

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		ISO 527-1/-2
Stress at break, 5mm/min		MPa	ISO 527-1/-2
Strain at break, 5mm/min	1.2	, -	ISO 527-1/-2
Flexural Modulus	19000		ISO 178
Flexural Strength		MPa	ISO 178
Compressive modulus	18500		ISO 604
Shear Modulus		MPa	ISO 6721
Charpy impact strength, 23°C		kJ/m²	ISO 179/1eU
Charpy impact strength, -30°C	20	kJ/m²	ISO 179/1eU
Charpy notched impact strength, 23°C		kJ/m²	ISO 179/1eA
Charpy notched impact strength, -30°C		kJ/m²	ISO 179/1eA
Izod notched impact strength, 23°C		kJ/m²	ISO 180/1A
Izod notched impact strength, -30°C		kJ/m²	ISO 180/1A
Izod impact strength, 23°C		kJ/m²	ISO 180/1U
Izod impact strength, -30°C	20	kJ/m²	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		°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		J/(kg K)	Internal
Flammability			
Burning Behav. at 1.5mm nom. thickn.	\/₋∩	class	UL 94
Thickness tested		mm	UL 94
Burning Behav. at thickness h		class	UL 94
Thickness tested	0.75		UL 94
THIONHOSS เฮอเฮน	0.73	111111	OL 34

Printed: 2023-05-16 Page: 1 of 13



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 Interna	l
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

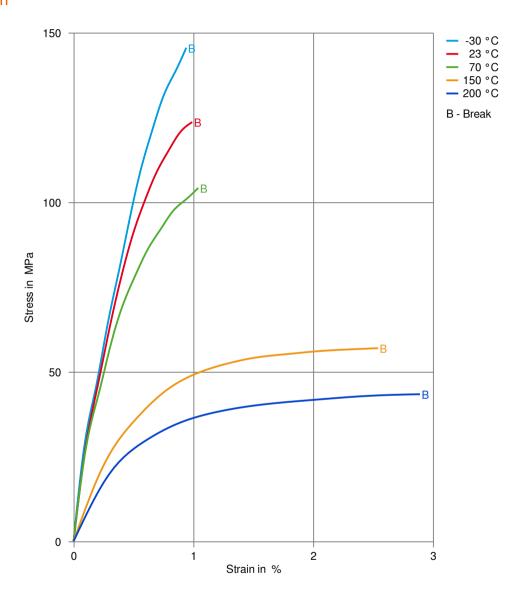
Mold wall temperature at least 140 degC

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

Printed: 2023-05-16 Page: 2 of 13



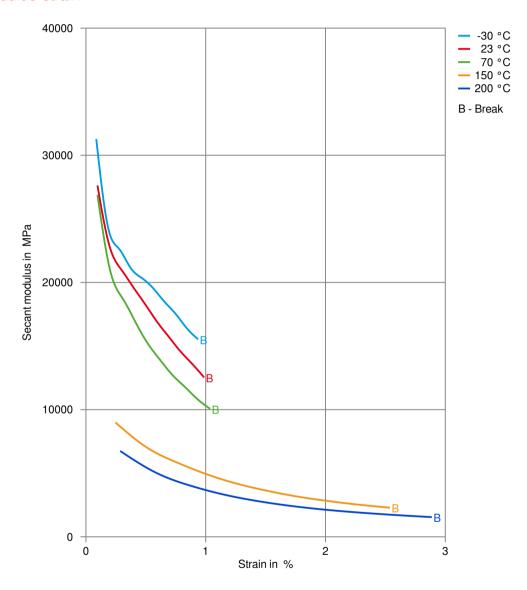
Stress-strain



Printed: 2023-05-16 Page: 3 of 13



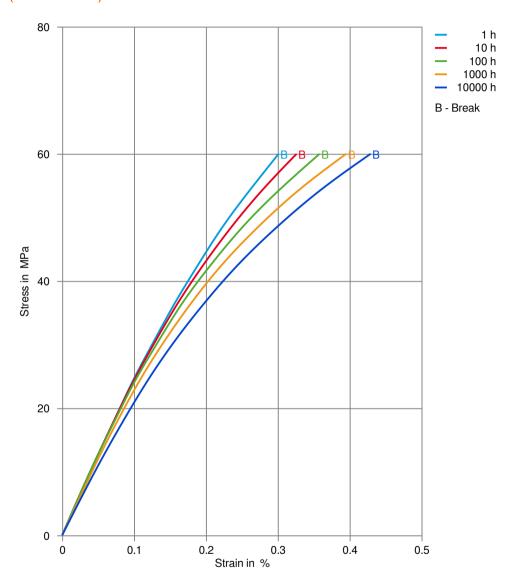
Secant modulus-strain



Printed: 2023-05-16 Page: 4 of 13



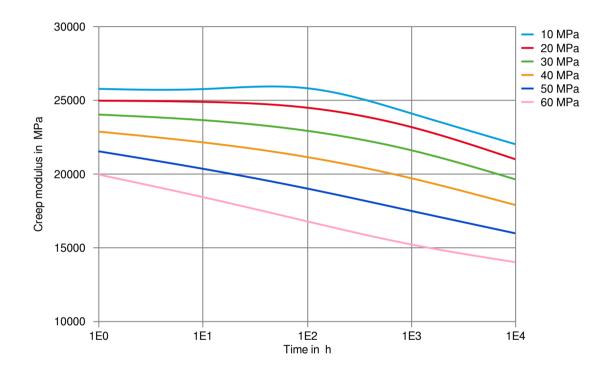
Stress-strain (isochronous) 23°C



Printed: 2023-05-16 Page: 5 of 13



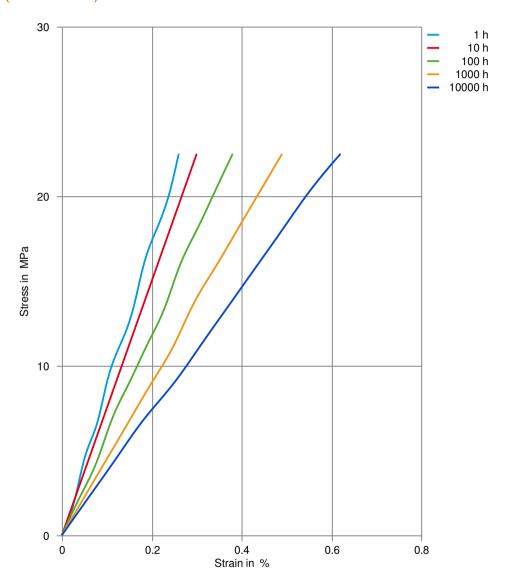
Creep modulus-time 23°C



Printed: 2023-05-16 Page: 6 of 13



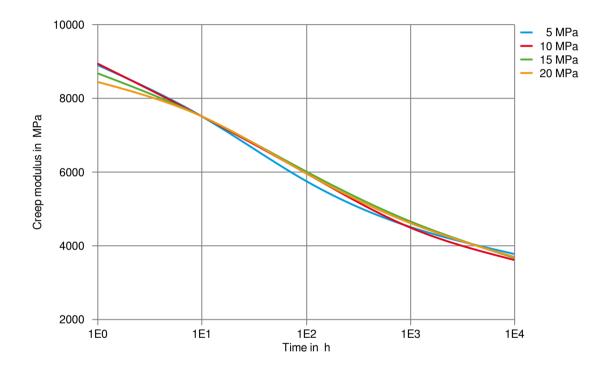
Stress-strain (isochronous) 120°C



Printed: 2023-05-16 Page: 7 of 13



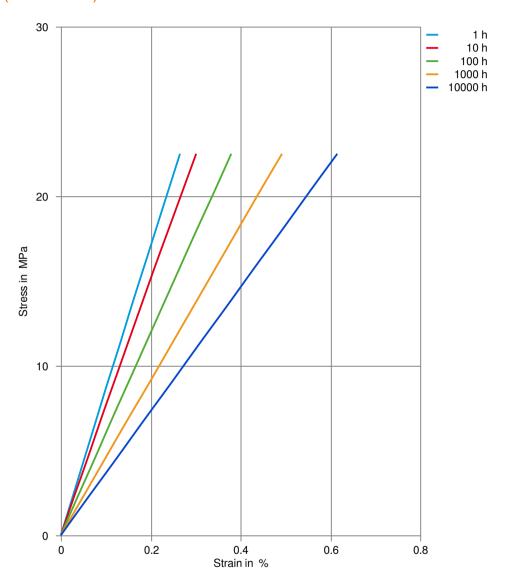
Creep modulus-time 120°C



Printed: 2023-05-16 Page: 8 of 13



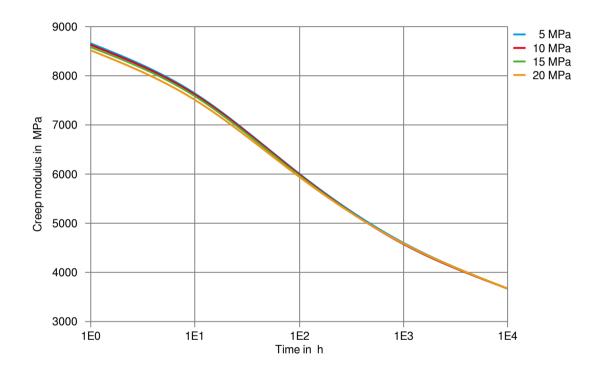
Stress-strain (isochronous) 150°C



Printed: 2023-05-16 Page: 9 of 13



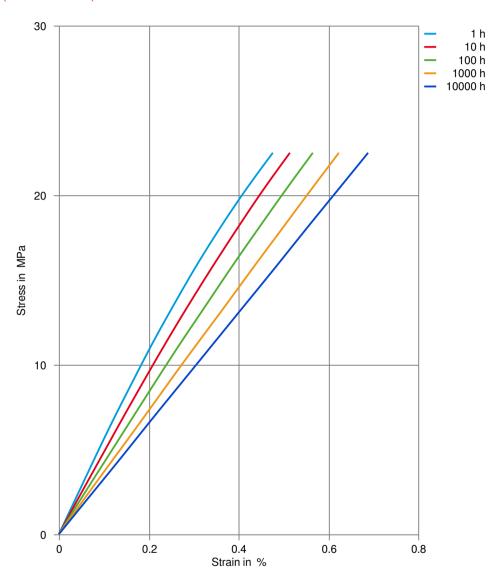
Creep modulus-time 150°C



Printed: 2023-05-16 Page: 10 of 13



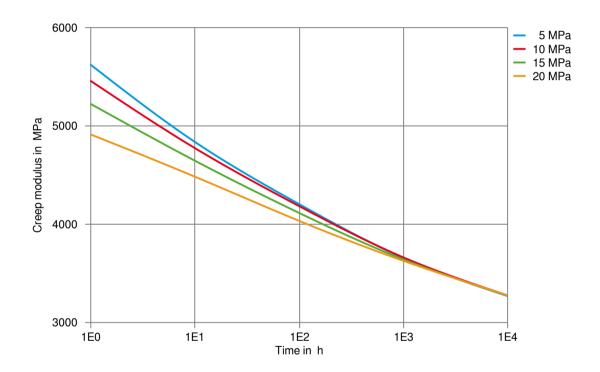
Stress-strain (isochronous) 200°C



Printed: 2023-05-16 Page: 11 of 13



Creep modulus-time 200°C



Printed: 2023-05-16 Page: 12 of 13



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 $=< -30^{\circ}$ 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

Printed: 2023-05-16 Page: 13 of 13

Revised: 2023-03-05 Source: Celanese Materials Database

NOTICE TO USERS: Values shown are based on testing of laboratory test specimens and represent data that fall within the standard range of properties for natural material. These values alone do not represent a sufficient basis for any part design and are not intended for use in establishing maximum, minimum, or ranges of values for specification purposes. Colourants or other additives may cause significant variations in data values. Properties of moulded parts can be influenced by a wide variety of factors including, but not limited to, material selection, additives, part design conditions and environmental exposure. Other than those products expressly identified as medical grade (including by MT® product designation or otherwise), Celanese's products are not intended for use in medical or dental implants. Regardless of any such product designation, any determination of the suitability of a particular material and part design for any use contemplated by the users and the manner of such use is the sole responsibility of the users, who must assure themselves that the material as subsequently processed meets the needs of their particular product or use. To the best of our knowledge, the information contained in this publication is accurate; however, we do not assume any liability whatsoever for the accuracy and completeness of such information. The information contained in this publication should not be construed as a promise or guarantee of specific properties of our products. It is the sole responsibility of the users to investigate whether any existing patents are infringed by the use of the materials mentioned in this publication. Moreover, there is a need to reduce human exposure to many materials to the lowest practical limits in view of possible adverse effects. To the extent that any hazards may have been mentioned in this publication, we neither suggest nor guarantee that such hazards are the only ones that exist. We recommend that persons intending to rely on any recommendation or to use any equipment, pr

© 2023 Celanese or its affiliates. All rights reserved. Celanese®, registered C-ball design and all other trademarks identified herein with ®, TM, SM, unless otherwise noted, are trademarks of Celanese or its affiliates. Fortron is a registered trademark of Fortron Industries LLC. KEPITAL is a registered trademark of Korea Engineering Plastics Company, Ltd.