

## Stainless Pipe Composition Chart

A312/A312M Stainless Steel Pipe Composition Percentage\* Chart

Grade	Carbon (C)	Maganese (Mn)	Phosporus (P)	Sulphur (S)	Silicon (Si)	Chromium (Cr)	Nickel (Ni)	Molybenum (Mo)	Titanium (Ti)	Niobium (Nb)	Nitrogen (N)	UNS (#)	Tensile (ksi) (Min)	Yield (ksi) (Min)
304	0.08	2.00	0.045	0.030	1.00	18.0 -20.0	8.0 -11.0	...	...	...	...	S30400	75	30
304L	0.035 (A)	2.00	0.045	0.030	1.00	18.0 -20.0	8.0 -13.0	...	...	...	...	S30403	70	25
304H	0.04 - 0.10	2.00	0.045	0.030	1.00	18.0 -20.0	8.0 - 11.0	...	...	...	...	S30409	75	30
310S	0.08	2.00	0.045	0.030	1.00	24.0 -26.0	19.0 -22.0	0.75	...	...	...	S31008	75	30
310H	0.04-0.010	2.00	0.045	0.030	1.00	24.0 -26.0	19.0 -22.0	...	...	...	...	S31009	75	30
316	0.08	2.00	0.045	0.030	1.00	16.0 -18.0	10.0 -14.0	2.0-3.0	...	...	...	S31600	75	30
316L	0.035 (A)	2.00	0.045	0.030	1.00	16.0 -18.0	10.0 -14.0	2.0-3.0	...	...	...	S31603	70	25
316H	0.04-0.10	2.00	0.045	0.030	1.00	16.0 -18.0	10.0 -14.0	2.0-3.0	...	...	...	S31609	75	30
317	0.08	2.00	0.045	0.030	1.00	18.0-20.0	11.0-15.0	3.0-4.0	...	...	...	S31700	75	30
317L	0.035	2.00	0.045	0.030	1.00	18.0-20.0	11.0-15.0	3.0-4.0	...	...	...	S31703	75	30
321	0.08	2.00	0.045	0.030	1.00	17.0 -19.0	9.0 -12.0	...	(B)	...	0.10	S32100	75	30
321H	0.04 -0.10	2.00	0.045	0.030	1.00	17.0 -19.0	9.0 -12.0	...	4(C+N) min; 0.70 max	...	0.10	S32109	75	30
347	0.08	2.00	0.045	0.030	1.00	17.0 -19.0	9.0 -13.0	...	...	(C)	...	S34700	75	30
347H	0.04 -0.10	2.00	0.045	0.030	1.00	17.0 -19.0	9.0 -13.0	...	...	(D)	...	S34709	75	30

\*Maximum unless otherwise indicated. Where (...) appears in this table, there is no requirement and analysis for the element need not be determined or reported.

(A) For small diameter or thin walls or both, where many drawing passes are required, a carbon maximum of 0.040% is necessary in grades TP304L and TP316L. Small outside diameter tubes are defined as those less than 0.500 in. [12.7 mm] in outside diameter and light wall tubes as those less than 0.049 in. [1.20 mm] in average wall thickness (0.044 in. [1.10 mm] in minimum wall thickness).

(B) Type 321: For Titanium 5(C+N) min; 0.70 max.

(C) Type 347: The Niobium content shall not be less than 10 times the carbon content and not more than 1.00%

(D) Type 347H: The Niobium content shall not be less than 8 times the carbon content and not more than 1.0%

All percentages are based on ASTM A312/A312M-17 references as of 6/28/2018.