NNF TECH

MATERIAL DATA SHEET

Material >>>		SS 17-4PH	42CrMo4	16MoCr5	100Cr6	SS 310 N	SS 304	SS 316L	SS 420 W	1010	4605	4340	8620	8740	FeSi3	FN02	FN08	FN0205	M2	P.A.N.A.C.E.A.
Chemical Composition	C (%)	≤ 0.07	0.35 – 0.45	0.14 – 0.19	0.80 – 1.05	0.20 – 0.50	≤ 0.06	≤ 0.06	0.35–0.50	≤ 0.15	0.4 – 0.6	0.35–0.45	0.12 – 0.23	0.45 – 0.55	≤ 0.10	≤ 0.10	0.4 – 0.6	0.4 – 0.6	0.95 – 1.05	≤ 0.2
	Cr (%)	15 –17.5	0.90 – 1.20	0.80 – 0.11	1.35 – 1.65	24 – 26	17 – 20	16 – 18	12 – 14	-	-	0.60 – 0.90	0.40 – 0.60	0.40 – 0.60	-	-	-	-	3.80 – 4.50	16.5 – 17.5
	Ni (%)	3 – 5	-	-	-	19 – 22	8 – 11	10 – 14	≤ 0.60	-	1.5 – 2.5	1.65 – 2.00	0.40 – 0.70	0.50 – 0.80	-	1.9 – 2.2	7.5 – 8.5	1.9 – 2.2	-	-
	Cu (%)	3 – 5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Nb (%)	0.15 – 0.45	-	-	-	1.2 – 1.5	-	-	1.0 – 2.0	-	-	-	-	-	-	-	-	-	-	-
	Mn (%)	≤ 1	-	0.10 – 1.30	-	≤ 1.5	≤ 2	≤ 2	≤ 1.0	0.3 – 0.66	-	-	-	-	-	-	-	-	-	10 – 12
	Si (%)	≤ 1	-	< 0.50	-	0.75 –1.30	≤ 1	≤ 1	≤ 1.0	≤ 0.4	≤ 1.0	-	-	-	2.5 – 3.0	-	-	-	-	≤ 1
	Mo (%)	-	0.15 – 0.30	-	-	-	-	2 – 3	≤ 0.65	-	0.2 – 0.5	0.2 – 0.3	0.15 – 0.25	0.25 – 0.40	-	-	-	-	4.50 – 5.50	3.0 – 3.5
	P (%)	-	-	< 0.035	-	-	-	-	≤ 0.040	≤ 0.045	-	-	-	-	-	-	-	-	-	-
	S (%)	-	-	< 0.035	-	-	-	-	≤ 0.030	≤ 0.045	-	-	-	-	-	-	-	-	-	-
	N (%)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.75 – 0.90
	W (%)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5.50 – 6.75	-
	V (%)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.75 – 2.20	-
	Other (%)	-	-	-	-	≤ 2.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Fe (%)	Balance	Balance	Balance	Balance	Balance	Balance	Balance	Balance	Balance	Balance	Balance	Balance	Balance	Balance	Balance	Balance	Balance	Balance	Balance
Density		≥ 7.55 g/cm3	≥ 7.40 g/cm3	≥ 7.40 g/cm3	≥ 7.50 g/cm3	7.60 g/cm3	≥ 7.7 g/cm3	≥ 7.8 g/cm3	≥ 7.55 g/cm3	≥ 7.5 g/cm3	≥7.5 g/cm3	≥ 7.50 g/cm3	≥ 7.4 g/cm3	≥ 7.5 g/cm3	≥ 7.5 g/cm3	≥ 7.5 g/cm3	≥ 7.5 g/cm3	≥ 7.5 g/cm3	≥ 7.8 g/cm3	≥ 7.5 g/cm3
Yield Strength(YS)	As Sintered	700 Mpa	≥ 370 Mpa	≥ 270 Mpa	≥ 450 Mpa	410 Mpa	≥ 140 MPa	≥ 160 MPa	≥ 590 Mpa	≥ 190 Mpa	≥ 360 Mpa	≥ 450 Mpa	≥ 360 Mpa	≥ 480 Mpa	≥ 300 Mpa	≥ 120 Mpa	≥ 370 Mpa	≥ 150 Mpa	≥ 750 Mpa	≥ 630 Mpa
	Heat Treated	≥ 900 Mpa	≥ 1190 MPa	≥ 560 Mpa	-	-	-	-	-	-	1030 Mpa	≥ 1190 Mpa	-	≥ 1320 MPa	-	-	≥ 1050 Mpa	≥ 660 MPa	-	-
Ultimate Tensile Strength(UTS)	As Sintered	910 Mpa	≥ 610 Mpa	≥ 350 Mpa	≥ 840 MPa	750 Mpa	≥ 560 Mpa	≥ 450 Mpa	≥ 740 Mpa	≥ 360 MPa	≥ 550 Mpa	≥ 630 Mpa	≥ 610 MPa	≥ 800 Mpa	≥ 500 Mpa	≥ 230 Mpa	≥ 650 Mpa	≥ 340 Mpa	≥ 1140 Mpa	≥ 1030 Mpa
	Heat Treated	≥ 1050 Mpa	≥ 1380 MPa	≥ 1010 Mpa	-	-	-	-	≥ 1480 Mpa	-	1240 Mpa	≥ 1400 Mpa	-	≥ 1520 MPa	-	-	≥ 1180 MPa	≥ 760 MPa	-	-
Elongation	As Sintered	6%	≥ 3 %	15%	≥ 5 %	16%	≥ 60 %	≥ 50 %	≥ 0.97 %	≥ 26 %	≥ 5 %	≥ 7 %	≥ 3 %	≥ 8 %	≥ 20 %	≥ 25 %	≥ 3 %	≥ 3 %	≥ 1 %	≥ 35 %
	Heat Treated	≥ 5 %	≥ 2 %	8%	-	-	-	-	≥ 0.85 %	-	≥ 5 %	≥ 2 %	-	≥ 5 %	-	-	≥ 3 %	≥ 5 %	-	-
Hardness	As Sintered	≤ 32 HRC	100–230 HV10	≥ 110 HV	180–290 HV10	210 HV1	130 HV10	110 HV10	≥ 560 HV1	-	≥ 120 HV10	170 – 250 HV10	150–230 HV10	140–210 HV10	120–160 HV1	70–110 HV10	130–280 HV10	100–150 HV10	≥ 48 HRC	220–300 HV10
	Heat Treated	≥ 37 HRC	≥ 40 HRC	≥ 36 HRC	≥ 55 HRC	-	-	-	≥ 680 HV1	630 HV1	≥ 40 HRC	≥ 42 HRC	≥ 575 HV1	≥ 460 HV1	-	≥ 49 HRC	≥ 38 HRC	300 HV10	≥ 58 HRC	-
DIN Equivalent		1.4542	1.7225	1.7131	1.3505	1.4848	1.4301	1.4404	1.4028	-	-	1.6565/1.6944, 40NiCrMo6	1.6523	1.6546	1.0884	-	-	-	1.3342	-
AISI Equivalent		S17400	4140	16MoCr5	E52100	-	304	316L	420F	1010	-	4340	8620	8740	-	-	-	-	M2 (high C)	-

*** Any other special material grades are on request.