

Gas Tungsten Arc Welding Rods and Wires for Boiler Tube/Pipe

Brand Name	Identification Color		Specification		Dia. mm	Application and Characteristics
	End	Secondary	JIS	AWS		
YT-HCM2S	Red	—	☆ Z 3317 W57-2CMWV-Ni	—	1.0 1.2 1.6 2.0 2.4	Welding of HCM2S™ (2.25%Cr-1.6%W-Mo-Nb-V) such as ASTM T23/P23
YT-9ST	Black	—	☆ Z 3317 W62-9C1MV1	A5.28 ER90S-G	1.2 1.6 2.0 2.4	Welding of Mod. 9%Cr-1%Mo (9%Cr-1%Mo-Nb-V) such as ASTM T91/P91
YT-HCM12A	Yellow	—	☆ Z 3317 W69-10CMWV-Cu	—	1.0 1.2 1.6 2.0 2.4	Welding of HCM12A (11%Cr-2%W-0.4%Mo-Cu-Nb-V) such as ASTM T122/P122
YT-HR3C THR3C	Navy blue	(engraving) HR3C	—	—	1.0 1.2 1.6 2.0 2.4	Welding of HR3C (25%Cr-20%Ni-Nb-N) such as SA213 TP310HCbN

HCM2S is a trademark of NIPPON STEEL CORPORATION.
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Typical Chemical Composition of Weld Metal (%)						Typical Mechanical Properties of Weld Metal				PWHT
C	Si	Mn	P	S	Others	Yield Strength, MPa	Tensile Strength, MPa	Elongation, %	Charpy 2V-notch at 0°C, J	
0.05	0.38	0.85	0.004	0.004	Cr : 2.25 Mo : 0.10 Ni : 0.80 W : 1.6 Nb : 0.04 V : 0.25	780	860	21	70	As welded
0.07	0.08	1.05	0.008	0.005	Cr : 8.84 Mo : 1.01 Ni : 0.29 Nb : 0.05 V : 0.25	580	710	25	—	740°C× 8.4h
0.08	0.35	0.52	0.010	0.002	Cr : 10.4 Mo : 0.30 Ni : 1.10 W : 1.60 Nb : 0.05 V : 0.2 Cu : 1.4	660	790	24	110	740°C× 0.5h
0.06	0.30	1.51	0.003	0.005	Cr : 27.0 Mo : 0.91 Ni : 20.1 Cu : 2.94 Nb : 0.45 N : 0.31	480	710	35	—	As welded