

MATERIAL DATASHEET

CNC Materials

Measurement	ALUMINUM 6061-T6	ALUMINUM 5083-T6	ALUMINUM 6082-T6	ALUMINUM 7075-T6	TITANIUM Ti6AL4V	BRASS OT58
Density	2.70 g/cm ³	2.66 g/cm ³	2.70 g/cm ³	2.88 g/cm ³	4.47 g/cm ³	8.40 g/cm ³
Yield Strenght	275 ± 10 MPa	120 ± 10 MPa	295 ± 65 MPa	465 ± 35 MPa	1100 ± 25 MPa	445 ± 105 MPa
Tensile Strenght	310 ± 20 MPa	315 ± 35 MPa	345 ± 35 MPa	540 ± 30 MPa	1170 ± 30 MPa	430 ± 70 MPa
Young Modulus	68 GPa	72 GPa	69 GPa	72 GPa	110 GPa	97 GPa
Elongation at Break	17 ± 2% MPa	14 ± 2% MPa	10.5 ± 0.5% MPa	7.5 ± 3.5% MPa	23 ± 1% MPa	15 ± 8% MPa
Brinell Hardness	95	75	100	150	379	125
Melting Point	582°C	570°C	645°C	637°C	1610°C	870°C
Electrical Conductivity	29 %IACS	29 %IACS	46 %IACS	33 %IACS	3.1 %IACS	28 %IACS

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MATERIAL DATASHEET

CNC Materials

Measurement	BRONZE CUSN12	COPPER C101	STAINLESS STEEL 304	STAINLESS STEEL 316L	STEEL ALLOY C45	STEEL ALLOY 18NICRMO5
Density	8.60 g/cm ³	8.90 g/cm ³	8.00 g/cm ³	7.85 g/cm ³	7.87 g/cm ³	7.85 g/cm ³
Yield Strenght	145 ± 5 MPa	250 ± 70 MPa	285 ± 5 MPa	305 ± 15 MPa	325 ± 45 MPa	807 ± 172 MPa
Tensile Strenght	210 ± 70 MPa	305 ± 85 MPa	530 ± 10 MPa	595 ± 25 MPa	590 ± 110 MPa	1050 ± 150 MPa
Young Modulus	115 GPa	120 GPa	190 GPa	200 GPa	220 GPa	190 GPa
Elongation at Break	8.5 ± 4.5% MPa	22.5 ± 20% MPa	62.5 ± 2.5% MPa	52.5 ± 2.5% MPa	21 ± 1% MPa	14.5 ± 1.5% MPa
Brinell Hardness	80	90	125	220	205	215
Melting Point	995°C	1083°C	1400°C	1435°C	1550°C	1645°C
Electrical Conductivity	10 %IACS	100 %IACS	13 %IACS	15 %IACS	3 %IACS	4 %IACS

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MATERIAL DATASHEET

CNC Materials

Measurement	ABS	NYLON	POM	PEEK	PMMA	PC
Density	1.03 g/cm ³	1.15 g/cm ³	1.40 g/cm ³	1.31 g/cm ³	1.19 g/cm ³	1.19 g/cm ³
Tensile Strenght	41 ± 14 MPa	63 ± 17 MPa	65 ± 5 MPa	90 ± 10 MPa	69 ± 15 MPa	63 ± 5 MPa
Yield Strenght	36 ± 15 MPa	57 ± 6 MPa	63 ± 3 MPa	91 ± 4 MPa	71 ± 7 MPa	55 ± 4 MPa
Young's Modulus	2.05 GPa	1.80 GPa	2.60 GPa	3.85 GPa	3.05 GPa	2.25 GPa
Elongation at Break	30 ± 20% MPa	200 ± 100% MPa	31 ± 1% MPa	40 ± 5% MPa	3 ± 3% MPa	85 ± 35% MPa
Hardness	11HV	16HV	88HRM	27HV	85HRM	29HV
Melting Point	70°C	75°C	82°C	249°C	75°C	125°C
Electrical Conductivity	0 %IACS	0 %IACS	0 %IACS	0 %IACS	0 %IACS	0 %IACS
Water Absorption	0.75%	3%	0.9%	0.1%	0.3%	0.15%

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MATERIAL DATASHEET

CNC Materials

Measurement	PP	PTFE
Density	0.91 g/cm ³	1.54 g/cm ³
Tensile Strenght	28 ± 6 MPa	27 ± 4 MPa
Yield Strenght	31 ± 1 MPa	28 ± 11 MPa
Young's Modulus	1.30 GPa	1.55 GPa
Elongation at Break	10 ± 2% MPa	375 ± 75% MPa
Hardness	87HRR	58 Shore D
Melting Point	164°C	164°C
Electrical Conductivity	0 %IACS	0 %IACS
Water Absorption	0.01%	0.2%

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