Stainless Steel Grade Selection

Trade Desig.	UNS No.	Typical Composition (%)						Descriptions and Applications
		C	Mn	Cr	Mo	Ni	Others	
Austenitic Stainless Steels								
303	S30300	0.06	1.8	18		9	S 0.3	A dual purpose grade - for deep drawn components and high stength springs and panelling
304	S30100	0.05	1.5	18.5		9		Standard austenitic grade - excellent fabrication characteristics with good corrosion resistance. Also available as "Ugima" 304 improved machinability bar
304L	S30403	0.02	1.5	18.5		9		Low carbon version of 304 gives resistance to intergranular corrosion for heavy section welding and high temperature applications
308L	S30803	0.02	1	19.5		10.5		Filler wire for welding 304 and similar grades.
309	S30900	0.05	1.5	23		13.5		Good corrosion resistance and good resistance to attack by hot sulphur compounds in oxidising gases. Filler or welding dissimilar metals.
310	S31000	0.08	1.5	25		20		Good resistance to oxidation and carburising atmospheres in temperatures 850-1100°C.
316	S31600	0.05	1	17	2	11		Higher resistance than 304 to many media, particulary those containing chlorides. Also available as "Ugima" 316 improved machinability bar.
321	S32100	0.04	1	18		9	Ti 0.5	Titanium stabilized grade resists intergranular corrosion during exposure at 425-850°C. High strength in this temperature range.
253MA	S30815	0.08	0.8	21		11	N 0.17 Ce 0.05	Excellent scaling and creep resistance at temperatures up to 1150°C.
Ferritic Stainless Steel								
3CR12	S41003	0.03	1	11.5				"Utility" stainless steel with useful resistance to wet abrasion, and good formability and weldability.
409	S40900	0.06	1	11			Ti 0.4	Resists atmospheric and automotive exhaust gas corrosion. Used extensively in auto exhaust systems.
Duplex Stainless Steels								
2205	S31803	0.02	0.8	22	3	5	N 0.15	High strength and good resistance to pitting corrosion and stress corrosion cracking.
Martensitic Stainless Steels								
431	S43100	0.2	0.6	15		2		High strength, excellent toughness and corrosion resistance similar to that of 304. Used for pump shafts, bolts and valve components.
Precipitation Hardening Stainless Steels								
630	S17400	0.05	0.6	16		4	Cu 4 Nb 0.25	Precipitation hardening ("aging") treatment after machining gives high strength without distortion. Corrosion resistance similar to 304.