

Grade	UNS Designation ^A	C	Mn	P	S	Si	Cr	Ni	Mo	Ti	Nb	Ta _{max}	N	Other
TP304	S30400	0.08	2.00	0.045	0.030	1.00	18.0-20.0	8.0-11.0						
TP304L	S30403	0.035 ^B	2.00	0.045	0.030	1.00	18.0-20.0	8.0-13.0						
TP304H	S30409	0.04-0.10	2.00	0.045	0.030	1.00	18.0-20.0	8.0-11.0						
TP304N	S30451	0.08	2.00	0.045	0.030	1.00	18.0-20.0	8.0-11.0					0.10-0.16	
TP304LN	S30453	0.035	2.00	0.045	0.030	1.00	18.0-20.0	8.0-12.0					0.10-0.16	
TP309S	S30908	0.08	2.00	0.045	0.030	1.00	22.0-24.0	12.0-15.0	0.75					
TP309H	S30909	0.04-0.10	2.00	0.045	0.030	1.00	22.0-24.0	12.0-15.0						
TP309Cb	S30940	0.08	2.00	0.045	0.030	1.00	22.0-24.0	12.0-16.0	0.75		10°Cmin, 1.10max			
TP309HCb	S30941	0.04-0.10	2.00	0.045	0.030	1.00	22.0-24.0	12.0-16.0	0.75		10°Cmin, 1.10max			
TP310S	S31008	0.08	2.00	0.045	0.030	1.00	24.0-26.0	19.0-22.0	0.75					
TP310H	S31009	0.04-0.10	2.00	0.045	0.030	1.00	24.0-26.0	19.0-22.0						
TP310Cb	S31040	0.08	2.00	0.045	0.030	1.00	24.0-26.0	19.0-22.0	0.75		10°Cmin, 1.10max			
TP310HCb	S31041	0.04-0.10	2.00	0.045	0.030	1.00	24.0-26.0	19.0-22.0	0.75		10°Cmin, 1.10max			
TP316	S31600	0.08	2.00	0.045	0.030	1.00	16.0-18.0	10.0-14.0	2.00-3.00					
TP316L	S31603	0.035 ^B	2.00	0.045	0.030	1.00	16.0-18.0	10.0-14.0	2.00-3.00					
TP316H	S31609	0.04-0.10	2.00	0.045	0.030	1.00	16.0-18.0	10.0-14.0	2.00-3.00					
TP316Ti	S31635	0.08	2.00	0.045	0.030	0.75	16.0-18.0	10.0-14.0	2.00-3.00	5*(C+N) 0.70			0.10	
TP316N	S31651	0.08	2.00	0.045	0.030	1.00	16.0-18.0	10.0-14.0	2.00-3.00				0.10-0.16	
TP316LN	S31653	0.035	2.00	0.045	0.030	1.00	16.0-18.0	10.0-14.0	2.00-3.00				0.10-0.16	
TP317	S31700	0.08	2.00	0.045	0.030	1.00	18.0-20.0	11.0-15.0	3.00-4.00					
TP317L	S31703	0.035	2.00	0.045	0.030	1.00	18.0-20.0	11.0-15.0	3.00-4.00					
TP321	S32100	0.08	2.00	0.045	0.030	1.00	17.0-19.0	9.0-12.0		F			0.10	
TP321H	S32109	0.04-0.10	2.00	0.045	0.030	1.00	17.0-19.0	9.0-12.0		4*(C+N)min; 0.70max			0.10	
TP347	S34700	0.08	2.00	0.045	0.030	1.00	17.0-19.0	9.0-13.0			G			
TP347H	S34709	0.04-0.10	2.00	0.045	0.030	1.00	17.0-19.0	9.0-13.0			H			
TP347LN	S34751	0.005-0.020	2.00	0.045	0.030	1.00	17.0-19.0	9.0-13.0			0.20-0.50 ^I		0.06-0.10	
TP348	S34800	0.08	2.00	0.045	0.030	1.00	17.0-19.0	9.0-13.0			G	0.10		
TP348H	S34809	0.04-0.10	2.00	0.045	0.030	1.00	17.0-19.0	9.0-13.0			H	0.10		

A. New designation established in accordance with Practice E527 and SAE J1086.

B. Maximum, unless otherwise indicated.

C. The method of analysis for nitrogen shall be a matter of agreement between the purchaser and manufacturer.

D. 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.

E. For welded pipe, the phosphorus maximum shall be 0.045%.

F. Ti 5 × (C+N) min, 0.70 max.

G. The niobium content shall be not less than ten times the carbon content and not more than 1.00%. H. The niobium content shall be not less than eight times the carbon content and not more than 1.00%. I. Grade S34751 shall have a niobium content of not less than 15 times the carbon content.

组织类型	序号	GB/T 20878 统一数字代号	牌号	C	Si	Mn	P	S	Ni	Cr	Mo	Cu	N	其他
奥氏体型	1	S30210	12Cr18Ni9	0.15	1.00	2.00	0.035	0.030	8.00-10.00	17.00-19.00			0.10	
	2	S30408	06Cr19Ni10	0.08	1.00	2.00	0.035	0.030	8.00-10.00	18.00-20.00				
	3	S30403	022Cr19Ni10	0.03	1.00	2.00	0.035	0.030	8.00-12.00	18.00-20.00				
	4	S30458	06Cr19Ni10N	0.08	1.00	2.00	0.035	0.030	8.00-11.00	18.00-20.00			0.10-0.16	
	5	S30478	06Cr19Ni9NbN	0.08	1.00	2.50	0.035	0.030	7.50-10.50	18.00-20.00			0.15-0.30	Nb:0.15
	6	S30453	022Cr19Ni10N	0.03	1.00	2.00	0.035	0.030	8.00-11.00	18.00-20.00			0.10-0.16	
	7	S30908	06Cr23Ni13	0.08	1.00	2.00	0.035	0.030	12.00-15.00	22.00-24.00				
	8	S31008	06Cr25Ni20	0.08	1.50	2.00	0.035	0.030	19.00-22.00	24.00-26.00				
	9	S31608	06Cr17Ni12Mo2	0.08	1.00	2.00	0.035	0.030	10.00-14.00	16.00-18.00	2.00-3.00			
	10	S31603	022Cr17Ni12Mo2	0.03	1.00	2.00	0.035	0.030	10.00-14.00	16.00-18.00	2.00-3.00			
	11	S31609	07Cr17Ni12Mo2	0.04-0.10	1.00	2.00	0.035	0.030	10.00-14.00	16.00-18.00	2.00-3.00			
	12	S31668	06Cr17Ni12Mo2Ti	0.08	1.00	2.00	0.035	0.030	10.00-14.00	16.00-18.00	2.00-3.00			Ti:5C-0.70
	13	S31658	06Cr17Ni12Mo2N	0.08	1.00	2.00	0.035	0.030	10.00-13.00	16.00-18.00	2.00-3.00			0.10-0.16
	14	S31653	022Cr17Ni12Mo2N	0.03	1.00	2.00	0.035	0.030	10.00-13.00	16.00-18.00	2.00-3.00			0.10-0.16
	15	S31688	06Cr18Ni12Mo2Cu2	0.08	1.00	2.00	0.035	0.030	10.00-14.00	17.00-19.00	1.20-2.75	1.00-2.50		
	16	S31683	022Cr18Ni14Mo2Cu2	0.03	1.00	2.00	0.035	0.030	12.00-16.00	17.00-19.00	1.20-2.75	1.00-2.50		
	17	S31708	06Cr19Ni13Mo3	0.08	1.00	2.00	0.035	0.030	11.00-15.00	18.00-20.00	3.00-4.00			
	18	S31703	022Cr19Ni13Mo3	0.03	1.00	2.00	0.035	0.030	11.00-15.00	18.00-20.00	3.00-4.00			
	19	S32168	06Cr18Ni11Ti	0.08	1.00	2.00	0.035	0.030	9.00-12.00	17.00-19.00				Ti:5C-0.70
	20	S32169	07Cr19Ni11Ti	0.04-0.10	0.75	2.00	0.035	0.030	9.00-13.00	17.00-20.00				Ti:4C-0.60
	21	S34778	06Cr18Ni11Nb	0.08	1.00	2.00	0.035	0.030	9.00-12.00	17.00-19.00				Nb:10C-1.10
	22	S34779	07Cr18Ni11Nb	0.04-0.10	1.00	2.00	0.035	0.030	9.00-12.00	17.00-19.00				Nb:8C-1.10
铁素体型	23	S11348	06Cr13Al	0.08	1.00	1.00	0.035	0.030	0.60	11.50-14.50				Al:0.10-0.30
	24	S11510	10Cr15	0.12	1.00	1.00	0.035	0.030	0.60	14.00-16.00				
	25	S11710	10Cr17	0.12	1.00	1.00	0.035	0.030	0.60	16.00-18.00				
	26	S11863	022Cr18Ti	0.03	0.75	1.00	0.035	0.030	0.60	16.00-19.00				Ti或 Nb:0.10-1.00
	27	S11972	019Cr19Mo2NbTi	0.025	1.00	1.00	0.035	0.030	1.00	17.50-19.50	1.75-2.50		0.035	(Ti+Nb): [0.20+4*(C+N)] -0.80
马氏体型	28	S41008	06Cr13	0.08	1.00	1.00	0.035	0.030	0.60	11.50-13.50				
	29	S41010	12Cr13	0.15	1.00	1.00	0.035	0.030	0.60	11.50-13.50				



公称直径		管 外径		AISI B36.10 B36.19																
ND	NPS	D	Sch5S	Sch10S	Sch10	Sch20	Sch30	Sch40S	STD	Sch40	Sch60	Sch80	XS	Sch80S	Sch100	Sch120	Sch140	Sch160	XXS	
6	1/8	10.3	-	1.24	-	-	-	1.73	1.73	1.73	-	2.41	2.41	2.41	-	-	-	-	-	
8	1/4	13.7	-	1.65	-	-	-	2.24	2.24	2.24	-	3.02	3.02	3.02	-	-	-	-	-	
10	3/8	17.1	-	1.65	-	-	-	2.31	2.31	2.31	-	3.20	3.20	3.20	-	-	-	-	-	
15	1/2	21.3	1.65	2.11	-	-	-	2.77	2.77	2.77	-	3.73	3.73	3.73	-	-	-	4.78	7.47	
20	3/4	26.7	1.65	2.11	-	-	-	2.87	2.87	2.87	-	3.91	3.91	3.91	-	-	-	5.56	7.82	
25	1	33.4	1.65	2.77	-	-	-	3.38	3.38	3.38	-	4.55	4.55	4.55	-	-	-	6.35	9.09	
32	1 1/4	42.2	1.65	2.77	-	-	-	3.56	3.56	3.56	-	4.85	4.85	4.85	-	-	-	6.35	9.70	
40	1 1/2	48.3	1.65	2.77	-	-	-	3.68	3.68	3.68	-	5.08	5.08	5.08	-	-	-	7.14	10.15	
50	2	60.3	1.65	2.77	-	-	-	3.91	3.91	3.91	-	5.54	5.54	5.54	-	-	-	8.74	11.07	
65	2 1/2	73.0	2.11	3.05	-	-	-	5.16	5.16	5.16	-	7.01	7.01	7.01	-	-	-	9.53	14.02	
80	3	88.9	2.11	3.05	-	-	-	5.49	5.49	5.49	-	7.62	7.62	7.62	-	-	-	11.13	15.24	
90	3 1/2	101.6	2.11	3.05	-	-	-	5.74	5.74	5.74	-	8.08	8.08	8.08	-	-	-	-	-	
100	4	114.3	2.11	3.05	-	-	-	6.02	6.02	6.02	-	8.56	8.56	8.56	-	11.13	-	13.49	17.12	
125	5	141.3	2.77	3.4	-	-	-	6.55	6.55	6.55	-	9.53	9.53	9.53	-	12.7	-	15.88	19.05	
150	6	168.3	2.77	3.4	-	-	-	7.11	7.11	7.11	-	10.97	10.97	10.97	-	14.27	-	18.26	21.95	
200	8	219.1	2.77	3.76	-	6.35	7.04	8.18	8.18	8.18	10.31	12.7	12.7	12.7	15.09	18.26	20.62	23.01	22.23	
250	10	273.1	3.40	4.19	-	6.35	7.80	9.27	9.27	9.27	12.70	15.09	12.70	12.70	18.26	21.44	25.40	28.58	25.40	
300	12	323.9	3.96	4.57	-	6.35	8.38	9.53	9.53	10.31	14.27	17.48	12.70	12.70	21.44	25.40	28.58	33.32	25.40	
350	14	355.6	3.96	4.78	6.35	7.92	9.53	-	9.53	11.13	15.09	19.05	12.70	-	23.83	27.79	31.75	35.71	-	
400	16	406.4	4.19	4.78	6.35	7.92	9.53	-	9.53	12.70	16.66	21.44	12.70	-	26.19	30.96	36.53	40.49	-	
450	18	457.2	4.19	4.78	6.35	7.92	11.13	-	9.53	14.27	19.05	23.83	12.70	-	29.36	34.93	39.67	45.24	-	
500	20	508.0	4.78	5.54	6.35	9.53	12.70	-	9.53	15.09	20.62	26.19	12.70	-	32.54	38.10	44.45	50.01	-	
550	22	559	4.78	5.54	6.35	9.53	12.70	-	9.53	-	22.23	28.58	12.70	-	34.93	41.28	47.63	53.98	-	
600	24	610	5.54	6.35	6.35	9.53	14.27	-	9.53	17.48	24.61	30.96	12.70	-	38.89	46.02	52.37	59.54	-	
650	26	660	-	-	7.92	12.70	-	-	9.53	-	-	-	12.70	-	-	-	-	-	-	
700	28	711	-	-	7.92	12.70	15.88	-	9.53	-	-	-	12.70	-	-	-	-	-	-	
750	30	762	6.35	7.92	7.92	12.70	15.88	-	9.53	-	-	-	12.70	-	-	-	-	-	-	
800	32	813	-	-	7.92	12.70	15.88	-	9.53	17.48	-	-	12.70	-	-	-	-	-	-	
850	34	864	-	-	7.92	12.70	15.88	-	9.53	17.48	-	-	12.70	-	-	-	-	-	-	
900	36	914	-	-	7.92	12.70	15.88	-	9.53	19.05	-	-	12.70	-	-	-	-	-	-	
950	38	965	-	-	-	-	-	-	9.53	-	-	-	12.70	-	-	-	-	-	-	
1000	40	1016	-	-	-	-	-	-	9.53	-	-	-	12.70	-	-	-	-	-	-	
1050	42	1067	-	-	-	-	-	-	9.53	-	-	-	12.70	-	-	-	-	-	-	
1100	44	1118	-	-	-	-	-	-	9.53	-	-	-	12.70	-	-	-	-	-	-	
1150	46	1168	-	-	-	-	-	-	9.53	-	-	-	12.70	-	-	-	-	-	-	
1200	48	1219	-	-	-	-	-	-	9.53	-	-	-	12.70	-	-	-	-	-	-	