

Corrosion Resistant Alloys

ALLOY UNS No.	Werkstoffe	Chemical analysis %											Density		Temper	Tensile Rm (min)		Yield Rp 0.2% (min)		Elong. % min	Hardness HV	Application
		C	Mn	Ni	Cr	Fe	Mo	Ti	Nb	N	Al	Other	g/cm³	lb/in³		ksi	MPa	ksi	MPa			
316L S31603	1.4404	0.035 max	2.0 max	10.0-13.0	16.0-18.0	bal	2.0-2.5						7.93	0.286	ANN	70	485	25	170	35	200 max	Standard AOD melt austenitic stainless steel grade.
	2.5-3																					
316Ti S31635	1.4571	0.080 max	2.0 max	10.0-14.0	16.0-18.0	bal	2.0-3.0	5XC+N -0.700		0.10 max			7.93	0.286	ANN	70	485	25	170	35	200 max	Austenitic stainless steel with addition of 0.5% Ti to improve alloy stability at temperatures above 800°C.
904L N08904	1.4539	0.020 max	2.0 max	23.0-28.0	19.0-23.0	bal	4.0-5.0						8	0.289	ANN	70	485	40	275	35	200 max	Stainless steel with higher resistance to general, pitting & crevice corrosion than 316L.
6 Mo S31254	1.4547	0.020 max	1.0 max	17.5-18.5	19.5-20.5	bal	6.0-6.5			0.18-0.22			8	0.289	ANN	98	675	45	310	35	230 max	Super-austenitic stainless steel with good resistance to pitting and crevice corrosion.
Duplex S31803	1.4462	0.030 max	2.0 max	4.5-6.5	21.0-23.0	bal	2.5-3.5			0.08-0.20			7.8	0.281	ANN	90	620	65	450	25	290 max	High mechanical strength and good resistance to localised cracking & chloride stress corrosion.
Super Duplex S32750	1.441	0.030 max	1.2 max	6.0-8.0	24.0-26.0	bal	3.0-5.0			0.24-0.32			7.79	0.28	ANN	116	800	80	550	15	310 max	Superduplex alloy combining excellent strength with good corrosion resistance in high chloride and seawater environments.
Super Duplex S32760	1.4501	0.020	1.0 max	6.0-8.0	24-26	bal	3.0-4.0			24-32			7.70	0.278	ANN	109	750	73.5	507	35	310 max	
Alloy 22 N06022	2.4602	0.015 max	0.5 max	bal	20-22.5	2.0-6.0	12.5-14.5						8.61	0.311	ANN	100	690	45	310	45	270 max	Excellent sour service corrosion resistance combined with a very high pitting index.
Alloy 276 N10276	2.4819	0.02 max	1.0 max	bal	14.5-16.5	4.0-7.0	15.0-17.0						8.9	0.321	ANN	100	690	41	283	40	210 max	Excellent sour service corrosion resistance.
Alloy 59 N06059	2.4605	0.010 max	0.5 max	bal	22.0-24.0	1.5 max	15.0-16.5			0.10-0.40			8.60	0.311	ANN	100	690	45	310	45	270 max	Excellent in Sour Service Environments. Highly resistant to Chloride, Sea Waters and Acids.
Alloy 400 N04400	2.436	0.30 max	2.0 max	63.0-70.0		2.5 max							8.83	0.319	ANN	70	480	28	195	35	180 max	General purpose Ni alloy with a good combination of strength, ductility & corrosion resistances.
Alloy 600 N06600	2.4816	0.15 max	1.0 max	72.0 min	14.0-17.0	6.0-10.0							8.42	0.304	ANN	80	550	35	240	30	200 max	Very good combination of strength & oxidation resistance.
Alloy 625 N06625	2.4856	0.10 max	0.5 max	bal	20.0-23.0	5.0 max	8.0-10.0	0.40 max	3.15-4.15	0.40 max			8.44	0.305	ANN	120	827	60	414	30	260 max	Nickel alloy with very good resistance to pitting, crevice corrosion & sour well environments.
Alloy 718 N07718	2.4668	0.08 max	0.4 max	50.0-55.0	17.0-21.0	bal	2.80-3.30	0.65-1.15	4.75-5.50	0.20-0.80	Co 1.0 max		8.19	0.296	HT	185	1275	150	1034	12	331 min	Age hardenable, high strength nickel alloy with good sour well corrosion resistance.
Alloy 800 N08800	1.4876	0.15 max	1.5 max	30.0-35.0	19.0-23.0	39.5 min		0.15-0.60		0.15-0.60	Cu 0.75 max		8	0.289	ANN	75	517	30	207	30	200 max	Resistant to stress corrosion & good in aqueous media.
Alloy 800H N08810	1.4876	0.05-0.10	1.5 max	30.0-35.0	19.0-23.0	39.5 min		0.15-0.60		0.15-0.60	Cu 0.75 max		8.08	0.292	ANN	75	517	30	207	30	200 max	Excellent high temperature creep resistance, combined with oxidation and carburisation resistance.
Alloy 825 N08825	2.4858	0.05 max	1.0 max	38.0-46.0	19.5-23.5	bal	2.5-3.5	0.6-1.20		0.20 max	Cu 1.5-3.0		8.1	0.292	ANN	85	586	35	241	30	209 max	Very good sour well and chloride stress corrosion cracking resistance.
CP Grade 2 R50400	3.7035	0.08 max				0.30 max		bal		0.03 max			4.51	0.163	ANN	50	345	40-65	275-450	20		Very high strength to weight ratio combined with excellent seawater corrosion resistance.
Ti 3Al/2.5V Grade 9 R56320	3.7194	0.08 max				0.25 max		bal		0.03 max	2.5-3.50	V 2.0-2.5	4.48	0.162	CWSR	125	860	105	725	10		High strength to weight ratio. Excellent corrosion resistance.