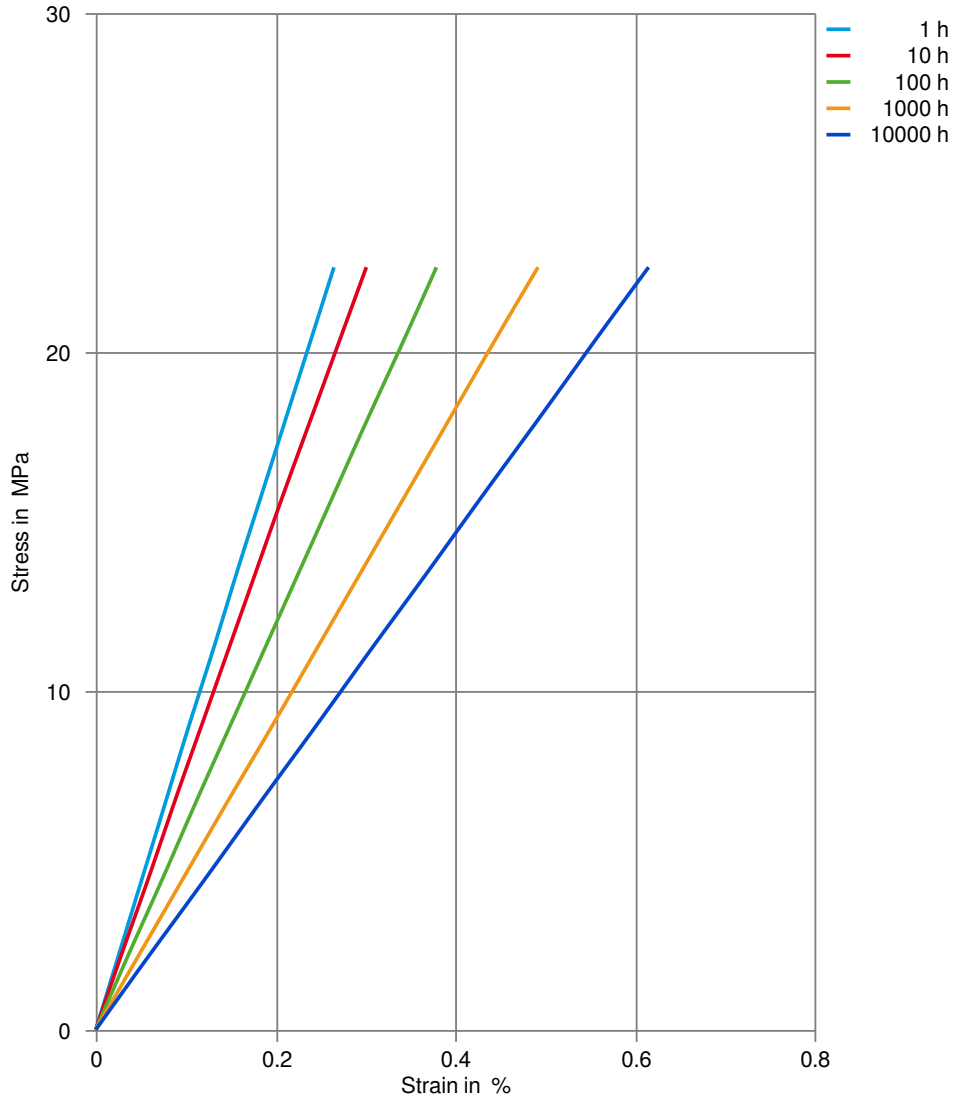
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Creep modulus-time 120°C



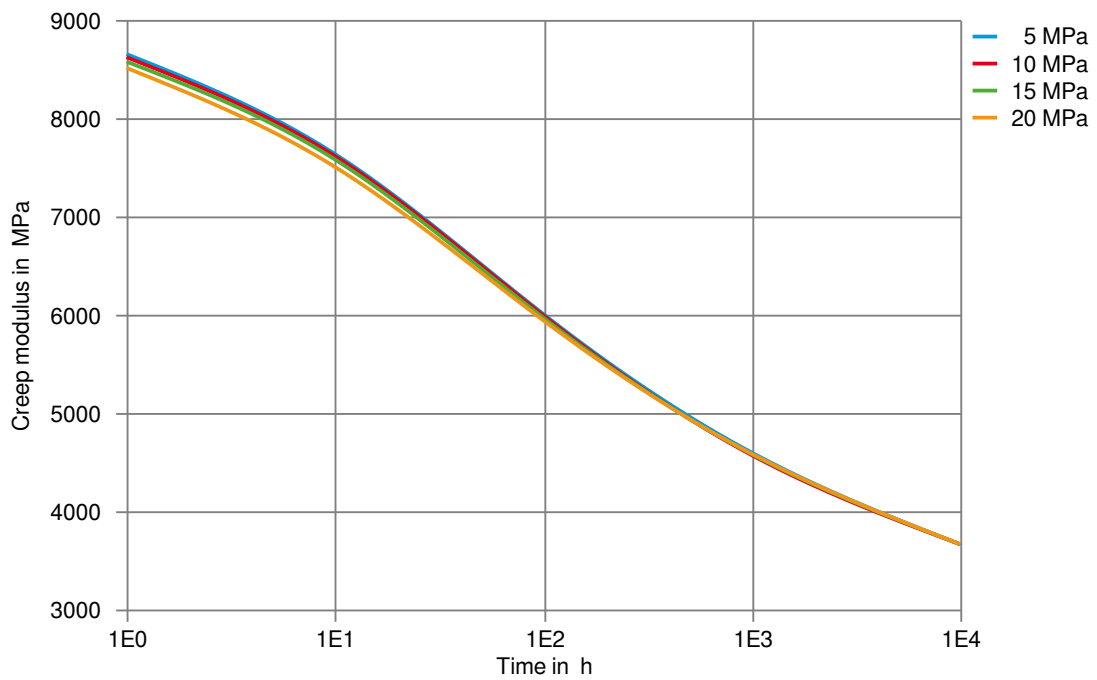
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Stress-strain (isochronous) 150°C



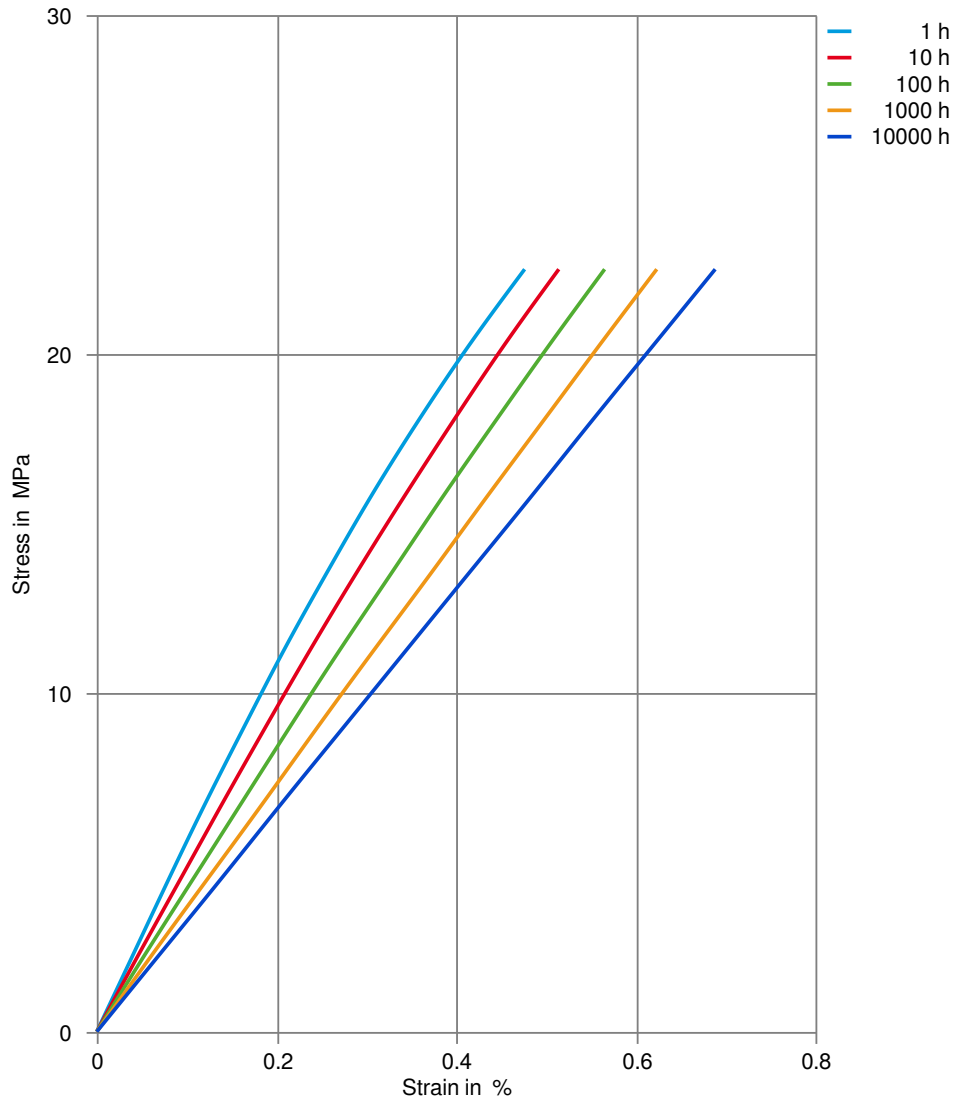
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Creep modulus-time 150°C



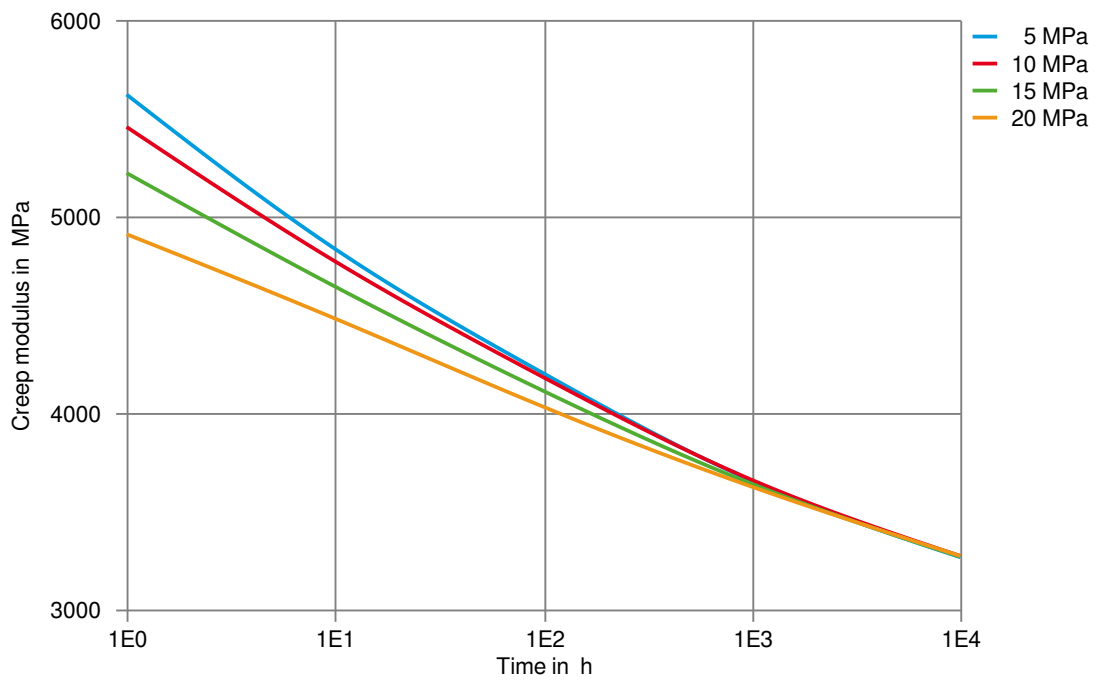
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Stress-strain (isochronous) 200°C



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Creep modulus-time 200°C



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Processing Texts

Pre-drying	FORTRON should in principle be predried. Because of the necessary low maximum residual moisture content the use of dry air dryers is recommended. The dew point should be =< - 30° C. The time between drying and processing should be as short as possible.
Longer pre-drying times/storage	For subsequent storage the material should be stored dry in the dryer until processed (<= 60 h).
Injection molding	On injection molding machines with 15-25 D long three-section screws, as are usual in the trade, the FORTRON is processable. A shut-off nozzle is preferred to a free-flow nozzle. Melt temperature 320-340 degC Mold wall temperature at least 140 degC A medium injection rate is normally preferred. All mold cavities must be effectively vented.
Injection molding Preprocessing	Predrying in a dehumidified air dryer at 130 - 140 degC/3-4 hours is recommended.
Injection molding Postprocessing	Tool temperature of at least 135 degC is recommended for parts to achieve maximum crystallizable potential.

Other Approvals

Other Approvals

OEM	Specification	Additional Information
Continental	TST N 055 58.01	
Ford	WSF-M4D803-A2	
Mercedes-Benz Group (Daimler)	DBL 5404	Black