

Ultrason® E 2010 C6

PESU-CF30

BASF

Medium viscosity injection moulding grade with high rigidity and strength, 30 % carbon fiber reinforced.

Abbreviated designation according to ISO 1043: PESU-CF

Rheological properties	dry / cond	Unit	Test Standard
ISO Data			
Melt volume-flow rate, MVR	15 / *	cm³/10min	ISO 1133
Temperature	360 / *	°C	-
Load	10 / *	kg	-
Molding shrinkage, parallel	0.1 / *	%	ISO 294-4, 2577
Molding shrinkage, normal	0.3 / *	%	ISO 294-4, 2577

Mechanical Properties	dry / cond	Unit	Test Standard
ISO Data			
Tensile Modulus	- / 21200	MPa	ISO 527
Stress at Break	- / 180	MPa	ISO 527
Strain at Break	- / 1.4	%	ISO 527
Impact Strength (Charpy), +23°C	- / 39	kJ/m²	ISO 179/1eU
Impact Strength (Charpy), -30°C	- / 39	kJ/m²	ISO 179/1eU
Notched Impact Strength (Charpy), +23°C	- / 7	kJ/m²	ISO 179/1eA
Notched Impact Strength (Charpy), -30°C	- / 6	kJ/m²	ISO 179/1eA

Thermal Properties	dry / cond	Unit	Test Standard
ISO Data			
Glass Transition Temperature (10°C/min)	225 / *	°C	ISO 11357-1/-2
Temp. of deflection under load (1.80 MPa)	225 / *	°C	ISO 75-1/-2
Temp. of deflection under load (0.45 MPa)	230 / *	°C	ISO 75-1/-2
Coeff. of Linear Therm. Expansion, parallel	4 / *	E-6/K	ISO 11359-1/-2
Coeff. of Linear Therm. Expansion, normal	37 / *	E-6/K	ISO 11359-1/-2
Oxygen index	51.9 / *	%	ISO 4589-1/-2

Electrical Properties	dry / cond	Unit	Test Standard
ISO Data			
Surface Resistivity	* / 1000	Ohm	IEC 62631-3-2

Other Properties	dry / cond	Unit	Test Standard
ISO Data			
Water Absorption	1.7 / *	%	Sim. to ISO 62
Humidity absorption	0.6 / *	%	Sim. to ISO 62
Density	1470 / -	kg/m³	ISO 1183

Material Specific Properties	dry / cond	Unit	Test Standard
ISO Data			
Viscosity number	56 / *	cm³/g	ISO 307, 1157, 1628

Test specimen production	Value	Unit	Test Standard
ISO Data			
Injection Molding, melt temperature	370	°C	ISO 294
Injection Molding, mold temperature	170	°C	ISO 294

Processing Recommendation Injection Molding	Value	Unit	Test Standard
Pre-drying - Temperature	140	°C	-
Pre-drying - Time	4	h	-
Processing humidity	≤0.02	%	-
Melt temperature	350 - 390	°C	-
Mold temperature	150 - 190	°C	-

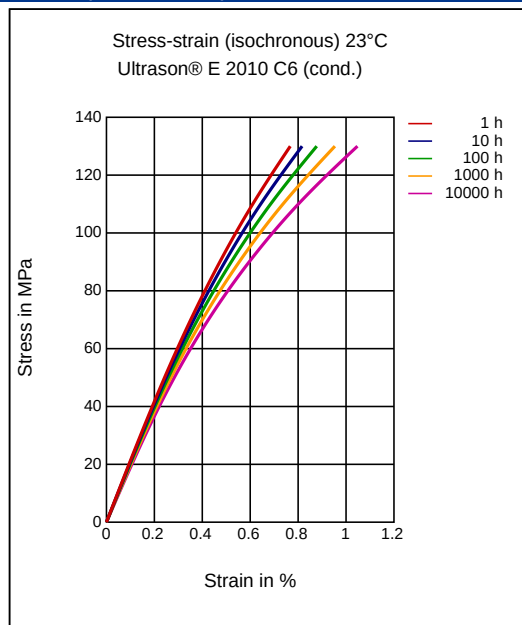
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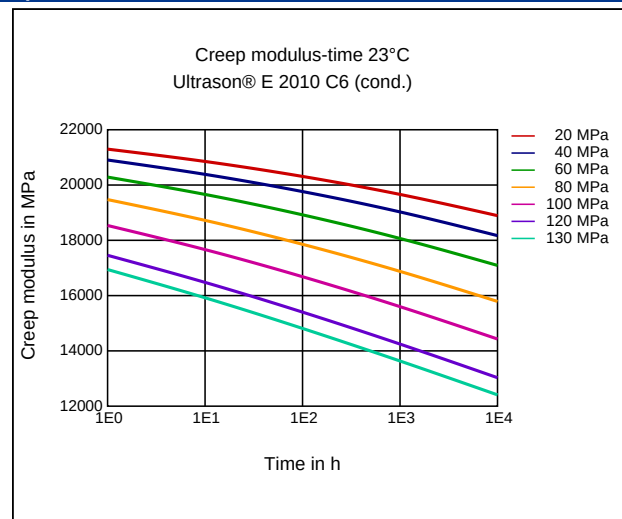
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Diagrams

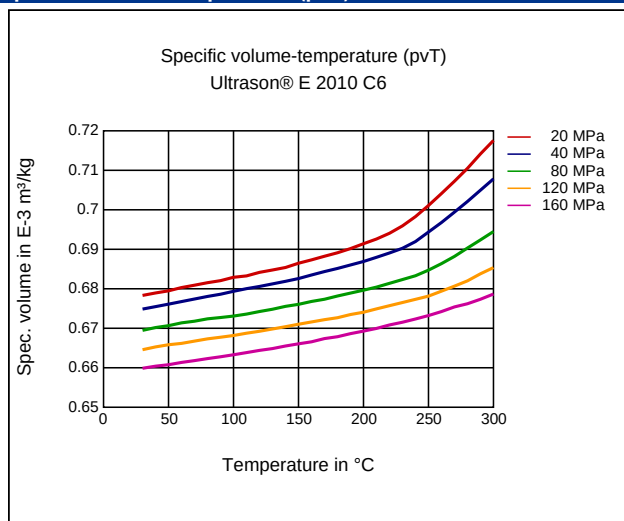
Stress-strain (isochronous) 23°C



Creep modulus-time 23°C



Specific volume-temperature (pvT)



Characteristics

Processing

Injection Molding, Profile Extrusion, Sheet Extrusion, Other Extrusion

Delivery form

Pellets

Special Characteristics

Electrically Conductive, Anti-static

Injection Molding

PREPROCESSING

Pre/Post-processing, max. allowed water content: .02 %

Pre/Post-processing, Pre-drying, Temperature: 140 °C

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Pre/Post-processing, Pre-drying, Time: 4 h

PROCESSING

injection molding, Melt temperature, range: 350 - 390 °C

injection molding, Melt temperature, recommended: 370 °C

injection molding, Mold temperature, range: 150 - 190 °C

injection molding, Mold temperature, recommended: 170 °C

injection molding, Dwell time, thermoplastics: 10 min

Pretreatment

Drying temperature: 130 - 150 °C

Drying time: minimum 4h

recommended dryer: vacuum or dry air dryer

maximum moisture: 0,02 - 0,05%

Ultrason® can be injection molded by any type of machinery on the market, provided that the plasticizing unit and the mold temperature control system have been configured appropriately. The machinery manufacturer must be consulted if any doubts exist on the ability of various parts to withstand the high temperatures required (e.g. barrel, barrel head, bolted connections, etc.)

Long residence time in combination with high temperatures should be avoided e.g. by pump out material at regular intervals.

During extended interruptions, the barrel temperature should be lowered to about 250-280 °C.

It has been found out that heating to the requested processing temperature and shutting down or lowering the temperature is best carried out in two steps.

First, the barrel temperatures are set at the lower processing temperature range for the particular thermoplastic (340 - 350 °C). As soon as these temperatures have reached a steady state, the material in the barrel is pumped out. Second, the barrel temperature can be set to the required processing temperature or the heaters can be shut down.