Stainless Steel for Gas Tungsten Arc Welding and Gas Metal Arc Welding

Product Name	Shielding gas	Classification AWS A5.9	Classification JIS Z3321	Dia. (mm)		Typical chemical composition of weld metal TS MPa (ksi)	Typical chemical composition of weld metal EL %	Mechanical properties C	Mn	Si	Cr	Ni	Mo	Cu	Applications and Characteristics
TGA-307Si	TGA 100%Ar MIG Ar+0.5-2%O_2	EN ISO 14343-A-W 18 8 Mn		TGA 1.2,1.6, 2.0, 2.4, 3.2, 4.0 MIG 0.8, 0.9, 1.0, 1.2, 1.6 TW 2.4,3.2 4.0	EN	Not specified		0.20	5.0 - 8.0	1.2	17.0 - 20.0	7.0 - 10.0	0.3	0.3	It is the same as ER307, except for the higher silicon content.
MIG-307Si		EN ISO 14343-A-G 18 8 Mn			AWS			0.04 - 0.14	3.3 - 4.75	0.30 - 0.65	19.5 - 22.0	8.0 - 10.7	0.5 - 1.5	0.75	
					Typical value	610(88)	40	0.08	6.7	0.9	18.7	8.2	0.05	-	
TGA-308/308L		ER 308/308L	Y 308/308L		EN	Not specified		0.03	1.0 - 2.5	0.65	19.0 - 21.0	9.0 - 11.0	0.3	0.3	The weld metal is 20Cr-10Ni stainless steel. It is suitable for the welding of AISI 304, 304L, 301, 302 and 321.
		EN ISO 14343-A-W 19 9 L													
MIG-308/308L		ER 308/308L	Y 308/308L		AWS			0.03	1.0 - 2.5	0.30 - 0.65	19.5 - 22.0	9.0 - 11.0	0.75	0.75	
		EN ISO 14343-A-G 19 9 L													
					Typical value	570(83)	38	0.02	1.65	0.50	19.8	10.3	0.12	-	
TGA-308LSi		ER 308LSi	EN ISO 14343-A-W 19 9 L Si		EN	Not specified		0.03	1.0 - 2.5	0.65 - 1.2	19.0 - 21.0	9.0 - 11.0	0.3	0.3	The weld metal with low carbon and higher silicon content improves the fluidity of the filler metal during welding.
MIG-308LSi			EN ISO 14343-A-G 19 9 L Si		AWS			0.03	1.0 - 2.5	0.65 - 1.2	19.5 - 22.0	9.0 - 11.0	0.75	0.75	
					Typical value	570(83)	38	0.02	1.60	0.73	19.7	9.2	0.12	-	
TGA-309/309L		ER 309/309L	Y 309/309L		EN	Not specified		0.03	1.0 - 2.5	0.65	22.0 - 25.0	11.0 - 14.0	0.3	0.3	The weld metal contains high Ni and Cr. Suitable for the welding of dissimilar metals such as mild steel to stainless steel.
		EN ISO 14343-A-W 23 12 L													
MIG-309/309L		ER 309/309L	Y 309/309L		AWS			0.03	1.0 - 2.5	0.3 - 0.65	23.0 - 25.0	12.0 - 14.0	0.75	0.75	
		EN ISO 14343-A-G 23 12 L													
					Typical value	590(86)	35	0.02	1.60	0.5	23.1	13.8	0.15	0.10	
TGA-309LSi		ER 309LSi	EN ISO 14343-A-W 23 12 L Si		EN	Not specified		0.03	1.0 - 2.5	0.65 - 1.2	22.0 - 25.0	11.0 - 14.0	0.3	0.3	The weld metal with low carbon and higher silicon content improves the fluidity of the filler metal during welding.
MIG-309LSi			EN ISO 14343-A-G 23 12 L Si		AWS			0.03	1.0 - 2.5	0.65-1.0	23.0 - 25.0	12.0 - 14.0	0.75	0.75	
					Typical value	610(88)	33	0.02	1.90	0.92	23.2	13.6	0.1	-	
TGA-309LMo		-	EN ISO 14343-A-W 23 12 2 L		EN	Not specified		0.03	1.0 - 2.5	1.0	21.0 - 25.0	11.0 - 15.5	2.0 - 3.5	0.3	The weld metal is low carbon 25Cr-12Ni-2.5Mo stainless steel. It can produces excellent oxidization resistance at high temperature. Suitable for welding of dissimilar metals.
MIG-309LMo			EN ISO 14343-A-G 23 12 2 L		AWS			0.03	1.0 - 2.5	0.30 - 0.65	23.0 - 25.0	12.0 - 14.0	2.0 - 3.0	0.75	
					Typical value	610(88)	33	0.02	1.40	0.4	21.2	14.8	2.6	0.14	
TGA-310		ER 310	Y 310		EN	Not specified		0.08 - 0.15	1.0 - 2.5	2.0	24.0 - 27.0	18.0 - 22.0	0.3	0.3	Excellent corrosion resistance, heat resistance, and toughness. Suitable for the welding of steel with high hardenability, and 13Cr steel.
		EN ISO 14343-A-W 25 20													
MIG-310		ER 310	Y 310		AWS			0.08 - 0.15	1.0 - 2.5	0.30 - 0.65	25.0 - 28.0	20.0 - 22.5	0.75	0.75	
		EN ISO 14343-A-G 25 20													
					Typical value	600(87)	38	0.11	1.60	0.40	26.5	20.80	0.10	-	
TGA-312		ER 312	Y 312		EN	Not specified		0.15	1.0 - 2.5	1.0	28.0 - 32.0	8.0 - 12.0	0.3	0.3	For welding of 29%Cr-9%Ni stainless cast steel. And dissimilar metal such as carbon steel or low alloy steel to stainless steel.
		EN ISO 14343-A-W 29 9													
MIG-312		ER 312	Y 312		AWS			0.15	1.0 - 2.5	0.30 - 0.65	28.0 - 32.0	8.0 - 10.5	0.75	0.75	
		EN ISO 14343-A-G 29 9													
					Typical value	700(102)	26	0.12	1.61	0.45	30.0	8.6	0.2	0.28	

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TIENTAI
AN ILLINOIS TOOL WORKS COMPANY
No.6, Kaifa 4th Rd., Rende Dist., Tainan City 717, Taiwan
TEL:886-6-2663721 /FAX:886-6-2664301
E-mail:twtrad@itwweld.com
http://www.tientai.com

Product Name	Shielding gas	Classification		Dia. (mm)	Pack (kg)	Typical chemical composition of weld metal		Mechanical properties							Applications and Characteristics
		AWS A5.9	JIS Z3321			TS MPa (ksi)	EL %	C	Mn	Si	Cr	Ni	Mo	Cu	
TGA-316/316L	TGA 100%Ar MIG Ar+0.5-2%O2	ER 316/316L	Y 316/316L	TGA 1.2,1.6, 2.0, 2.4, 3.2, 4.0 MIG 0.8, 0.9, 1.0, 1.2, 1.6 TW 2.4,3.2 4.0,4.8	EN	Not specified		0.03	1.0 - 2.5	0.65	18.0 - 20.0	11.0 - 14.0	2.5 - 3.0	0.3	For welding of 18% Cr-12%Ni-2%Mo stainless steel. It provides excellent creep strength, and resistance to sulfuric acid due to the Mo content.
		EN ISO 14343-A-W 19 12 3 L													
MIG-316/316L		ER 316/316L	Y 316/316L		AWS			0.03	1.0 - 2.5	0.30 - 0.65	18.0 - 20.0	11.0 - 14.0	2.0 - 3.0	0.75	
		EN ISO 14343-A-G 19 12 3 L													
					Typical value	590(86)	39	0.015	1.60	0.52	18.5	12.1	2.5	0.30	
TGA-316LSi		ER316LSi	Y 316LSi		EN	Not specified		0.03	1.0 - 2.5	0.65 - 1.2	18.0 - 20.0	11.0 - 14.0	2.5 - 3.0	0.3	The weld metal is ultra low carbon and higher silicon content improving the fluidity of the filler metal during welding.
		EN ISO 14343-A-W 19 12 3 L Si													
MIG-316LSi		ER316LSi	Y 316LSi		AWS			0.03	1.0 - 2.5	0.65 - 1.0	18.0 - 20.0	11.0 - 14.0	2.0 - 3.0	0.75	
		EN ISO 14343-A-G 19 12 3 L Si													
					Typical value	600(87)	38	0.015	1.50	0.8	18.3	12.5	2.5	0.35	
TGA-317L		ER 317	Y 317		EN	Not specified		0.03	1.0 - 5.0	1.0	17.0 - 20.0	12.0 - 15.0	3.0 - 4.5	0.3	For welding of low carbon 19%Cr-13%Ni-3%Mo stainless steel. Excellent intergranular corrosion resistance.
		EN ISO 14343-A-W 18 15 3 L													
MIG-317L		ER 317 L	Y 317		AWS			0.03	1.0 - 2.5	0.30 - 0.65	18.5 - 20.5	13.0 - 15.0	3.0 - 4.5	0.75	
		EN ISO 14343-A-G 18 15 3 L													
					Typical value	570(83)	41	0.015	1.86	0.45	19.4	14.0	3.2	0.10	
TGA-347		ER 347	Y 347		EN	Not specified		0.08	1.0 - 2.5	0.3	19.0 - 21.0	9.0 - 11.0	0.3	10x%C < 1.0	For welding of heat resistance steel. Excellent intergranular corrosion resistance due to Nb content, suitable for welding of AISI 347, 321, 304L.
		EN ISO 14343-A-W 19 9 Nb													
MIG-347		ER 347	Y 347		AWS			0.08	1.0 - 2.5	0.75	19.0 - 21.5	9.0 - 11.0	0.75	10x%C < 1.0	
		EN ISO 14343-A-G 19 9 Nb													
					Typical value	580(84)	38	0.05	1.6	0.43	19.3	9.2	0.1	Nb:0.57	
MIG-409Cb		ER 409Nb	-		EN	Not specified		-	-	-	-	-	-	-	For Welding of exhausting component.
					AWS			0.08	0.80	1.0	10.5 – 13.5	0.60	0.50	10x%C < 0.75	
		EN ISO 14343-B: SS 409 Nb			Typical value	-	-	0.02	0.48	0.49	11.3	0.26	0.09	Nb:0.35	
MIG-430		ER 430	Y 430		EN	Not specified		0.12	1.0	1.0	16.0 - 19.0	0.3	0.3	0.3	For welding of 16%Cr stainless steel.
		EN ISO 14343-A-G 17			AWS			0.10	0.6	0.5	15.5 - 17.0	0.6	0.75	0.75	
					Typical value	510(74)	23	0.015	0.43	0.41	16.4	0.23	0.02	0.05	
MIG-430LNb		-	-		EN	Not specified		-	-	-	-	-	-	-	For welding of 18%Cr stainless steel.
					AWS			0.02	0.8	0.5	17.8 – 18.8	0.5	0.5	0.05 + 7x(C+N) <0.5	
					Typical value	471(68)	28	0.02	0.40	0.40	18.0	0.20	0.03	Nb:0.40 Cu:0.10	
TGA-2209		ER 2209	EN ISO 14343-A-W 22 9 3 N L		EN	Not specified		0.03	2.5	1.0	21.0 - 24.0	7.0 - 10.0	2.5 - 4.0	0.3	For welding of 22%Cr duplex stainless steel such as LUS31803.
					AWS			0.03	0.5 - 2.0	0.9	21.5 - 23.5	7.5 - 9.5	2.5 - 3.5	0.75	
MIG-2209		ER 2209	EN ISO 14343-A-G 22 9 3 N L		Typical value	745(108)	27	0.02	1.4	0.41	23.0	8.7	3.18	N:0.151 Cu:0.04	

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＊Remark 1：Special products that meet the requirements of -196℃are also available. 2: Package Weight (kg) : TGA 5kg、10kg / MIG 15kg 、125kg、200kg / TW 25kg

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TIENTAI
AN ILLINOIS TOOL WORKS COMPANY
No.6, Kaifa 4th Rd., Rende Dist., Tainan City 717, Taiwan
TEL:886-6-2663721 /FAX:886-6-2664301
E-mail:twtrad@itwweld.com
http://www.tientai.com