

Alloys in Common Use

Alloy	ASTM	Hardness HBN	Minimum Tensile Strength psi (MPa)	Minimum Yield Strength psi (MPa)	Elongation	Chemical Composition (Weight %)									
						C	Cr	Cu	Mn	Mo	Ni	P	Si	S	Fe
304L	ASTM A743 Grade CF-3	170	75,000 (517)	30,000 (207)	35%	0.03 max.	17 - 21	-	1.5 max.	-	8 - 12	0.04 max.	2 max.	0.04 max.	Balance
316L	ASTM A743 Grade CF-3M	180	70,000 (483)	30,000 (207)	30%	0.03 max.	17 - 22	-	1.5 max.	2 - 3	9 - 13	0.04 max.	1.5 max.	0.04 max.	Balance
Alloy 20	ASTM A743 Grade CN7M	125-160	62,000 (427)	25,000 (172)	35%	0.07	19 - 22	3 - 4	1.5 max.	2 - 3 max.	27.5 - 30.5	0.04 max.	1.5 max.	0.04 max.	Balance
Alloy B	ASTM A494 Grade N7M Mod.	190-210	76,000 (524)	40,000 (276)	20%	0.03 max.	1 max.	-	0.8 max.	27.5 - 33	Balance	0.04 max.	0.8 max.	0.03 max.	2 max.
Alloy C	ASTM A494 Grade CW-2M	140-170	72,000 (796)	40,000 (276)	20%	0.02 max.	15 - 17.5	-	1 max.	15 - 17	Balance	0.03 max.	0.8 max.	0.03 max.	2 max.
Alloy C Max	ASTM A494 Grade CW-2M	140-170	72,000 (796)	40,000 (276)	60%	0.02 max.	15 - 17.5	-	1 max.	15 - 17	Balance	0.03 max.	0.8 max.	0.03 max.	2 max.
Alloy G	ASTM A494 Grade CX2MW Mod.	190-250	80,000 (552)	45,000 (310)	30%	0.03 max.	28 - 31.5	1 - 2.4	1.5 max.	4 - 6	Balance	0.04 max.	0.8 max.	0.025 max.	13 - 17
CD4MCuN	ASTM A890 Grade 1B	245-265	100,000 (689)	70,000 (483)	16%	0.04 max.	24.5 - 26.5	2.75 - 3.25	1 max.	1.75 - 2.25	4.75 - 6	0.04 max.	1 max.	0.04 max.	Balance
WCD4™	ASTM A890 Grade 1B	320-370	150,000 (1,035)	112,000 (772)	16%	0.04 max.	24.5 - 26.5	2.75 - 3.25	1 max.	1.75 - 2.25	4.75 - 6	0.04 max.	1 max.	0.04 max.	Balance
MAXALLOY® 2	ASTM A532 Class II, Type B	650-720	-	-	-	2 - 3.3	14 - 18	1.2 max.	2 max.	3 max.	2.5 max.	0.1 max.	1.5 max.	0.06 max.	Balance
MAXALLOY® 5	ASTM A532 Class III, Type A	550-675	-	-	-	2 - 3.3 max.	23 - 30	1.2 max.	2 max.	3 max.	2.5 max.	0.1 max.	1.5 max.	0.06 max.	Balance
MAXALLOY® 5A	ASTM A532 Class III, Type A	700-800	-	-	-	2 - 3.3	23 - 30	1.2 max.	2 max.	3 max.	2.5 max.	0.1 max.	1.5 max.	0.06 max.	Balance
MAXALLOY® 10	<i>Proprietary</i>	365-420	-	-	-	-	-	-	-	-	-	-	-	-	-
NiHard	ASTM A532 Class I, Type D	600-655	-	-	-	2.5 - 3.6	7 - 11	-	2 max.	1.5 max.	4.5 - 7	0.1 max.	2 max.	0.15 max.	Balance
White Iron	<i>Similar to A532</i>	400 - 460	-	-	-	3.1 - 3.4	1.75 - 2.25	-	0.6 - 0.9	1 max.	-	0.1 max.	0.2 - 0.5 max.	0.1 max.	Balance
Ductile Iron	ASTM A536 Grade 65-45-12	140-180	-	-	-	3.4 - 3.9	0.3 max.	0.3 max.	0.4 max.	1 max.	1 max.	0.08 max.	2.4 - 2.9	0.02 max.	Balance

NOTES:

- Alloy C** and **Alloy C Max** also contain 1% max. tungsten (W)
- Alloy G** also contains 5% max. cobalt (Co), 2.5% - 3.5% tungsten (W), and 0.35% max. vanadium (V)
- CD4MCuN** and **WCD4™** also contain 0.1% - 0.25% nitrogen (N)