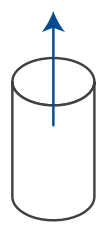
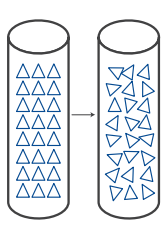
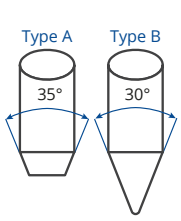
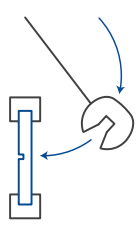
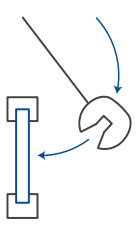
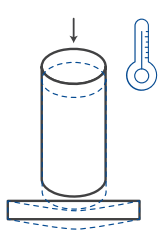
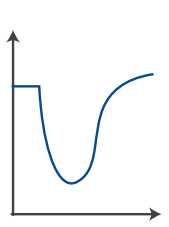
MATERIALS COMPARISON - TECHNICAL DATASHEET

Polymers

	MATERIAL	TENSILE MODULUS	TENSILE STRENGTH	ELONGATION AT BREAK	MELTING POINT	HARDNESS SHORE	CHARPY IMPACT NOTCHED	CHARPY IMPACT UNNOTCHED	HDT B (0,45 MPa, DRY)	CERTIFICATIONS	REBOUND RESILIENCE
		Is the mechanical stress that would generate a theoretical elongation of 100% of the initial length of a material. The higher this value, the more rigid the material is	Is the stress from which a material deforms irreversibly. This value characterizes the resistance of a material	Is the ability of a material to elongate plastically before breaking during a tensile test. The higher this value, the more ductile the material is	Is the temperature at which a crystalline material changes from a solid state to a liquid state	Is a scale of values for characterizing the hardness of a material. The Shore A scale is for flexible «soft» materials and the D scale is for rigid materials	Is the energy required to break a test specimen (sample of material) previously notched. This value measures the impact resistance of a material	Is the energy required to break a test specimen (sample of material) not previously notched. This value measures the impact resistance of a material	Is the temperature from which specimens subjected to a load of 0.45MPa in their center and at a temperature in constant rise undergo a conventional bending of 0.2%	Certificate issued by an independent body attesting to the material's compliance with the standards and regulations in force	Is the ratio between the energy returned by the material and the energy supplied to generate a deformation of the latter. It represents the ability of a material to absorb shock
											
SLS Technology	**PA12**	1700 ± 150 MPa	45 ± 3 MPa	20 ± 5 %	min. 172°C, max. 180°C	75 ± 2 D	4,8 ± 0,3 kJ/m²	-	-	Biocompatibility Food assessment REACH	-
	PA12 Grey GF	3200 MPa	51 MPa	9%	185 - 188 °C	80 D		-	-	-	-
	PA2210 FR	2500 (dry) MPa 2400 (cond) MPa	46 (dry) MPa 43 (cond) MPa	4% (dry) 7% (cond)	185°C	-	-	-	-	Blue card UL-94 V-0	-
	Ultrasint® TPU 88A	75 MPa	8 MPa	X: 270% Z: 130%	120 - 150 °C	88 - 90 A	No break	-	-	Biocompatibility	63%
	Ultrasint® PA11	XY: 1750 MPa Z: 1800 MPa (dry)	XY: 52 MPa Z: 54 MPa (dry)	XY: 28% Z: 24% (dry, 23°C)	203°C	-	XY: 5.1 MPa Z: 3.9 MPa (dry)	XY: 184 MPa Z: 85 MPa (dry)	176°C	Food contact Biocompatibility	-
	Ultrasint® PA11 ESD	XY: 3150 MPa Z: 2150 MPa (dry)	XY: 65 MPa Z: 55 MPa (dry)	XY: 20% Z: 23% (dry, 23°C)	204°C	-	XY: 6.6 MPa Z: 4.7 MPa (dry)	XY: 80 MPa Z: 90 MPa (dry)	186°C	-	-
	Ultrasint® PA11 CF	XY: 5900 MPa Z: 2500 MPa (dry)	XY: 82 MPa Z: 55 MPa (dry)	XY: 7% Z: 11% (dry)	202°C	-	XY: 6.4 MPa Z: 4.7 MPa (dry)	XY: 54 MPa Z: 33 MPa (dry)	189°C	-	-
MJF Technology	**PA12**	XY: 1700 MPa Z: 1900 MPa	50 MPa	XY: 17% Z: 9%	-	-	-	-	-	Biocompatibility PAHs certificate RoHS/REACH UL94 and UL746A	-
	PP	1600 MPa	29 MPa	X/Y: 20% Z: 14%	-	-	-	-	100°C	-	-
	Ultrasint® TPU01	85 MPa	XY: 9 MPa Z: 7 MPa	XY: 280% Z: 150%	120-150°C	88 - 90 A	No break	-	-	Biocompatibility	63%
	Multi Jet Fusion PA11	XY 1700 MPa Z: 1800 MPa	54 MPa	XY: 40% Z: 25%	-	-	-	-	-	Biocompatibility	-
FDM Technology	**r-PET**	XY: 1640 MPa Z: 1334 MPa	XY: 38.6 MPa Z: 14.7 MPa	XY: 4.3% Z: 1.2%	220°C	-	XY: 4 kJ/m² Xz: 2 kJ/m²	XY: 55.7 kJ/m² Xz: 33.7 kJ/m²	71°C	Recycled Content Declaration	