

BASF Ultrason® P 3010 PPSU Unreinforced Polyphenylsulfone

Category : Polymer , Thermoplastic , Polyphenylsulfone (PPSU)

Material Notes:

Description: Medium viscosity injection-molding and extrusion grade with good toughness and chemical resistance (stress crack resistance), resistant against superheated steam. The property profile makes it possible to use them in high-quality technical components and heavy-duty mass products. Conventional processing methods for thermoplastics can be applied. Ultrason® can thus be used where, for example, polyamide, polycarbonate, polyoxymethylene, and polyalkylene terephthalate are no longer suitable, primarily due to thermal or hydrolytic instability. The property spectrum of Ultrason® products allows the substitution of duromers, metals, and ceramics. Information provided by BASF

Order this product through the following link:

http://www.lookpolymers.com/polymer_BASF-Ultrason-P-3010-PPSU-Unreinforced-Polyphenylsulfone.php

Physical Properties	Metric	English	Comments
Bulk Density	0.700 - 0.800 g/cc	0.0253 - 0.0289 lb/in³	
Density	1.29 g/cc	0.0466 lb/in³	ISO 1183
Water Absorption	<= 1.2 %	<= 1.2 %	Equilibrium; ISO 62
	0.56 %	0.56 %	
	@Thickness 2.00 mm, Time 180000 sec	@Thickness 0.0787 in, Time 50.0 hour	Storage; ISO 62
	1.0 %	1.0 %	
	@Thickness 2.00 mm, Time 360000 sec	@Thickness 0.0787 in, Time 100 hour	Storage; ISO 62
	1.15 %	1.15 %	
	@Thickness 2.00 mm, Time 1.08e+6 sec	@Thickness 0.0787 in, Time 300 hour	Storage; ISO 62
	1.2 %	1.2 %	
	@Thickness 2.00 mm, Time 1.80e+6 sec	@Thickness 0.0787 in, Time 500 hour	Storage; ISO 62
Moisture Absorption at Equilibrium	0.60 %	0.60 %	23°C; 50% RH; ISO 62
Water Vapor Transmission	100 - 150 g/m²/day	6.44 - 9.66 g/100 in²/day	DIN EN 12086
Viscosity Measurement	71	71	Viscosity number; ISO 1628
Linear Mold Shrinkage, Flow	0.0090 cm/cm	0.0090 in/in	ISO 294
Linear Mold Shrinkage, Transverse	0.010 cm/cm	0.010 in/in	ISO 294
	>= 45.15 g/10 min	>= 45.15 g/10 min	

Melt Flow Physical Properties	Metric @Load 10.0 kg, Temperature 360 °C	English @Load 22.0 lb, Temperature 680 °F	ISO 1133 Comments

Mechanical Properties	Metric	English	Comments
Ball Indentation Hardness	124 MPa @Load 36.5 kg, Time 30.0 sec	18000 psi @Load 80.5 lb, Time 0.00833 hour	ISO 2039-1
Tensile Strength at Break	74.0 MPa	10700 psi	5 mm/min; ISO 527-2
Tensile Stress	30.0 MPa @Temperature 160 °C	4350 psi @Temperature 320 °F	
	35.0 MPa @Temperature 160 °C	5080 psi @Temperature 320 °F	
	40.0 MPa @Temperature 23.0 °C	5800 psi @Temperature 73.4 °F	
	60.0 MPa @Temperature 23.0 °C	8700 psi @Temperature 73.4 °F	
	70.0 MPa @Temperature 23.0 °C	10200 psi @Temperature 73.4 °F	
Tensile Strength, Yield	74.0 MPa	10700 psi	50 mm/min; ISO 527-2
	45.0 MPa @Temperature 140 °C	6530 psi @Temperature 284 °F	
	55.0 MPa @Temperature 100 °C	7980 psi @Temperature 212 °F	
	65.0 MPa @Temperature 60.0 °C	9430 psi @Temperature 140 °F	
	75.0 MPa @Temperature 20.0 °C	10900 psi @Temperature 68.0 °F	
Elongation at Break	7.8 %	7.8 %	5mm/min; ISO 527-2
Elongation at Yield	7.8 %	7.8 %	50 mm/min; ISO 527-2
	0.18 % @Time 36000 sec, Pressure 30.0 MPa	0.18 % @Time 10.0 hour, Pressure 4350 psi	ISO 899

Mechanical Properties	0.20 % Metric	0.20 % English	Comments 180°C; ISO 899
	@Time 3600 sec, Pressure 6.00 MPa	@Time 1.00 hour, Pressure 870 psi	
	0.28 %	0.28 %	ISO 899
	@Time 36000 sec, Pressure 42.0 MPa	@Time 10.0 hour, Pressure 6090 psi	
	0.40 %	0.40 %	180°C; ISO 899
	@Time 3600 sec, Pressure 8.00 MPa	@Time 1.00 hour, Pressure 1160 psi	
	0.50 %	0.50 %	180°C; ISO 899
	@Pressure 6.00 MPa, Time 360000 sec	@Pressure 870 psi, Time 100 hour	
	0.50 %	0.50 %	ISO 899
	@Time 3600 sec, Pressure 10.0 MPa	@Time 1.00 hour, Pressure 1450 psi	
	0.51 %	0.51 %	ISO 899
	@Pressure 10.0 MPa, Time 36000 sec	@Pressure 1450 psi, Time 10.0 hour	
	0.52 %	0.52 %	ISO 899
	@Pressure 10.0 MPa, Time 360000 sec	@Pressure 1450 psi, Time 100 hour	
	0.53 %	0.53 %	ISO 899
	@Pressure 10.0 MPa, Time 3.60e+6 sec	@Pressure 1450 psi, Time 1000 hour	
	0.90 %	0.90 %	180°C; ISO 899
	@Time 3600 sec, Pressure 12.0 MPa	@Time 1.00 hour, Pressure 1740 psi	
	1.0 %	1.0 %	180°C; ISO 899
	@Time 3600 sec, Pressure 14.0 MPa	@Time 1.00 hour, Pressure 2030 psi	
	1.0 %	1.0 %	180°C; ISO 899
	@Pressure 6.00 MPa, Time 3.60e+6 sec	@Pressure 870 psi, Time 1000 hour	
	1.0 %	1.0 %	180°C; ISO 899
	@Pressure 8.00 MPa, Time 360000 sec	@Pressure 1160 psi, Time 100 hour	
	1.1 %	1.1 %	180°C; ISO 899
	@Time 3600 sec,	@Time 1.00 hour,	

Mechanical Properties	Pressure 16.0 MPa Metric	Pressure 2320 psi English	Comments
	1.1 %	1.1 %	
	@Time 3600 sec, Pressure 20.0 MPa	@Time 1.00 hour, Pressure 2900 psi	ISO 899
	1.2 %	1.2 %	
	@Time 36000 sec, Pressure 20.0 MPa	@Time 10.0 hour, Pressure 2900 psi	ISO 899
	1.25 %	1.25 %	
	@Pressure 20.0 MPa, Time 360000 sec	@Pressure 2900 psi, Time 100 hour	ISO 899
	1.28 %	1.28 %	
	@Pressure 20.0 MPa, Time 3.60e+6 sec	@Pressure 2900 psi, Time 1000 hour	ISO 899
	1.75 %	1.75 %	
	@Time 3600 sec, Pressure 30.0 MPa	@Time 1.00 hour, Pressure 4350 psi	ISO 899
	1.9 %	1.9 %	
	@Pressure 8.00 MPa, Time 3.60e+6 sec	@Pressure 1160 psi, Time 1000 hour	180°C; ISO 899
	1.9 %	1.9 %	
	@Pressure 12.0 MPa, Time 360000 sec	@Pressure 1740 psi, Time 100 hour	180°C; ISO 899
	1.95 %	1.95 %	
	@Pressure 30.0 MPa, Time 360000 sec	@Pressure 4350 psi, Time 100 hour	ISO 899
	2.1 %	2.1 %	
	@Pressure 30.0 MPa, Time 3.60e+6 sec	@Pressure 4350 psi, Time 1000 hour	ISO 899
	2.1 %	2.1 %	
	@Pressure 14.0 MPa, Time 360000 sec	@Pressure 2030 psi, Time 100 hour	180°C; ISO 899
	2.5 %	2.5 %	
	@Time 3600 sec, Pressure 40.0 MPa	@Time 1.00 hour, Pressure 5800 psi	ISO 899
	2.6 %	2.6 %	
	@Time 36000 sec, Pressure 40.0 MPa	@Time 10.0 hour, Pressure 5800 psi	ISO 899
	2.7 %	2.7 %	

Mechanical Properties	Metric	English	Comments
	@Pressure 40.0 MPa, Time 360000 sec	@Pressure 5800 psi, Time 100 hour	
	2.75 %	2.75 %	
	@Time 3600 sec, Pressure 42.0 MPa	@Time 1.00 hour, Pressure 6090 psi	ISO 899
	3.0 %	3.0 %	
	@Pressure 16.0 MPa, Time 360000 sec	@Pressure 2320 psi, Time 100 hour	180°C; ISO 899
	3.0 %	3.0 %	
	@Pressure 40.0 MPa, Time 3.60e+6 sec	@Pressure 5800 psi, Time 1000 hour	ISO 899
	3.0 %	3.0 %	
	@Pressure 42.0 MPa, Time 360000 sec	@Pressure 6090 psi, Time 100 hour	ISO 899
	3.2 %	3.2 %	
	@Pressure 42.0 MPa, Time 3.60e+6 sec	@Pressure 6090 psi, Time 1000 hour	ISO 899
	3.5 %	3.5 %	
	@Pressure 12.0 MPa, Time 3.60e+6 sec	@Pressure 1740 psi, Time 1000 hour	180°C; ISO 899
	4.5 %	4.5 %	
	@Pressure 14.0 MPa, Time 3.60e+6 sec	@Pressure 2030 psi, Time 1000 hour	180°C; ISO 899
	5.5 %	5.5 %	
	@Pressure 16.0 MPa, Time 3.60e+6 sec	@Pressure 2320 psi, Time 1000 hour	180°C; ISO 899
Creep Strength	30.0 MPa	4350 psi	in water at 95°C
	@Time 3.60e+7 sec	@Time 10000 hour	
	33.0 MPa	4790 psi	in water at 95°C
	@Time 3.60e+6 sec	@Time 1000 hour	
	35.0 MPa	5080 psi	in water at 95°C
	@Time 360000 sec	@Time 100 hour	
	37.0 MPa	5370 psi	in water at 95°C
	@Time 36000 sec	@Time 10.0 hour	
Modulus of Elasticity	1.60 GPa	232 ksi	ISO 527

Mechanical Properties	Metric	English	Comments
	@Temperature 140 °C	@Temperature 284 °F	
	1.90 GPa	276 ksi	ISO 527
	@Temperature 100 °C	@Temperature 212 °F	
	2.10 GPa	305 ksi	ISO 527
	@Temperature 60.0 °C	@Temperature 140 °F	
	2.25 GPa	326 ksi	ISO 527
	@Temperature 20.0 °C	@Temperature 68.0 °F	
Tensile Modulus	>= 2.27 GPa	>= 329 ksi	ISO 527-2
	>= 1.60 GPa	>= 232 ksi	Elasticity
	@Temperature 140 °C	@Temperature 284 °F	
	>= 1.90 GPa	>= 276 ksi	Elasticity
	@Temperature 100 °C	@Temperature 212 °F	
	>= 2.10 GPa	>= 305 ksi	Elasticity
	@Temperature 60.0 °C	@Temperature 140 °F	
	>= 2.25 GPa	>= 326 ksi	Elasticity
	@Temperature 20.0 °C	@Temperature 68.0 °F	
Shear Modulus	0.200 GPa	29.0 ksi	ISO 6721
	@Temperature 225 °C	@Temperature 437 °F	
	0.700 GPa	102 ksi	ISO 6721
	@Temperature 200 °C	@Temperature 392 °F	
	0.750 GPa	109 ksi	ISO 6721
	@Temperature 150 °C	@Temperature 302 °F	
	0.775 GPa	112 ksi	ISO 6721
	@Temperature 100 °C	@Temperature 212 °F	
	0.800 GPa	116 ksi	ISO 6721
	@Temperature 50.0 °C	@Temperature 122 °F	

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