

Chemical Composition

Specification	Grade	C % max	Mn % max	P % max	S % max	Si % max	CE	
ASTM-A-204	B	0.20-0.23	0.90	0.035	0.035	0.15-0.40		
	Mo 0.45 - 0.60%							
ASTM-A -517	F	0.1-0.2	0.6-1.0	0.035	0.035	0.15-0.35		
	Ni 0.7-1.0, Cr 0.4-0.65, Mo 0.4-0.6, V 0.03-0.08, Cu 0.15- 0.50, Bo 0.0005-0.0006							
API-5L (PSL-I)	A	0.22	0.90	0.030	0.030			
	B	0.26	1.20	0.030	0.030			
	X-42	0.26	1.30	0.030	0.030			
	X-46	0.28	1.40	0.030	0.030			
	X-52	0.28	1.40	0.030	0.030			
	X-56	0.26	1.40	0.030	0.030			
	X-60	0.26	1.40	0.030	0.030			
	X-65	0.26	1.45	0.030	0.030			
	X-70	0.26	1.65	0.03	0.03			
	Nb + V + Ti < 0.15%							
IS: 3039/1988	I	0.23	*	0.040	0.040	**	0.42	***
* Mn content not less than 2.5 times Carbon content if thickness > 12.5 mm. ** Si 0.10-0.35% if killed quality. *** Al min 0.01%								
	II	0.21	0.70-1.4	0.040	0.040	0.10-0.35		
	III	0.18	0.70-1.5	0.040	0.040	0.19-0.50	*	
* Al min 0.015% for grade III								
Lloyds Grade	A	0.21	2.5xC% min	0.035	0.035	0.50		
	B	0.21	0.80min	0.035	0.035	0.35		
	For Gr B Mn 0.60% min if impact tested.							
SAILHARD	0.23		1.6	0.050	0.050	0.50		
	Al 0.10 max, Cr 0.65 max, Nb + V + Ti 0.15 max							
GOST 19282	09G2S	0.12	1.3-1.7	0.035	0.040	0.5-0.8		
	10G2S1	0.12	1.3-1.65	0.035	0.040	0.8-1.1		
	Al 0.050 max, Cr 0.30 max, Ni 0.30 max, Cu 0.30 max, Ti 0.03 max, N 0.008 max							