

Material Chemical Composition

Code	Grade	C	Si	Mn	P	S	Cu	Ni	Cr	Mo	Other
405	13Cr-0.2A1	≤ 0.08	≤ 1.00	≤ 1.00	≤ 0.040	≤ 0.030	-	≤ 0.6	11.50~14.50	-	A1 0.10~0.30
410	13Cr	≤ 0.15	≤ 1.00	≤ 1.00	≤ 0.040	≤ 0.030	-	≤ 0.6	11.50~13.50	-	-
430	17Cr	≤ 0.12	≤ 0.75	≤ 1.00	≤ 0.040	≤ 0.030	-	≤ 0.6	16.00~18.00	-	-
443	22Cr-1Cu	≤ 0.2	≤ 0.75	≤ 1.00	≤ 0.040	≤ 0.030	0.90~1.25	≤ 0.5	18.00~23.00	-	-
446	25Cr	≤ 0.2	≤ 0.75	≤ 1.50	≤ 0.040	≤ 0.030	-	≤ 0.5	23.0~30.0	-	N 0.10~0.25
329	25Cr-4Ni-1.5Mo	≤ 0.08	≤ 1.00	≤ 1.50	≤ 0.040	≤ 0.030	-	3.00~6.00	23.00~28.00	1.00~3.00	-
430A	17Cr-Ti	≤ 0.1	≤ 1.00	≤ 1.00	≤ 0.040	≤ 0.030	-	-	16.00~18.00	-	Ti ≥ 7xC%
303	18Cr-9Ni-S	≤ 0.15	≤ 1.00	≤ 2.00	≤ 0.20	≤ 0.15	-	8.00~10.00	17.00~19.00	-	-
304	19Cr-10Ni	≤ 0.08	≤ 1.00	≤ 2.00	≤ 0.040	≤ 0.030	-	8.00~11.00	18.00~20.00	-	-
316	17Cr-12Ni-2.5Mo	≤ 0.08	≤ 1.00	≤ 2.00	≤ 0.040	≤ 0.030	-	10.00~14.00	16.00~18.00	2.00~3.00	-
304H	H * C-19Cr-10Ni	0.04~0.10	≤ 0.75	≤ 2.00	≤ 0.040	≤ 0.030	-	8.00~11.00	18.00~20.00	-	-
316H	H * C-17Cr-12Ni2-5Mo	0.04~0.10	≤ 0.75	≤ 2.00	≤ 0.030	≤ 0.030	-	11.00~14.00	16.00~18.00	2.00~3.00	-
321H	H * C-18Cr-11Ni-Ti	0.04~0.10	≤ 0.75	≤ 2.00	≤ 0.030	≤ 0.030	-	9.00~13.00	17.00~20.00	-	Ti 4xC%~0.60
347H	H * C-18Cr-11Ni-Nb	0.04~0.10	≤ 1.00	≤ 2.00	≤ 0.030	≤ 0.030	-	9.00~13.00	17.00~20.00	-	Nb+Ta 8xC%~1.00
348H	H * C-18Cr-11Ni-Nb(Ta)	0.04~0.10	≤ 1.00	≤ 2.00	≤ 0.040	≤ 0.03	-	9.00~13.00	17.00~20.00	-	Nb+Ta 8xC%~1.00 Ta ≤ 0.10
304L	L*C-19Cr-11Ni	≤ 0.030	≤ 1.00	≤ 2.00	≤ 0.040	≤ 0.030	-	9.00~13.00	18.00~20.00	-	-
316L	L*C-17Cr-14Ni-25Mo	≤ 0.030	≤ 1.00	≤ 2.00	≤ 0.040	≤ 0.030	-	12.00~16.00	16.00~18.00	2.00~3.00	-
321	18Cr-11Ni-Ti	≤ 0.08	≤ 1.00	≤ 2.00	≤ 0.040	≤ 0.030	-	9.00~13.00	17.00~19.00	-	Ti ≥ 5XC%
347	18Cr-11Ni-Nb	≤ 0.08	≤ 1.00	≤ 2.00	≤ 0.040	≤ 0.030	-	9.00~13.00	17.00~19.00	-	Nb+Ta ≥ 10XC%
348	18Cr-11Ni-Nb(Ta)	≤ 0.08	≤ 1.00	≤ 2.00	≤ 0.040	≤ 0.030	-	9.00~13.00	17.00~20.00	-	Nb+Ta10XC%~1.00 Ta≤ 0.10
316 Cu	18Cr-12Ni-2Mo-2Cu	≤ .008	≤ 1.00	≤ 2.00	≤ 0.040	≤ 0.030	1.00~2.50	10.00~14.00	17.00~19.00	1.20~2.75	-
316CuL	L*C-18Cr-14Ni-2Mo-2Cu	≤ 0.030	≤ 1.00	≤ 2.00	≤ 0.040	≤ 0.030	1~2.50	12.00~16.00	17.00~19.00	1.20~2.75	-
317	19Cr-13Ni-3.5Mo	≤ 0.08	≤ 1.00	≤ 2.00	≤ 0.040	≤ 0.030	-	11.00~15.00	18.00~20.00	3.00~4.00	-
317L	L*C-19Cr-14Ni-3.5Mo	≤ 0.030	≤ 1.00	≤ 2.00	≤ 0.040	≤ 0.030	-	11.00~15.0	18.00~20.00	3.00~4.00	-
316B	18Cr-12Ni-2.5Mo-Ti	≤ 0.10	≤ 1.00	≤ 2.00	≤ 0.045	≤ 0.030	-	10.5~13.5	16.5~18.5	2.00~2.50	Ti=5XC%
KCP20	20Cr-30Ni-3.0 Mo-4Cu	≤ 0.07	≤ 1.00	≤ 2.00	≤ 0.040	≤ 0.030	3.00~4.00	28.00~30.00	19.00~21.00	2.00~3.00	Nb=10XC%
309S	23Cr-14Ni	≤ 0.15	≤ 1.00	≤ 2.00	≤ 0.040	≤ 0.030	-	12.00~15.00	22.00~24.00	-	-
310S	25Cr-20Ni	≤ 0.15	≤ 1.50	≤ 2.00	≤ 0.040	≤ 0.030	-	19.00~22.00	24.00~26.00	-	-

Mechanical Properties

MECHANICAL PROPERTIES - ASTM A182

Symbol of class	Tensile Strength	Yield Strength	Elongation in 2in	Reduction of Area	Solution Temperature	Quenching Cool
	mm	N/mm ²	N/mm ²	%	°C	°C
F304	515(1)	205	30	50	1040	260
F304H	515(1)	205	30	50	1040	260
F304L	485(2)	170	30	50	1040	260
F304N	550	240	30(3)	50(4)	1040	260
F304LN	515(1)	205	30	50	1040	260
F309H	515(1)	205	30	50	1040	260
F310	515(1)	205	30	50	1040	260
F310H	515(1)	205	30	50	1040	260
F316	515(1)	205	30	50	1040	260
F316H	515(1)	205	30	50	1040	260
F316L	485(2)	170	30	50	1040	260
F316N	550	240	30(3)	50(4)	1040	260
F316LN	515(1)	205	30	50	1040	260
F317	515(1)	205	30	50	1040	260
F317L	485(2)	170	30	50	1040	260
F321	515(1)	205	30	50	1040	260
F321H	515(1)	205	30	50	1095	260
F347	515(1)	205	30	50	1040	260
F347H	515(1)	205	30	50	1095	260
F348	515(1)	205	30	50	1040	260
F348H	515(1)	205	30	50	1095	260

Notes:

- (1) For sections over 5in. in thickness, the minimum tensile strength shall be 485 MPa.
- (2) For sections over 5in. in thickness, the minimum tensile strength shall be 450 MPa.
- (3) Longitudinal. The transverse elongation shall be 25% in 2in. min.
- (3) Longitudinal. The transverse reduction of area shall be 45% min.