

## 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>2</sub>e 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
X Orientation	1700 / -	MPa	
Y Orientation	1700 / -	MPa	
Z Orientation	1700 / -	MPa	
<b>Tensile Strength</b>			ISO 527-1/-2
X Orientation	51 / -	MPa	
Y Orientation	51 / -	MPa	
Z Orientation	50 / -	MPa	
<b>Nominal Strain at Break</b>			ISO 527-1/-2
X Orientation	30 / -	%	
Y Orientation	30 / -	%	
Z Orientation	25 / -	%	
<b>Charpy Impact Strength (+23°C)</b>			ISO 179/1eU
X Orientation	N / -	kJ/m <sup>2</sup>	
Y Orientation	N / -	kJ/m <sup>2</sup>	
Z Orientation	N / -	kJ/m <sup>2</sup>	
<b>Charpy Impact Strength (-30°C)</b>			ISO 179/1eU
X Orientation	N / -	kJ/m <sup>2</sup>	
Z Orientation	90 / -	kJ/m <sup>2</sup>	
<b>Charpy Impact Strength (-30°C), FORMIGA P 110 Velocis</b>			ISO 179/1eU
Z Orientation	N / -	%	
<b>Charpy Impact Strength (-30°C), FORMIGA P 110 FDR</b>			ISO 179/1eU
Z Orientation	N / -	%	
<b>Charpy Notched Impact Strength (+23°C)</b>			ISO 179/1eA
X Orientation	6,0 / -	kJ/m <sup>2</sup>	
Y Orientation	5,5 / -	kJ/m <sup>2</sup>	
Z Orientation	5,5 / -	kJ/m <sup>2</sup>	
<b>Charpy Notched Impact Strength (-30°C)</b>			ISO 179/1eA
X Orientation	5,0 / -	kJ/m <sup>2</sup>	
Y Orientation	5,0 / -	kJ/m <sup>2</sup>	
Z Orientation	5,0 / -	kJ/m <sup>2</sup>	
<b>Shore D Hardness</b>			ISO 7619-1
X Orientation	75 / -	-	

THERMAL PROPERTIES	DRY / CONDITIONED	UNIT	TEST STANDARD
<b>Melting Temperature</b>	182	°C	ISO 11357-1/-3
<b>Temperature of Deflection under Load 1.80 MPa</b>			ISO 75-1/-2
X Orientation	46	°C	
Y Orientation	46	°C	
Z Orientation	47	°C	

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

#### HEADQUARTERS

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