BASF We create chemistry

ALBIS

Ultrason® KR 4113

(PESU+PTFE)-(CF+CD)30... BASF

Compound based on PES with 30 % filler. The filler system, a mixture of carbon fibres, graphite and PTFE powder, considerably improves Ultrason tribological properties. In addition, this product has a very small expansion coefficient and low tendency to swell in hot oils. Abbreviated designation according to ISO 1043: PESU PTFE-(CF CD)

Rheological properties	dry / cond	Unit	Test Standard
ISO Data			
Melt volume-flow rate, MVR	14 / *	cm³/10min	ISO 1133
Temperature	360 / *	°C	-
Load	10 / *	kg	-
Molding shrinkage, parallel	0.3 / *	%	ISO 294-4, 2577
Molding shrinkage, normal	0.5 / *	%	ISO 294-4, 2577

Mechanical Properties	dry / cond	Unit	Test Standard
ISO Data			
Tensile Modulus	- / 11100	MPa	ISO 527
Stress at Break	- / 115	MPa	ISO 527
Strain at Break	- / 1.5	%	ISO 527
Impact Strength (Charpy), +23°C	- / 24	kJ/m²	ISO 179/1eU
Impact Strength (Charpy), -30°C	- / 22	kJ/m²	ISO 179/1eU
Notched Impact Strength (Charpy), +23°C	- / 6	kJ/m²	ISO 179/1eA
Notched Impact Strength (Charpy), -30°C	- / 5	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)	222 / *	°C	ISO 75-1/-2
Temp. of deflection under load (0.45 MPa)	225 / *	°C	ISO 75-1/-2
Coeff. of Linear Therm. Expansion, parallel	11 / *	E-6/K	ISO 11359-1/-2
Coeff. of Linear Therm. Expansion, normal	44 / *	E-6/K	ISO 11359-1/-2

Electrical Properties	dry / cond	Unit	Test Standard
ISO Data			
Volume Resistivity	- / 8500	Ohm*m	IEC 62631-3-1
Surface Resistivity	* / 4000	Ohm	IEC 62631-3-2
Electric Strength	- / 8	kV/mm	IEC 60243-1

Other Properties	dry / cond	Unit	Test Standard
ISO Data			
Water Absorption	1.5 / *	%	Sim. to ISO 62
Humidity absorption	0.5 / *	%	Sim. to ISO 62
Density	1500 / -	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
Injection Molding, injection velocity	200	mm/s	ISO 294
Injection Molding, pressure at hold	80	MPa	ISO 294

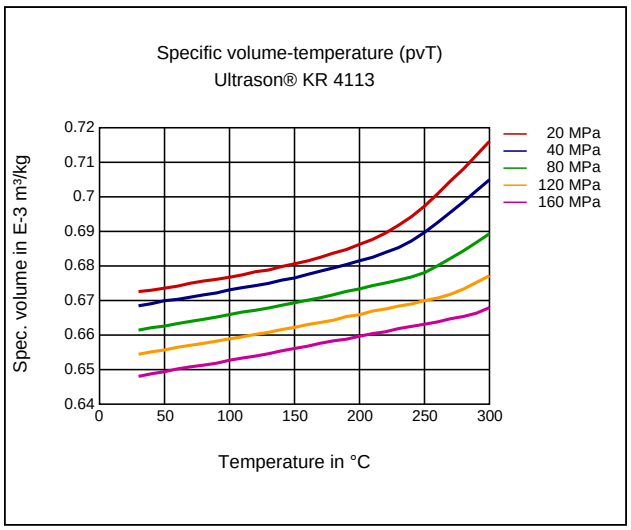
Processing Recommendation Injection Molding	Value	Unit	Test Standard
Pre-drying - Temperature	140	°C	-
Pre-drying - Time	4	h	-
Processing humidity	≤0.02	%	-
Melt temperature	350 - 390	°C	-
Mold temperature	150 - 190	°C	-

Ultrason® KR 4113

(PESU+PTFE)-(CF+CD)30... BASF

Diagrams

Specific volume-temperature (pvT)



Characteristics

Processing
Injection Molding, Sheet Extrusion

Additives
Lubricants

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
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: vaccum 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.