POLYMER SOLUTIONS

EOS TPU 1301

Material Data Sheet

EOS TPU 1301

Product Description

The part properties such as flexibility and level of damping of this TPU can be adjusted via structural design with lattice structure, or by adapting the process parameters

MAIN CHARACTERISTICS

- Great resilience
- Good hydrolysis resistance
- High UV-stability
- Very good shock absorption
- Shore hardness 86 A
- Low refresh rate

TYPICAL APPLICATIONS

- Footwear & lifestyle parts that demand elastomeric properties, e. g. handles, shoe soles
- Automotive & industry parts, e.g. tubes, bellows, seals, gaskets
- Protective sports gear, e.g. helmet cushioning
- Applications usually made from foam can be replaced by lattice structures in EOS TPU 1301

MECHANICAL PROPERTIES	DRY / CONDITIONED	UNIT	TEST STANDARD
Tensile Modulus			ISO 527-1/-2
X Orientation	60 / -	MPa	
Y Orientation	60 / -	MPa	
Z Orientation	60 / -	MPa	
Tensile Strength			ISO 527-1/-2
X Orientation	7 / -	MPa	
Y Orientation	7 / -	MPa	
Z Orientation	5 / -	MPa	
Nominal Strain at Break			ISO 527-1/-2
X Orientation	250 / -	%	
Y Orientation	250 / -	%	
Z Orientation	90 / -	%	
Nominal Strain at Break, EOS P 770			ISO 527-1/-2
Z Orientation	60 / -	%	
Flexural Modulus			ISO 178
X Orientation	64 / -	MPa	
Y Orientation	64 / -	MPa	
Z Orientation	69 / -	MPa	
Charpy Impact Strength (+23°C)			ISO 179/1eU
X Orientation	N / -	kJ/m^2	
Y Orientation	N / -	kJ/m^2	
Z Orientation	N / -	kJ/m^2	
Charpy Notched Impact Strength (+23°C)			ISO 179/1eA
X Orientation	N / -	kJ/m^2	
Y Orientation	N / -	kJ/m^2	
Z Orientation	N / -	kJ/m^2	
Charpy Notched Impact Strength (-30°C)			ISO 179/1eA
X Orientation	N / -	kJ/m^2	
Y Orientation	N / -	kJ/m^2	
Z Orientation	N / -	kJ/m^2	
Rebound Resilience			DIN 53512
X Orientation	62 / -		
Y Orientation	62 / -		
Z Orientation	62 / -		
Abrasion Resistance			ISO 4649
X Orientation	86 / -	mm^3	
Z Orientation	95 / -	mm^3	
Compression Set			ISO 815-1/B (72h 23°C 30 min)
X Orientation	24 / -	%	
Z Orientation	25 / -	%	
Compression Set			ISO 815-1/B (24h 70°C 30 min)
X Orientation	65 / -	%	
Z Orientation	72 / -	%	

THERMAL PROPERTIES	DRY / CONDITIONED	UNIT	TEST STANDARD
Melting Temperature	138	°C	ISO 11357-1/-3
Temperature of Deflection under Load 0.45 MPa			ISO 75-1/-2
X Orientation	50	°C	
Z Orientation	52	°C	
Vicat Softening Temperature			ISO 306/A120
X Orientation	98	°C	
Z Orientation	98	°C	

OTHER PROPERTIES	VALUE	UNIT	TEST STANDARD
Water Absorption	0.85	%	sim. to ISO 62/7d
Density	1.11	g/cm³	EOS Method
Powder Color	white	-	-
Components Color	white	-	-

HEADQUARTERS

EOS GmbH
Electro Optical Systems

Robert-Stirling-Ring 1
82152 Krailling / Munich
Germany

Tel.: +49 89 893 36-0
Email: info@eos.info
URL: www.eos.info