



BULLTECH

Metal Materials



Stainless Steel, Type; 316L		
Physical Characteristics	particle size	15-53 μm
	Shape	Spherical
	flowability	40 S (Hall flow meter)
	apparent density	3.9 g /cm ³
	Density	7.98 g/cm ³
Chemical Composition	Fe	Remainder
	Cr	16 ~ 18 wt %
	Ni	10 ~ 14 wt %
	Mo	2 ~ 3 wt %
	Mn	≤ 2 wt %
	Si	≤ 1 wt %
	C	≤ 0.05 wt %
	P	≤ 0.045 wt%
	S	≤ 0.03 wt%
	O	≤ 0.1 wt%
Parts properties	Relative density	Approx. 99.9%
	Tensile strength	Approx. 560 MPa
	Yield strength	Approx. 480 MPa
	Elongation after fracture	Approx. 20%
	Elasticity modulus	Approx. 180 GPa
	Hardness	Approx. 85 HRB (158 HB)

Disclaimer:

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Aluminum alloy , Type: AlSi10Mg		
Physical Characteristics	particle size	15-53 μm
	Shape	Spherical
	flowability	150 S (Hall flow meter)
	apparent density	1.45 g/cm ³
	Density	2.67 g/cm ³
Chemical Composition	Al	Remainder
	Si	9 ~ 10 wt %
	Mg	0.2 ~ 0.45 wt %
	Cu	≤ 0.05 wt %
	Mn	≤ 0.45 wt %
	Ni	≤ 0.05 wt %
	Fe	≤ 0.55 wt%
	Ti	≤ 0.15 wt%
	C	≤ 0.0075 wt%
Parts properties	Relative density	$\geq 95\%$
	Tensile strength	Approx. 330 MPa
	Yield strength	Approx. 245 MPa
	Elongation after fracture	Approx. 6%
	Elasticity modulus	Approx. 70 GPa
	Hardness	Approx. 120 HB

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Nickel-base superalloy, Type: IN718		
Physical Characteristics	particle size	15-53 μm
	Shape	Spherical
	flowability	40 S (Hall flow meter)
	apparent density	4.1 g/cm ³
	Density	8.15 g/cm ³
Chemical Composition	Ni	50 ~ 55 wt %
	Cr	17 ~ 22 wt %
	Nb	4.75 ~ 5.5 wt%
	Mo	2.8 ~ 3.3 wt%
	Co	≤ 1 wt%
	C	≤ 0.08 wt%
	P	≤ 0.015 wt%
	Si	≤ 0.35 wt%
	Al	0.2 ~ 0.8 wt%
	Ti	0.65 ~ 1.15 wt%
Fe	Remainder	
Parts properties	Relative density	$\geq 99\%$
	Tensile strength	Approx. 980 MPa (1240 MPa after heat treatment)
	Yield strength	Approx. 780 MPa (1000 MPa after heat treatment)
	Elongation after fracture	12 ~ 30%
	Elasticity modulus	Approx. 160 GPa
	Hardness	Approx. 30 HRC (47 HRC after heat treatment)

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Maraging Steel, Type: MS1		
Physical Characteristics	particle size	15-53 μm
	Shape	Spherical
	flowability	40 S (Hall flow meter)
	apparent density	4.3 g/cm ³
	Density	8 g/cm ³
Chemical Composition	Fe	Remainder
	Co	8.5 ~ 9.5 wt %
	Ni	17 ~ 19 wt %
	Mo	4.2 ~ 5.2 wt %
	Mn	≤ 0.1 wt %
	Ti	0.6 ~ 0.8 wt %
	C	≤ 0.03 wt %
	Al	0.05 ~ 0.15 wt %
	S	≤ 0.01 wt %
	Cr	≤ 0.3 wt%
Parts properties	Relative density	$\geq 99\%$
	Tensile strength	Arrpox.1090 MPa (1930 MPa after heat treatment)
	Yield strength	Arrpox.1000 MPa (1890 MPa after heat treatment)
	Elongation after fracture	Arrpox.4%
	Elasticity modulus	Arrpox.160 GPa (180 GPa after heat treatment)
	Hardness	Arrpox.35 HRC

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Cobalt-chromium alloy, Type: MP1 (CoCr-2Lc)		
Physical Characteristics	particle size	15-53 μm
	Shape	Spherical
	flowability	40 S (Hall flow meter)
	apparent density	4.1 g/cm ³
	Density	8.3 g/cm ³
Chemical Composition	Co	Remainder
	Cr	26 ~ 30 wt %
	Mo	5 ~ 7 wt %
	Si	≤ 1 wt %
	Mn	≤ 1 wt %
	Fe	≤ 0.75 wt%
	C	≤ 0.16 wt%
	Ni	≤ 0.1 wt %
Parts properties	Relative density	$\geq 99\%$
	Tensile strength	Approx. 1100 MPa
	Yield strength	Approx. 900 MPa
	Elongation after fracture	Approx. 10%
	Elasticity modulus	Approx. 200 GPa
	Hardness	35 ~ 45 HRC (323 ~ 428 HB)

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Titanium alloy , Type: TC4 (Ti-6Al-4V)		
Physical Characteristics	particle size	15-45 µm
	Shape	Spherical
	flowability	45 S (Hall flow meter)
	apparent density	2.5 g/cm ³
	Density	4.51 g/cm ³
Chemical Composition	Ti	Remainder
	Al	5 ~ 6.75 wt %
	V	3.5 ~ 4.5 wt %
	Fe	≤0.25 wt %
	C	≤0.02 wt %
	Y	≤0.005 wt%
	O	0.14 ~ 0.16 wt %
	N	≤0.02 wt %
	Cu	≤0.1 wt%
Other	0.4 wt%	
Parts properties	Relative density	Approx.99.9%
	Tensile strength	Approx.1000 MPa
	Yield strength	Approx.900 MPa
	Elongation after fracture	Approx.10%
	Elasticity modulus	Approx.110 GPa
	Hardness	Approx.300 HV (294 HB)

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