

Chemical Composition of Stainless Steel Pipe and Tube

Standard & Grade		Chemical Composition (%)								Solution Heat Treating Condition
		C	Si	Mn	P	S	Ni	Cr	Mo	
ASTM A312	TP304	≤0.080	≤1.00	≤2.00	≤0.045	≤0.030	8.0~11.0	18.0~20.0	-	Annealing Requirement 1040°C Min. Water Quenching
	TP304L	≤0.035	≤1.00	≤2.00	≤0.045	≤0.030	8.0~13.0	18.0~20.0	-	
	TP316	≤0.080	≤1.00	≤2.00	≤0.045	≤0.030	10.0~14.0	16.0~18.0	2.0~3.0	
	TP316L	≤0.035	≤1.00	≤2.00	≤0.045	≤0.030	10.0~14.0	16.0~18.0	2.0~3.0	
ASTM A778	TP304L	≤0.030	≤1.00	≤2.00	≤0.045	≤0.030	8.0~13.0	18.0~20.0	-	-
	TP316L	≤0.030	≤1.00	≤2.00	≤0.045	≤0.030	10.0~14.0	16.0~18.0	2.0~3.0	
ASTM A554	MT-304	≤0.080	≤1.00	≤2.00	≤0.045	≤0.030	8.0~11.0	18.0~20.0	-	-
	MT-304L	≤0.035	≤1.00	≤2.00	≤0.045	≤0.030	8.0~13.0	18.0~20.0	-	
	MT-316	≤0.080	≤1.00	≤2.00	≤0.045	≤0.030	10.0~14.0	16.0~18.0	2.0~3.0	
	MT-316L	≤0.035	≤1.00	≤2.00	≤0.045	≤0.030	10.0~15.0	16.0~18.0	2.0~3.0	
	S44100	≤0.030	≤1.00	≤1.00	≤0.040	≤0.030	≤1.00	17.5~19.5		
EN 10217-7	1.4301	≤0.070	≤1.00	≤2.00	≤0.045	≤0.015	8.0~10.5	17.5~19.5	—	When specified, Solution Temperature 1000~1100°C Water cooling
	1.4307	≤0.030	≤1.00	≤2.00	≤0.045	≤0.015	8.0~10.5	17.5~19.5	—	
	1.4401	≤0.070	≤1.00	≤2.00	≤0.045	≤0.015	10.0~13.0	16.5~18.5	2.0~2.5	When specified, Solution Temperature 1020~1120°C Water cooling
	1.4404	≤0.030	≤1.00	≤2.00	≤0.045	≤0.015	10.0~13.0	16.5~18.5	2.0~2.5	
EN 10312 10357	1.4301	≤0.070	≤1.00	≤2.00	≤0.045	≤0.015	8.0~10.5	17.5~19.5	—	-
	1.4307	≤0.030	≤1.00	≤2.00	≤0.045	≤0.015	8.0~10.5	17.5~19.5	—	
	1.4401	≤0.070	≤1.00	≤2.00	≤0.045	≤0.015	10.0~13.0	16.5~18.5	2.0~2.5	
	1.4404	≤0.030	≤1.00	≤2.00	≤0.045	≤0.015	10.0~13.0	16.5~18.5	2.0~2.5	