

POLYMER SOLUTIONS

PA 1101

Material Data Sheet

PA 1101

Product Description

PA 1101 is a PA 11 based powder for processing in laser sintering systems. The whitish, slightly translucent, additively manufactured parts are characterized by high impact resistance and elongation at break. They do not splinter even under high mechanical loads.

PA 1101 is a bio-based material made from castor oil with a lower CO_{2e} footprint compared to petroleum-based polymers. PA 1101 is therefore also available as a climate-neutral version, the EOS Responsible Product PA 1101 ClimateNeutral. PA 1101 ClimateNeutral combines climate neutrality with the well-known technical properties of PA 1101.

MAIN CHARACTERISTICS

- High ductility
- High impact resistance
- Balanced property profile
- Biobased material

TYPICAL APPLICATIONS

- Impact-resistant applications, which may not splinter when applied with a load, e.g. coverings or housings
- Functional parts that require a high elongation at break, e.g. hinges, clips, or buckles
- Eyewear in the consumer goods industry

MECHANICAL PROPERTIES	DRY / CONDITIONED	UNIT	TEST STANDARD
Tensile Modulus			ISO 527-1/-2
X Orientation	1650 / -	MPa	
Y Orientation	1650 / -	MPa	
Z Orientation	1650 / -	MPa	
Tensile Strength			ISO 527-1/-2
X Orientation	50 / -	MPa	
Y Orientation	50 / -	MPa	
Z Orientation	48 / -	MPa	
Nominal Strain at Break			ISO 527-1/-2
X Orientation	30 / -	%	
Y Orientation	30 / -	%	
Z Orientation	15 / -	%	
Nominal Strain at Break, FORMIGA P 110 Velocis			ISO 527-1/-2
Z Orientation	22 / -	%	
Nominal Strain at Break, EOS P 770			ISO527-1/-2
Z Orientation	12 / -	%	
Charpy Impact Strength (+23°C)			ISO 179/1eU
X Orientation	N / -	kJ/m ²	
Y Orientation	N / -	kJ/m ²	
Z Orientation	85 / -	kJ/m ²	
Charpy Impact Strength (+23°C), FORMIGA P 110 Velocis			ISO 179/1eU
Z Orientation	N / -	kJ/m ²	
Charpy Impact Strength (-30°C)			ISO 179/1eU
X Orientation	N / -	kJ/m ²	
Y Orientation	N / -	kJ/m ²	
Z Orientation	70 / -	kJ/m ²	
Charpy Impact Strength (-30°C), FORMIGA P 110 Velocis			ISO 179/1eU
Z Orientation	N / -	%	
Charpy Notched Impact Strength (+23°C)			ISO 179/1eA
X Orientation	6.9 / -	kJ/m ²	
Y Orientation	7.3 / -	kJ/m ²	
Z Orientation	5.5 / -	kJ/m ²	
Charpy Notched Impact Strength (-30°C)			ISO 179/1eA
X Orientation	6.3 / -	kJ/m ²	
Y Orientation	5.8 / -	kJ/m ²	
Z Orientation	5.1 / -	kJ/m ²	
Shore D Hardness			ISO 7619-1
X Orientation	75 / -	-	

THERMAL PROPERTIES	DRY / CONDITIONED	UNIT	TEST STANDARD
Melting Temperature	201	°C	ISO 11357-1/-3
Temperature of Deflection under Load 1.80 MPa			ISO 75-1/-2
X Orientation	46	°C	
Y Orientation	46	°C	
Z Orientation	47	°C	
Temperature of Deflection under Load 0.45 MPa			ISO 75-1/-2
X Orientation	180	°C	
Y Orientation	180	°C	
Z Orientation	181	°C	

ELECTRICAL PROPERTIES	DRY / CONDITIONED	UNIT	TEST STANDARD
Comparative Tracking Index CTI			IEC 60112
X Orientation	≥600 / -		
Y Orientation	≥600 / -		
Z Orientation	≥600 / -		

OTHER PROPERTIES	VALUE	UNIT	TEST STANDARD
Density	1.03	g/cm ³	ISO 1183-1
Powder Color	white	-	-
Components Color	natural	-	-

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

This powder has not been developed, tested or certified as a medical device according to Directive 93/42/EEC (MDD) or Regulation (EU) 2017/745 (MDR) and is not intended to be used as a medical device, in particular for the purposes specified in Art. 2 No. 1 MDR. Insofar as you intend to use the powder as raw material for the manufacture of pharmaceutical products or medical devices (e.g. as raw material which as a material must meet the requirements of Annex 1, Chapter II MDR), the responsibility and liability for all analyses, tests, evaluations, procedures, risk assessments, conformity assessments, approval and certification procedures as well as for all other official and regulatory measures required for this purpose shall lie solely with you both with regard to the pharmaceutical product and/or medical device manufactured by you and with regard to the properties, suitability, testing, evaluation, risk assessment, other requirements for use of the powder as raw material. In this respect, the limitations of liability pursuant to our General Terms and Conditions and the system sales or material contracts shall apply.

Part properties are provided for information purposes only and EOS makes no representation or warranty, and disclaims any liability, with respect to actual part properties achieved. Part properties are dependent on a variety of influencing factors and therefore, actual part properties achieved by the user may deviate from the information stated herein. This document does not on its own represent a sufficient basis for any part design, neither does it provide any agreement or guarantee about the specific properties of a material or part or the suitability of a material or a part for a specific application.

The achievement of certain part properties as well as the assessment of the suitability of this material for a specific purpose is the sole responsibility of the user. Any information given herein is subject to change without notice.

Status as of 06.10.2025. Subject to technical modifications. EOS is certified according to ISO 9001.

EOS®, Additive Minds®, Alumide®, AMQ®, CarbonMide®, DirectMetal®, DMLS®, EOSAME®, EOSINT®, EOSIZE®, EOSPACE®, EOSPRINT®, EOSTATE®, EOSTYLE®, FORMIGA®, LaserProFusion®, PA 2200®, PrimeCast® and PrimePart® are registered trademarks of EOS GmbH Electro Optical Systems in some countries. For more information visit www.eos.info/trademarks.