

## POLYMER SOLUTIONS

# PA 1100

## Material Data Sheet



### PA 1100

## Product Description

PA 1100 is a PA 11 based powder for processing in laser sintering systems. The white, additively manufactured parts are characterized by high impact resistance and elongation at break. They do not splinter even under high mechanical loads. The white base colour of the parts makes it easy to dye in any desired colour ensuring high color fastness.

Additionally, PA 1100 is a bio-based material made from castor oil with a lower CO<sub>2e</sub> footprint compared to petroleum-based polymers and an important building block in a sustainable production process.

### MAIN CHARACTERISTICS

- High ductility
- High impact resistance
- Easy to color with high color fastness
- 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
<b>Tensile Modulus, EOS P 396</b>			ISO 527-1/-2
<b>X Orientation</b>	1700 / -	MPa	
<b>Y Orientation</b>	1700 / -	MPa	
<b>Z Orientation</b>	1700 / -	MPa	
<b>Tensile Strength</b>			ISO 527-1/-2
<b>X Orientation</b>	51 / -	MPa	
<b>Y Orientation</b>	51 / -	MPa	
<b>Z Orientation</b>	50 / -	MPa	
<b>Nominal Strain at Break</b>			ISO 527-1/-2
<b>X Orientation</b>	30 / -	%	
<b>Y Orientation</b>	30 / -	%	
<b>Z Orientation</b>	25 / -	%	
<b>Charpy Impact Strength (+23°C)</b>			ISO 179/1eU
<b>X Orientation</b>	N / -	kJ/m <sup>2</sup>	
<b>Y Orientation</b>	N / -	kJ/m <sup>2</sup>	
<b>Z Orientation</b>	N / -	kJ/m <sup>2</sup>	
<b>Charpy Impact Strength (-30°C)</b>			ISO 179/1eU
<b>X Orientation</b>	N / -	kJ/m <sup>2</sup>	
<b>Z Orientation</b>	90 / -	kJ/m <sup>2</sup>	
<b>Charpy Impact Strength (-30°C), FORMIGA P 110 Velocis</b>			ISO 179/1eU
<b>Z Orientation</b>	N / -	%	
<b>Charpy Impact Strength (-30°C), FORMIGA P 110 FDR</b>			ISO 179/1eU
<b>Z Orientation</b>	N / -	%	
<b>Charpy Notched Impact Strength (+23°C)</b>			ISO 179/1eA
<b>X Orientation</b>	6,0 / -	kJ/m <sup>2</sup>	
<b>Y Orientation</b>	5,5 / -	kJ/m <sup>2</sup>	
<b>Z Orientation</b>	5.5 / -	kJ/m <sup>2</sup>	
<b>Charpy Notched Impact Strength (-30°C)</b>			ISO 179/1eA
<b>X Orientation</b>	5,0 / -	kJ/m <sup>2</sup>	
<b>Y Orientation</b>	5.0 / -	kJ/m <sup>2</sup>	
<b>Z Orientation</b>	5.0 / -	kJ/m <sup>2</sup>	
<b>Shore D Hardness</b>			ISO 7619-1
<b>X Orientation</b>	75 / -	-	

THERMAL PROPERTIES	DRY / CONDITIONED	UNIT	TEST STANDARD
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<b>Melting Temperature</b>	182	°C	ISO 11357-1/-3
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OTHER PROPERTIES	VALUE	UNIT	TEST STANDARD
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<b>Density</b>	1.03	g/cm <sup>3</sup>	ISO 1183-1
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<b>Powder Color</b>	white	-	-
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<b>Components Color</b>	white	-	-
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## HEADQUARTERS

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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.

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