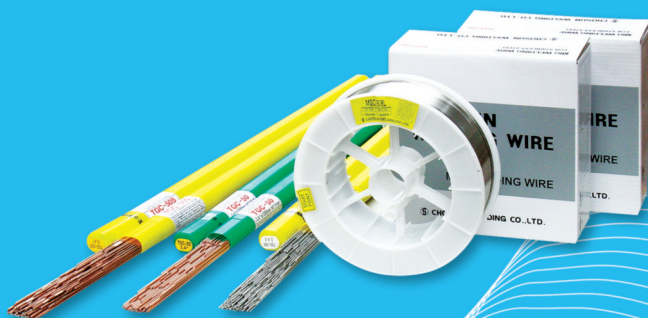


05

Solid Wire for Gas Tungsten Arc Welding For TIG Welding



Solid wire for TIG welding

Solid wire for stainless steel

Product Name	Specification		Shield gas	Application and features
	JIS	AWS		
TGC-308(L)	YS308(L)	ER308(L)	Ar	For welding of low carbon 18%Cr-8%Ni steel (SUS304L)
TGC-309(L)	YS309(L)	ER309(L)	Ar	For welding of 22%Cr-12%Ni steel (SUS309S), 18%Cr-8%Ni clad steel and dissimilar steels such as low alloy steel or mild steel to stainless steel.
TGC-310	YS310	ER310	Ar	For welding of 25%Cr-20%Ni steel (SUS310S)
TGC-316(L)	YS316(L)	ER316(L)	Ar	For welding of low carbon 18%Cr-12%Ni-Mo steel (SUS316L)
TGC-317(L)	YS317(L)	ER317(L)	Ar	For welding of low carbon 18%Cr-12%Ni-3%Mo steel
TGC-347	YS347	ER347	Ar	For welding of 18%Cr-8%Nb steel (SUS347) and 18%Cr-8%Ni-Ti Steel (SUS321)
TGC-410	YS410	ER410	Ar	For welding of 18%Cr steel (SUS403, SUS410)
TGC-430	YS430	ER430	Ar	For welding of 13%Cr steel (SUS430)
TGC-2209	YS2209	ER2209	Ar	For welding of duplex stainless steel (23%Cr-9%Ni-3%Mo)
TGC-2594	-	ER2594	Ar	For welding of duplex stainless steel (25%Cr-7%Ni-4.5%Mo-0.25%N)

Dia. (ϕ mm)	Typical chemical composition of weld metal (%)						Typical mechanical properties of weld metal			Tip color
	C	Mn	Si	Cr	Ni	Mo	TSN/mm ² (kgf/mm ²)	EL (%)	IV J (kgf-m)	
1.2 1.6 2.0 2.4 3.2	0.05 (0.022)	1.80	0.38	19.96	9.95	-	570(58)	45	0℃ 160(16) -196℃ 78(8.0)	Red
1.2 1.6 2.0 2.4 3.2	0.06 (0.023)	1.96	0.40	23.50	13.30	-	570(58)	40	0℃ 130(13)	Yellow -Green
1.6 2.0 2.4 3.0	0.09	1.90	0.36	26.73	20.90	-	610(62)	41	0℃ 110(11)	Gold
1.2 1.6 2.0 2.4 3.2	0.05 (0.020)	1.85	0.36	19.10	12.38	2.28	550(56)	44	0℃ 140(14) -196℃ 49(5.0)	Green
1.2 1.6 2.0 2.4 3.2	0.02 (0.015)	1.61	0.41	18.5	13.05	3.05	595(60)	43	0℃ 130(13)	-
1.2 1.6 2.0 2.4 3.2	0.05	1.80	0.39	19.55	9.57	Nb 0.80	640(65)	40	0℃ 88(9.0)	Blue
1.6 2.0 2.4 3.2	0.09	0.38	0.33	12.75	-	-	530(54)	37	-	Purple
1.6 2.0 2.4 3.2	0.05	0.35	0.34	16.35	-	-	530(54)	27	-	Light -Brown
1.2 1.6 2.0 2.4 3.2	0.01	1.75	0.40	22.6	8.70	3.20 N 0.15	820(83)	32	-46℃ 130(13)	-
1.2 1.6 2.0 2.4 3.2	0.02	0.76	0.43	24.8	8.7	3.92	893(90)	30	-50℃ 160(16)	-

Solid Wires For Ni and Cu Based Alloy

Product Name	Specification		Shield gas	Application and features
	JIS	AWS		
TGC-Ni1	S Ni2061	ER Ni-1	Ar	Repair welding of cast iron, cladding of carbon steel, stainless steel, dissimilar welding of MONEL, CUPRO Nickel
TGC-82	S Ni6082	ER NiCr-3	Ar	Dissimilar welding of INCONEL (600), stainless steel, INCONEL and carbon steel, nickel alloy.
TGC-625	S Ni6625	ER NiCrMo-3	Ar	For welding of INCONEL 625, dissimilar welding of INCONEL and Nickel alloy, for 9% Nickel steel, high temperature and low temperature steel.
TGC-276	S Ni6276	ER NiCrMo-4	Ar	For welding of Hastelloy C276, Overlay cladding of low alloy Or carbon steel
TGC-690A	S Ni6054	ER NiCrFe-7A	Ar	INCONEL 690, dissimilar welding of INCONEL, INCOLOY alloy, cladding of low alloy steel.
TGC-NiCu7	S Ni4060	ER NiCu-7	Ar	MONEL 400, dissimilar welding of MONEL and carbon steel, cladding of carbon steel.
TGC-CuNi	Y CuNi-3	ER CuNi	Ar	70%Cu-30%Ni CUPRO nickel, dissimilar welding of CUPRO nickel and copper alloy, cladding of carbon steel.

Solid wires for mild steel and high tensile strength steel

Product Name	Specification		Shield gas	Application and features
	JIS	AWS		
TGC-50S	W49A3U12	ER70S-6	Ar	For welding of mild steel, 50kgf/mm ² high tensile strength steel, aluminium killed steel, and one side-shielded welding of pipes.
TGC-50	W49A3U12	ER70S-G	Ar	For welding of mild steel, 50kgf/mm ² high tensile strength steel, aluminium killed steel, and one side-shielded welding of pipes.
TGC-50B	W55A3U2	ER70S-2	Ar	For welding of mild steel, 50kgf/mm ² high tensile strength steel, aluminium killed steel, and one side-shielded welding of pipes.

Dia. ($\varnothing$ mm)	Typical chemical composition of Welding Rod (%)														Typical mechanical properties		Ap- proval
	C	Mn	Si	P	S	Ni	Cu	Ti	Cr	Nb	Mo	Al	Fe	Pb	TS N/mm ² (kgf/mm ²)	EL (%)	
1.2 1.6 2.0 2.4 3.2	0.02	0.39	0.43	0.001	0.002	95.5	0.02	2.50	-	-	-	0.06	0.15	-	510	40.6	-
	0.01	3.20	0.10	0.002	0.002	72.9	0.01	0.35	20.5	2.70	-	-	0.10	-	680	41	-
	0.02	0.01	0.03	0.002	0.001	64.1	0.01	0.20	22.3	3.60	9.20	0.10	0.30	-	790	38	-
	0.01	0.02	0.47	REM	0.04	8.9	15.7	0.01	16.0	0.04	6.2	-	770	0.001	0.001	42	--
	0.02	0.25	0.17	0.004	0.001	REM	0.01	0.53	28.9	0.02	0.01	0.68	10.25	-	690	40	-
	0.09	3.10	0.18	0.005	0.003	65.0	REM	1.61	-	-	-	0.02	0.11	-	570	38	-
	0.03	0.54	0.03	-	0.003	31.1	67.24	0.29	-	-	-	0.01	0.54	0.02	374	36.3	-

Dia. ($\varnothing$ mm)	Typical chemical composition of weld metal (%)							Typical mechanical properties of weld metal			Tip color
	C	Mn	Si	P	S	Cr	Mo	TS N/mm ² (kgf/mm ²)	EL (%)	IV J (kgf-m)	
1.2 1.6 2.0 2.4 3.2	0.08	1.55	0.78	0.012	0.011	-	-	620(63)	32	-29℃ 160(16)	Yellow
1.2 1.6 2.0 2.4 3.2	0.06	1.45	0.72	0.013	0.010	-	-	590(60)	32	-29℃ 160(16)	Dark -Blue
1.2 1.6 2.0 2.4 3.2	0.05	1.10	0.54	0.007	0.006	-	-	580(59)	29	-29℃ 180(18)	Red

Solid wires for mild steel and high tensile strength steel

Product Name	Specification		Shield gas	Application and features
	JIS	AWS		
TGC-50C	W49A2U3	ER70S-3	Ar	For welding of mild steel, 50kgf/mm ² high tensile strength steel, aluminium killed steel, and one side-shielded welding of pipes.
TGC-50G	-	ER70S-G	Ar	For welding of mild steel, 50kgf/mm ² high tensile strength steel, aluminium killed steel, and one side-shielded welding of pipes.
TGC-90G	-	ER90S-G	Ar	For welding of mild steel, 60kgf/mm ² high tensile strength steel, aluminium killed steel, and one side-shielded welding of pipes.

Solid wires for heat-resistant, low-alloy steel

Product Name	Specification		Shield gas	Application and features
	JIS	AWS		
TGC-80D2	W 57 A 3 4M31	ER80S-D2	Ar	For welding of 0.5%Mo steel
TGC-80B2	W 55 1CM	ER80S-B2		For welding of 1.25%Cr-0.5%Mo steel
TGC-80Ni1	W 55 A 4 U N2	ER80S-Ni1		For welding of 1%Ni steel
TGC-90B3	W 62 2C1M	ER90S-B3		For welding of 2.25%Cr-1%Mo steel
TGC-90B9	W 62 9C1MV	ER90S-B9		For welding of 9%Cr-1%Mo steel

Solid wire for aluminium and aluminium alloy

Product Name	Specification		Shield gas	Application and features
	JIS	AWS		
TGC-1100	A1100-WY	ER1100	Ar	For welding of 1100, 1200, 3003, 304, 3203.
TGC-4043	A4043-WY	ER4043	Ar	For welding of 1100, 1200, 3003, 3203, 4043, 5052, 6061 TGC-4043 is Al-Si type solid wire whose hot crack resistibility is good.
TGC-5356	A5356-WY	ER5356	Ar	For welding of 5052, 5154, 5083, 6061, 6063. TGC-5356 is Al-Mg type.

Dia. ($\varnothing$ mm)	Typical chemical composition of weld metal (%)							Typical mechanical properties of weld metal			Tip color
	C	Mn	Si	P	S	Cr	Mo	TS N/mm ² (kgf/mm ²)	EL (%)	IV J (kgf-m)	
1.2 1.6 2.0 2.4 3.2	0.07	1.17	0.64	0.010	0.010	-	-	560(57)	32	-29℃ 140(14)	Green
1.2 1.6 2.0 2.4 3.2	0.08	1.43	0.37	0.013	0.010	-	-	570(58)	32	-29℃ 130(13)	White
1.2 1.6 2.0 2.4 3.2	0.07	1.38	0.56	0.005	0.003	1.1	0.05	640(65)	30	-29℃ 190(19)	-

Dia. ($\varnothing$ mm)	Typical chemical composition of Welding Rod(%)										TS of weld metal N/mm ²	Tip color
	C	Mn	Si	P	S	Cr	Mo	Ni	V	Nb		
1.2 1.6 2.0 2.4 3.2	0.1	1.8	0.7	0.016	0.010	-	0.5	-	-	-	745	-
	0.1	0.6	0.6	0.010	0.005	1.24	0.5	-	-	-	724	
	0.06	1.0	0.6	0.005	0.004	-	-	1.0	-	-	660	
	0.1	0.6	0.5	0.006	0.004	2.36	1.1	-	-	-	780	
	0.1	0.5	0.25	0.008	0.003	8.7	0.9	0.6	0.2	0.04 (N 0.05)	810	

Dia. ($\varnothing$ mm)	Typical chemical composition of weld metal (%)								TS of weld metal N/mm ² (kgf/mm ²)	Tip color
	Al	Si	Fe	Cu	Mn	Mg	Ti	Zn		
1.2 1.6 2.0 2.4 3.2	99.5	-	-	0.05 ~ 0.20	≤0.05	-	-	≤0.10	95(9.6)	Red
1.2 1.6 2.0 2.4 3.2	Balance	5.5	≤0.8	≤0.30	≤0.05	≤0.05	≤0.20	≤0.10	180(18.4)	Orange
1.2 1.6 2.0 2.4 3.2	Balance	-	-	≤0.10	0.05 ~ 0.20	5.0	0.06 ~ 0.20	≤0.10	280(29)	Yellow -Green