

ASTM Code	Chemical Compositions %											Mechanical				Hardness	Charpy
	C ≤	Mn ≤	P ≤	S ≤	Si ≤	Cr ≤	Mo ≤	Ni ≤	Cu ≤	V ≤	Nb ≤	Tensile MPa, ≥	Yield MPa, ≥	Elongation %, ≥	Reduce %, ≥	Brinell HB, ≤	J, ≥
A105	0.35	0.60~1.05	0.035	0.040	0.10~0.35	0.30	0.12	0.4	0.40	0.08	0.02	485	250	30	30	187	
A182F11	0.05~0.15	0.30~0.60	0.030	0.030	0.50~1.00	1.00~1.50	0.44~0.65					415	205	20	45	121~174	
A182F22	0.05~0.15	0.30~0.60	0.040	0.040	0.50	2.00~2.50	0.87~1.13					415	205	20	35	170	
A182F304	0.08	2.00	0.045	0.030	1.00	18.0~20.0		8.0~11.0				515	205	30	50		
A182F304L	0.030	2.00	0.045	0.030	1.00	18.0~20.0		8.0~13.0				485	170	30	50		
A182F316	0.08	2.00	0.045	0.030	1.00	16.0~18.0	2.00~3.00	10.0~14.0				515	205	30	50		
A182F316L	0.030	2.00	0.045	0.030	1.00	16.0~18.0	2.00~3.00	10.0~15.0				485	170	30	50		
A182F51	0.030	2.00	0.030	0.020	1.00	21.0~23.0	2.5~3.5	4.5~6.5				620	450	25	45		
A182F6a	0.15	1.00	0.040	0.030	1.00	11.5~13.5		0.50				585	380	18	35	167~229	
A193B7	0.37~0.49	0.65~1.10	0.035	0.040	0.15~0.35	0.75~1.20	0.15~0.25					860	720	16	50	321	
A193B7M	0.37~0.49	0.65~1.10	0.035	0.040	0.15~0.35	0.75~1.20	0.15~0.25	8.0~11.0				690	550	18	50	235	
A193B8	0.08	2.00	0.045	0.030	1.00	18.0~20.0		10.0~14.0		0.25~0.35		515	205	30	50	223	
A193B8M	0.08	2.00	0.045	0.030	1.00	16.0~18.0	2.00~3.00					515	205	30	50	223	
A193B16	0.36~0.47	0.45~0.70	0.035	0.040	0.15~0.35	0.80~1.15	0.50~0.65					860	720	18	50	321	
A1942H	≥0.40	1.00	0.040	0.050	0.04											248~352	
A1942HM	≥0.40	1.00	0.040	0.050	0.04			8.0~11.0								159~237	
A1948	0.08	2.00	0.045	0.030	1.00	18.0~20.0		10.0~14.0								126~300	
A1948M	0.08	2.00	0.045	0.030	1.00	16.0~18.0	2.00~3.00									126~300	
A216WCB	0.30	1.00	0.04	0.045	0.60	0.50	0.20	0.50	0.30	0.03		485~655	250	22	35		
A216WCC	0.25	1.20	0.04	0.045	0.60	0.50	0.2	0.50	0.30	0.03		485~655	275	22	35		
A217C5	0.20	0.40~0.70	0.04	0.045	0.75	4.00~6.50	0.45~0.65	0.50	0.50			620~795	415	18	35		
A217CA15	0.15	1.00	0.040	0.040	1.50	11.5~14.0	0.50	1.00				620~795	450	18	30		
A217WC6	0.05~0.20	0.50~0.80	0.04	0.045	0.60	1.00~1.50	0.45~0.65	0.50	0.50			485~655	275	20	35		
A217WC9	0.05~0.18	0.40~0.70	0.04	0.045	0.60	2.00~2.75	0.90~1.20		0.50			485~655	275	20	35		
A276410	0.08~0.15	1.00	0.040	0.030	1.00	11.5~13.5						480	275	20	45		
A276420	≥0.15	1.00	0.040	0.030	1.00	12.0~14.0										241	
A320L7	0.38~0.048	0.75~1.00	0.035	0.040	0.15~0.35	0.80~1.10	0.15~0.25					860	725	16	50		Avg:27; min:20
A320L7M	0.38~0.048	0.75~1.00	0.035	0.040	0.15~0.35	0.80~1.10	0.15~0.25					690	550	18	50	235	Avg:27; min:20
A336F22	0.05~0.15	0.30~0.60	0.025	0.025	0.50	2.00~2.50	0.90~1.10					515~690	310	19	40		
A350LF1	0.30	0.60~1.35	0.035	0.040	0.15~0.30	0.30	0.12	0.40	0.40	0.08	0.02	415~585	205	28	38		Avg:18; min:14
A350LF2	0.30	0.60~1.35	0.035	0.040	0.15~0.30	0.30	0.12	0.40	0.40	0.08	0.02	485~655	250	30	30		Avg:20; min:16
A351CF3	0.03	1.50	0.040	0.040	2.00	17.0~21.0	0.50	8.0~12.0				485	205	35.0			
A351CF3M	0.03	1.50	0.040	0.040	1.50	17.0~21.0	2.0~3.00	9.0~13.0				485	205	30.0			
A351CF8	0.08	1.50	0.040	0.040	2.00	18.0~21.0	0.50	8.0~11.0				485	205	35.0			
A351CF8M	0.08	1.50	0.040	0.040	1.50	18.0~21.0	2.0~3.00	9.0~12.0				485	205	30.0			
A351CF8C	0.08	1.50	0.040	0.040	2.00	18.0~21.0	0.50	9.0~12.0	3.0~4.0			485	205	30.0			
A351CN7M	0.07	1.50	0.040	0.040	1.50	19.0~22.0	2.0~3.00	27.5~30.5				425	170	35			
A352LC1	0.25	0.50~0.80	0.04	0.045	0.60		0.45~0.65					450~620	240	24	35		
A352LC2	0.25	0.50~0.80	0.04	0.045	0.60			2.00~3.00				485~655	275	24	35		Avg:18; min:14
A352LC3	0.15	0.50~0.80	0.04	0.045	0.60			3.00~4.00				485~655	275	24	35		Avg:20; min:16
A352LCB	0.30	1.00	0.04	0.045	0.60	0.50	0.20	0.50	0.30	0.03		450~620	240	24	35		Avg:20; min:16
A352LCC	0.25	1.20	0.04	0.045	0.60	0.50	0.20	0.50		0.03		485~655	275	22	35	139~202	Avg:18; min:14
A439D2	3.00	0.70~1.25	0.08		1.50~3.00	1.75~2.75		18.00~22.00				400	207	8.0			Avg:20; min:16