

Stainless Steel Chemical composition (JIS)

JIS G 4303 (2005)

Classification	Grade	Similar grade			Chemical composition											Applications
		AISI	DIN	EN	C	Si	Mn	P	S	Ni	Cr	Mo	Cu	N	Others	
Martensitic	SUS403	403			≤ 0.15	≤ 0.50	≤ 1.00	≤ 0.040	≤ 0.030	≤ (0.60)	11.50 ~ 13.00	—	—	—	—	Turbine blade, compressor, valve parts
	SUS410	410	X10Cr13	X12Cr13	≤ 0.15	≤ 1.00	≤ 1.00	≤ 0.040	≤ 0.030	≤ (0.60)	11.50 ~ 13.50	—	—	—	—	Machinery parts, pump shaft
	SUS410J1				0.08 ~ 0.18	≤ 0.60	≤ 1.00	≤ 0.040	≤ 0.030	≤ (0.60)	11.50 ~ 14.00	0.30 ~ 0.60	—	—	—	Turbine blade, machinery parts for high temperature
	SUS410F2				≤ 0.15	≤ 1.00	≤ 1.00	≤ 0.040	≤ 0.030	≤ (0.60)	11.50 ~ 13.50	—	—	—	Pb0.05 ~ 0.30	-
	SUS416	416		X12CrS13	≤ 0.15	≤ 1.00	≤ 1.25	≤ 0.060	≥ 0.15	≤ (0.60)	12.00 ~ 14.00	≤ (0.60)	—	—	—	Screw, bolt, nut
	SUS420J1	420	X20Cr13	X20Cr13	0.16 ~ 0.25	≤ 1.00	≤ 1.00	≤ 0.040	≤ 0.030	≤ (0.60)	12.00 ~ 14.00	—	—	—	—	Motor shaft, machinery parts
	SUS420J2	—	X20Cr13	X30Cr13	0.26 ~ 0.40	≤ 1.00	≤ 1.00	≤ 0.040	≤ 0.030	≤ (0.60)	12.00 ~ 14.00	—	—	—	—	Valve parts, knives, shaft, machining tool parts
	SUS420F				0.26 ~ 0.40	≤ 1.00	≤ 1.25	≤ 0.060	≥ 0.15	≤ (0.60)	12.00 ~ 14.00	≤ (0.60)	—	—	—	-
	SUS420F2				0.26 ~ 0.40	≤ 1.00	≤ 1.00	≤ 0.040	≤ 0.030	≤ (0.60)	12.00 ~ 14.00	—	—	—	Pb0.05 ~ 0.30	High strength machinery parts
	SUS431	431	X20CrNi17 2	X19CrNi17-2	≤ 0.20	≤ 1.00	≤ 1.00	≤ 0.040	≤ 0.030	1.25 ~ 2.50	15.00 ~ 17.00	—	—	—	—	Nozzle, bearing
	SUS440A	440A		X70CrMo15	0.60 ~ 0.75	≤ 1.00	≤ 1.00	≤ 0.040	≤ 0.030	≤ (0.60)	16.00 ~ 18.00	≤ (0.75)	—	—	—	Knives, valve
	SUS440B	440B			0.75 ~ 0.95	≤ 1.00	≤ 1.00	≤ 0.040	≤ 0.030	≤ (0.60)	16.00 ~ 18.00	≤ (0.75)	—	—	—	Corrosion and heat resistant bearing, knives
	SUS440C	440C		X105CrMo17	0.95 ~ 1.20	≤ 1.00	≤ 1.00	≤ 0.040	≤ 0.030	≤ (0.60)	16.00 ~ 18.00	≤ (0.75)	—	—	—	Bearing
	SUS440F	44020			0.95 ~ 1.20	≤ 1.00	≤ 1.25	≤ 0.060	≥ 0.15	≤ (0.60)	16.00 ~ 18.00	≤ (0.75)	—	—	—	-
Ferritic	SUS405	405	X6CrAl13	X6CrAl13	≤ 0.08	≤ 1.00	≤ 1.00	≤ 0.040	≤ 0.030	—	11.50 ~ 14.50	—	—	—	Al0.10 ~ 0.30	Turbine nozzle, welding parts, cast parts
	SUS410L				≤ 0.030	≤ 1.00	≤ 1.00	≤ 0.040	≤ 0.030	—	11.00 ~ 13.50	—	—	—	—	Burner parts
	SUS430	430	X6Cr17	X6Cr17	≤ 0.12	≤ 0.75	≤ 1.00	≤ 0.040	≤ 0.030	—	16.00 ~ 18.00	—	—	—	—	Kitchen, commodity, oxidation resistant parts below 900°C
	SUS430F	430F	X7CrMoS18	X6CrMoS17	≤ 0.12	≤ 1.00	≤ 1.25	≤ 0.060	≥ 0.15	—	16.00 ~ 18.00	≤ (0.60)	—	—	—	Bolt, nut
	SUS434	434	X6CrMo17 1	X6CrMo17-1	≤ 0.12	≤ 1.00	≤ 1.00	≤ 0.040	≤ 0.030	—	16.00 ~ 18.00	0.75 ~ 1.25	—	—	—	Automobile exterior equipment
	SUS447J1				≤ 0.010	≤ 0.40	≤ 0.40	≤ 0.030	≤ 0.020	≤ (0.50)	28.50 ~ 32.00	1.50 ~ 2.50	≤ (0.20)	≤ 0.015	(Ni+Cu) ≤ (0.50)	Pollution protection equipment
	SUSXM27				≤ 0.010	≤ 0.40	≤ 0.40	≤ 0.030	≤ 0.020	≤ (0.50)	25.00 ~ 27.50	0.75 ~ 1.50	≤ (0.20)	≤ 0.015	(Ni+Cu) ≤ (0.50)	Pollution protection equipment
Austenitic	SUS201	201		X12CrMnNiN17-7-5	≤ 0.15	≤ 1.00	5.50 ~ 7.50	≤ 0.060	≤ 0.030	3.50 ~ 5.50	16.00 ~ 18.00	—	—	≤ 0.25	—	Alternative grade of SUS301
	SUS202	202		X12CrMnNiN18-9-5	≤ 0.15	≤ 1.00	7.50 ~ 10.00	≤ 0.060	≤ 0.030	4.00 ~ 6.00	17.00 ~ 19.00	—	—	≤ 0.25	—	Alternative grade of SUS302
	SUS301	301	X12CrNi17 7		≤ 0.15	≤ 1.00	≤ 2.00	≤ 0.045	≤ 0.030	6.00 ~ 8.00	16.00 ~ 18.00	—	—	—	—	Spring, shaft
	SUS302	302			≤ 0.15	≤ 1.00	≤ 2.00	≤ 0.045	≤ 0.030	8.00 ~ 10.00	17.00 ~ 19.00	—	—	—	—	General corrosion resistance construction material, equipment parts
	SUS303	303	X10CrNiS18 9	X8CrNiS18-9	≤ 0.15	≤ 1.00	≤ 2.00	≤ 0.20	≥ 0.15	8.00 ~ 10.00	17.00 ~ 19.00	—	—	—	—	Automatic machined parts such as screw, bolt
	SUS303Se	303Se			≤ 0.15	≤ 1.00	≤ 2.00	≤ 0.20	≤ 0.060	8.00 ~ 10.00	17.00 ~ 19.00	—	—	—	Se ≥ 0.15	Screw
	SUS303Cu				≤ 0.15	≤ 1.00	≤ 3.00	≤ 0.20	≥ 0.15	8.00 ~ 10.00	17.00 ~ 19.00	—	1.50 ~ 3.50	—	—	Shaft
	SUS304	304	X5CrNi18 10	X4CrNi18-10	≤ 0.08	≤ 1.00	≤ 2.00	≤ 0.045	≤ 0.030	8.00 ~ 10.50	18.00 ~ 20.00	—	—	—	—	General corrosion resistance, food processing, equipment parts
	SUS304L	304L	X2CrNi19 11	X2CrNi19-11	≤ 0.030	≤ 1.00	≤ 2.00	≤ 0.045	≤ 0.030	9.00 ~ 13.00	18.00 ~ 20.00	—	—	—	—	To avoid intergranular corrosion (e.g. welding by SUS304)
	SUS304N1	304N			≤ 0.08	≤ 1.00	≤ 2.50	≤ 0.045	≤ 0.030	7.50 ~ 10.50	18.00 ~ 20.00	—	—	0.10 ~ 0.25	—	Structural parts for higher strength
	SUS304N2				≤ 0.08	≤ 1.00	≤ 2.50	≤ 0.045	≤ 0.030	7.50 ~ 10.50	18.00 ~ 20.00	—	—	0.15 ~ 0.30	Nb ≤ 0.15	Valve, pump
	SUS304LN	304LN	X2CrNiN18 10	X2CrNiN18-10	≤ 0.030	≤ 1.00	≤ 2.00	≤ 0.045	≤ 0.030	8.50 ~ 11.50	17.00 ~ 19.00	—	—	0.12 ~ 0.22	—	SUS304L with higher strength
	SUS304J3	S30431			≤ 0.08	≤ 1.00	≤ 2.00	≤ 0.045	≤ 0.030	8.00 ~ 10.50	17.00 ~ 19.00	—	1.00 ~ 3.00	—	—	Cold heading
	SUS305	305	X5CrNi18 12	X4CrNi18-12	≤ 0.12	≤ 1.00	≤ 2.00	≤ 0.045	≤ 0.030	10.50 ~ 13.00	17.00 ~ 19.00	—	—	—	—	Cold heading
	SUS309S	309S			≤ 0.08	≤ 1.00	≤ 2.00	≤ 0.045	≤ 0.030	12.00 ~ 15.00	22.00 ~ 24.00	—	—	—	—	Superior corrosion and oxidation resistance to 304. Parts for chemical plant, heat treatment, furnace
	SUS310S	310S		X6CrNi25-20	≤ 0.08	≤ 1.50	≤ 2.00	≤ 0.045	≤ 0.030	19.00 ~ 22.00	24.00 ~ 26.00	—	—	—	—	Superior corrosion and heat resistance to SUS309S. Parts for thermal exchanger and furnace.
	SUS312L				≤ 0.020	≤ 0.80	≤ 1.00	≤ 0.030	≤ 0.015	17.50 ~ 19.50	19.00 ~ 21.00	6.00 ~ 7.00	0.50 ~ 1.00	0.16 ~ 0.25	—	
	SUS316	316	X5CrNiMo17 12 2 X5CrNiMo17 13 3	X4CrNiMo17-12-2 X4CrNiMo17-13-3	≤ 0.08	≤ 1.00	≤ 2.00	≤ 0.045	≤ 0.030	10.00 ~ 14.00	16.00 ~ 18.00	2.00 ~ 3.00	—	—	—	Chemical plant equipment (paper, soap, chemical textile, fertilizer)
	SUS316L	316L	X2CrNiMo17 13 2 X2CrNiMo17 14 3	X2CrNiMo17-12-2 X2CrNiMo17-13-3	≤ 0.030	≤ 1.00	≤ 2.00	≤ 0.045	≤ 0.030	12.00 ~ 15.00	16.00 ~ 18.00	2.00 ~ 3.00	—	—	—	To avoid intergranular corrosion of SUS316
	SUS316N	316N			≤ 0.08	≤ 1.00	≤ 2.00	≤ 0.045	≤ 0.030	10.00 ~ 14.00	16.00 ~ 18.00	2.00 ~ 3.00	—	0.10 ~ 0.22	—	SUS316 with higher strength
	SUS316LN	316LN	X2CrNiMoN17 12 2 X2CrNiMoN17 13 3	X2CrNiMoN17-11-2 X2CrNiMoN17-13-3	≤ 0.030	≤ 1.00	≤ 2.00	≤ 0.045	≤ 0.030	10.50 ~ 14.50	16.50 ~ 18.50	2.00 ~ 3.00	—	0.12 ~ 0.22	—	SUS316 with higher strength
	SUS316Ti		X6CrNiMoTi17 12 2	X6CrNiMoTi17-12-2	≤ 0.08	≤ 1.00	≤ 2.00	≤ 0.045	≤ 0.030	10.00 ~ 14.00	16.00 ~ 18.00	2.00 ~ 3.00	—	—	Ti ≥ 5× C%	SUS316 with higher intergranular corrosion resistance
	SUS316J1				≤ 0.08	≤ 1.00	≤ 2.00	≤ 0.045	≤ 0.030	10.00 ~ 14.00	17.00 ~ 19.00	1.20 ~ 2.75	1.00 ~ 2.50	—	—	Chemical plant equipment (corrosion resistance plate or tube)
	SUS316J1L				≤ 0.030	≤ 1.00	≤ 2.00	≤ 0.045	≤ 0.030	12.00 ~ 16.00	17.00 ~ 19.00	1.20 ~ 2.75	1.00 ~ 2.50	—	—	To avoid intergranular corrosion of SUS316J1
	SUS316F				≤ 0.08	≤ 1.00	≤ 2.00	≤ 0.045	≥ 0.10	10.00 ~ 14.00	16.00 ~ 18.00	2.00 ~ 3.00	—	—	—	Watchband
	SUS317	317			≤ 0.08	≤ 1.00	≤ 2.00	≤ 0.045	≤ 0.030	11.00 ~ 15.00	18.00 ~ 20.00	3.00 ~ 4.00	—	—	—	Environment which requires corrosion resistance (e.g. dyeing machine)
	SUS317L	317L	X2CrNiMo18 16 4	X2CrNiMo18-15-4	≤ 0.030	≤ 1.00	≤ 2.00	≤ 0.045	≤ 0.030	11.00 ~ 15.00	18.00 ~ 20.00	3.00 ~ 4.00	—	—	—	Improved intergranular corrosion resistance of SUS317
	SUS317LN				≤ 0.030	≤ 1.00	≤ 2.00	≤ 0.045	≤ 0.030	11.00 ~ 15.00	18.00 ~ 20.00	3.00 ~ 4.00	—	0.10 ~ 0.22	—	SUS317L with higher strength
	SUS317J1				≤ 0.040	≤ 1.00	≤ 2.50	≤ 0.045	≤ 0.030	15.00 ~ 17.00	16.00 ~ 19.00	4.00 ~ 6.00	—	—	—	Thermal exchanger including chlorine ion
	SUS836L				≤ 0.030	≤ 1.00	≤ 2.00	≤ 0.045	≤ 0.030	24.00 ~ 26.00	19.00 ~ 24.00	5.00 ~ 7.00	—	≤ 0.25	—	Seawater resistance stainless steel
	SUS890L				≤ 0.020	≤ 1.00	≤ 2.00	≤ 0.045	≤ 0.030	23.00 ~ 28.00	19.00 ~ 23.00	4.00 ~ 5.00	1.00 ~ 2.00	—	—	Seawater resistance stainless steel
	SUS321	321	X6CrNiTi18 10	X6CrNiTi18-10	≤ 0.08	≤ 1.00	≤ 2.00	≤ 0.045	≤ 0.030	9.00 ~ 13.00	17.00 ~ 19.00	—	—	—	Ti ≥ 5× C%	Parts which are unable to be heat treated after welding. Equipment parts used between 730 ~ 900°C thermal condition.
	SUS347	347	X6CrNiNb18 10	X6CrNiNb18-10	≤ 0.08	≤ 1.00	≤ 2.00	≤ 0.045	≤ 0.030	9.00 ~ 13.00	17.00 ~ 19.00	—	—	—	Nb ≥ 10× C%	Superior intergranular corrosion resistance
	SUSXM15J1			X1CrNiSi18-15-4	≤ 0.08	3.00 ~ 5.00	≤ 2.00	≤ 0.045	≤ 0.030	11.50 ~ 15.00	15.00 ~ 20.00	—	—	Alloys can be added other than in the left rows as necessary.		Environment which includes chlorine ion
Precipitation hardening	SUS630	S17400		X5CrNiCuNb16-4	≤ 0.07	≤ 1.00	≤ 1.00	≤ 0.040	≤ 0.030	3.00 ~ 5.00	15.00 ~ 17.50	—	3.00 ~ 5.00	—	Nb0.15 ~ 0.45	-
	SUS631	S17700	X7CrNiAl17 7	X7CrNiAl17-7	≤ 0.09	≤ 1.00	≤ 1.00	≤ 0.040	≤ 0.030	6.50 ~ 7.75	16.00 ~ 18.00	—	—	—	Al0.75 ~ 1.50	-
Austenitic, ferritic	SUS329J1	329			≤ 0.08	≤ 1.00	≤ 1.50	≤ 0.040	≤ 0.030	3.00 ~ 6.00	23.00 ~ 28.00	1.00 ~ 3.00	—	—	—	Seawater pump
	SUS329J3L	S31803		X2CrNiMoN22-5-3	≤ 0.030	≤ 1.00	≤ 2.00	≤ 0.040	≤ 0.030	4.50 ~ 6.50	21.00 ~ 24.00	2.50 ~ 3.50	—	0.08 ~ 0.20	—	Stirring shaft
	SUS329J4L			X2CrNiMoCuN25-6-3	≤ 0.030	≤ 1.00	≤ 1.50	≤ 0.040	≤ 0.030	5.50 ~ 7.50	24.00 ~ 26.00	2.50 ~ 3.50	—	0.08 ~ 0.30	—	Stirring shaft