

Materials	CNC MACHINED MATERIALS STARTING FROM STOCK							3D PRINTING			3D PRINTING			
	Non-ferrous alloys						Plastics		Plastics (with HP 5210 MJF technology)			Plastics (with 3D Systems SLS 6100 technology)		
	Aluminum 7075 T6 Eregal	Aluminum 6082 Anticorodal	Aluminum 5083 Peraluman	OT58 Brass (CW614N, Cu Zn39Pb3, UNI5705)	C101 Copper (UNS_C11000, CW004A)	CuSn12 Bronze	Nylon 6 + MoS2 (Polyamide 6, Tecast TM)	Delrin (POM-C, acetal resin)	Nylon PA12 classic	Nylon PA12 performance	Nylon PA12 top mechanical	Nylon PA11 classic	Nylon PA11 performance	Nylon PA11 top mechanical
V2.4 Weerg 31/07/2019														
Color	light grey	light grey	light grey	yellow	reddish yellow	dark yellow	black	white	grey, black			white and other colors		
Density	2.88 g/cm³	2.70 g/cm³	2.66 g/cm³	8.40 g/cm³	8.91 g/cm³	8.60 g/cm³	1,15 g/cm³	1,41 g/cm³	1,01 g/cm³			1,02 g/cm³		
Max workable size	496x496x400 mm (19.5x19.5x15.7 in)	496x496x400 mm (19.5x19.5x15.7 in)	496x496x400 mm (19.5x19.5x15.7 in)	300x300x300 mm (11.8x11.8x11.8 in)	300x300x300 mm (11.8x11.8x11.8 in)	300x300x300 (11.8x11.8x11.8 in)	150x150x150 (5.9x5.9x5.9 in)	150x150x150 (5.9x5.9x5.9 in)	380x284x380 mm (15x11.2x15 in)			335x285x457 mm (13.2x11.2x18 in)		
Applications	High strenght aeronautic alloy: gears, shafts, motorcycle and bikes frames, spurs, aerospace applications, naval engines, moulds.	Light alloy with excellent mechanical properties, and very good corrosion resistance: industrial components, load bearing elements.	Very good resistance to corrosion and oxidation, toughness. For parts which require a good mechanical strenght, and improved fatigue resistance.	Good corrosion and mechanical resistance: shafts, transmission parts, impellers, condenser plates, valves, pins and decorative elements.	Oxygen free copper, high electric and thermal conductivities, moderate resistance to corrosion: bus bars, automotive components, home appliances.	Good corrosion resistance: pumps bodies, valves, friction, wearing and high-pressure bearing parts.	The addition of the solid lubricant Molybdenum Sulphide makes it an excellent choice for the manufacturing of bushings, pulleys, rolls, wheels, gears, valve seats, seals.	Excellent mechanical properties, low moisture absorption, chemical inertness, and dimensional stability. Can be used in a wide range of temperatures.	Strong thermoplastic for functional prototyping and final parts. Excellent chemical resistance to oils, greases and hydrocarbons. Optimal for post finishing processes. USP Class I-VI and US FDA guidance for Intact Skin Surface Devices, RoHS, 11 REACH, PAHs, UL 94, UL 746A, Statement of Composition for Toy Applications.			For functional prototypes and final parts in the automotive and consumer electronics sectors. Excellent impact and fatigue resistance for parts that require hundreds of opening and closing cycles. It can replace injection parts. Resistant to hydrocarbons and oils. UL 94HB.		
Best tolerance	± 0,05	± 0,05	± 0,05	± 0,05	± 0,05	± 0,05	± 0,10	± 0,10	± 0,30mm under 100mm ±0,3% above 100mm			± 0,30mm under 100mm ±0,3% above 100mm		
Yield strenght [MPa]	434-503	230-360	110-130	340-550	180-320	140-150	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Tensile strenght [MPa]	510-572	310-385	275-350	360-500	220-410	140-280	55-80	65-70	44	48	53	40	45	51
Young modulus [GPa]	72	69	72	97	120	118	3	3	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Elongation at break [%]	5-11	10-11	12-16	6-20	6-50	5-12	50-100	25	12	15	19	48	56	64
Brinell hardness	150	100	75	90-160	90	80	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Melting point [°C]	635	645	570	875	1083	1000	255	164	187	187	187	N.D.	N.D.	N.D.
Electrical conductivity (% IACS)	33	46	29	28	100	10	0	0	0	0	0	0	0	0
Rockwell M hardness							M86	M94	N.D.	N.D.	N.D.	Shore D 76		
HDT @ 0.45 MPa [°C]							160	165	175	175	175	193		
HDT @ 1.8 MPa [°C]							55	125	95	95	95	57		
Maximum operating temperature (short term) [°C]							180	145	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Maximum operating temperature (long term, 20.000 hours) [°C]							75	85	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Water absorption (50% Rh, saturation) [%]							3	0,9	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.