TIG, MIG
Welding Consumables

TIG WELDING CONSUMABLES

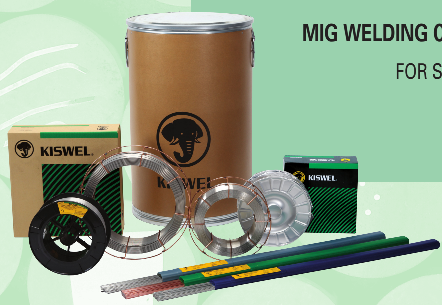
FOR HIGH TENSILE STRENGTH STEEL

FOR HEAT-RESISTING STEEL

FOR STAINLESS STEEL

MIG WELDING CONSUMABLES

FOR STAINLESS STEEL



T-50

For mild steels and 490MPa tensile strength steel

Classifications

EN 636-A:2008	: W 46 3 W3Si1	KS D 7140	: YGT50
EN 636-B:2008	: W 49A 3 U W6	JIS Z 3316	: YGT50
AWS A5.18-05	: ER70S-6		

Description

- For mild steel and 490MPa tensile strength steel welding of structural steels, machineries and vehicles.
- Excellent mechanical and toughness properties in low temperature conditions.
- It is generally used in root pass welding of pipes in all positions.
- Proper tungsten electrode extension from the tip of torch is 4~6mm in general.

Typical chemical composition of rod (%)

C	Si	Mn	P	S
0.07	0.82	1.52	0.012	0.015

Typical mechanical properties of all-weld-metal

	Y.S (MPa)	T.S (MPa)	El. (%)	IV (J) -30℃	Remarks
AWS A5.18	min. 400	min. 480	min. 22	≥ 27	Ar
EN 636-A	min. 460	530~680	min. 20	≥ 47	Ar
Example	490	580	30	130	Ar

Operating data

Dia.(mm)	2.4~3.2
Current (Amp.)	200 ~ 300

Polarity and Shielding gas

- DCEN (DC-)
- Ar : (15~25ℓ/min)

Approvals

Shielding gas	ABS	LR	KR
Ar	2YSA	4YMH15	RSW54G

Gas Tungsten Arc Welding

T-50G

For mild steels and 490MPa tensile strength steel

Classifications

EN 636-A:2008	: W 46 3 W3Si1	KS D 7140	: YGT50
EN 636-B:2008	: W 49A 3 U W6	JIS Z 3316	: YGT50
AWS A5.18-05	: ER70S-G		

Description

- For mild steel and 490MPa tensile strength steel welding of structural steels, machineries and vehicles.
- Excellent mechanical and toughness properties in low temperature conditions.
- It is generally used in root pass welding of pipes in all positions.
- Proper tungsten electrode extension from the tip of torch is 1~3mm in general.

Typical chemical composition of rod (%)

C	Si	Mn	P	S
0.07	0.82	1.52	0.012	0.015

Typical mechanical properties of all-weld-metal

	Y.S (MPa)	T.S (MPa)	El. (%)	IV (J) -30℃	Remarks
AWS A5.18	min. 400	min. 480	min. 22	≥ 27	Ar
EN 636-A	min. 460	530~680	min. 20	≥ 47	Ar
Example	490	580	30	130	Ar

Operating data

Dia.(mm)	2.4~3.2
Current (Amp.)	200 ~ 300

Polarity and Shielding gas

- DCEN (DC-)
- Ar : (15~25ℓ/min)

T-53

For mild steels and 490MPa tensile strength steel

Classifications

EN 636-A:2008	: W 46 3 W2Si1	KS D 7140	: YGT50
EN 636-B:2008	: W 49A 3 U W3	JIS Z 3316	: YGT50
AWS A5.18-05	: ER70S-3		

Description

- For mild steel and 490MPa tensile strength steel welding of structural steels, machineries and vehicles.
- Excellent mechanical and toughness properties in low temperature conditions.
- It is generally used in root pass and to support the welding when back pass is impossible.

Typical chemical composition of rod (%)

C	Si	Mn	P	S
0.07	0.65	1.18	0.010	0.009

Typical mechanical properties of all-weld-metal

	Y.S (MPa)	T.S (MPa)	El. (%)	IV (J) -30℃	Remarks
AWS A5.18	min. 400	min. 480	min. 22	≥ 27	Ar
EN 636-A	min. 460	530~680	min. 20	≥ 47	Ar
Example	480	550	32	120	Ar

Operating data

Dia.(mm)	2.4~3.2
Current (Amp.)	200 ~ 300

Polarity and Shielding gas

- DCEN (DC-)
- Ar : (15~25ℓ/min)

Gas Tungsten Arc Welding

T-70S2

For mild steels and 490MPa tensile strength steel

Classifications

EN 636-A:2008	: W 46 3 W2Ti	KS D 7140	: YGT50
EN 636-B:2008	: W 49A 3 U W2	JIS Z 3316	: YGT50
AWS A5.18-05	: ER70S-2		

Description

- For mild steel and 490MPa tensile strength steel welding of pipes, offshore drilling rigs and structural steels, etc.
- This rod is a multiple deoxidized rod containing small amounts of zirconium, titanium and aluminum in addition to the manganese and silicon deoxidizers characteristic of steel rod group.
- This rod producing superior quality welds with minimum porosity even over rust and mill scale.

Typical chemical composition of rod (%)

C	Si	Mn	P	S
0.07	0.54	1.18	0.015	0.011

Typical mechanical properties of all-weld-metal

	Y.S (MPa)	T.S (MPa)	El. (%)	IV (J) -30℃	Remarks
AWS A5.18	min. 400	min. 480	min. 22	≥ 27	Ar
EN 636-B	min. 390	490~670	min. 18	≥ 47	Ar
Example	490	570	29	180	Ar

Operating data

Dia.(mm)	2.4~3.2
Current (Amp.)	200 ~ 300

Polarity and Shielding gas

- DCEN (DC-)
- Ar : (15~25ℓ/min)

T-100

For 690MPa high strength steel

Classifications

AWS A5.28-05	: ER100S-1
EN ISO 16834-B:2007	: W 69A 5 U N3M2
JIS Z 3312	: W 69A 5 U N3M2

Description

- For TIG welding of 690MPa high tensile steel used for pipe line, offshore, structure, construction machinery, pressure vessels, etc
- Used for welding high strength steels in many high stress, critical applications; also exhibiting excellent toughness down to -50℃.
- Typical applications can be found in the mining, mobile cranes, cement pumps shipbuilding, automotive and pressure vessel industries.

Typical chemical composition of rod (%)

C	Si	Mn	P	S	Ni	Mo
0.05	0.26	1.51	0.006	0.005	1.95	0.40

Typical mechanical properties of all-weld-metal

	Y.S (MPa)	T.S (MPa)	El. (%)	IV (J) -50℃	Remarks
AWS A5.28	min. 610	min. 690~590	16	27	As weld, Ar
EN 16834-B	min. 600	min. 690~590	14	47(@-50℃)	As weld, Ar
Example	592	678	27	330(@-50℃)	As weld, Ar

Operating data

Dia.(mm)	Voltage	Ampere
0.9	10~12	50~70
1.2	10~12	70~100
1.6	12~15	100~125
2.4	15~20	125~175
3.2	15~20	175~200

Polarity and Shielding gas

- DCEN (DC-)
- Ar : 100%Ar (15~25ℓ/min.)

Gas Tungsten Arc Welding

T-120

For 830MPa high strength steel

Classifications

AWS A5.28-05	: ER120S-G
EN ISO 16834-A:2007	: W 69 6 M Z
EN ISO 16834-B:2007	: W 83A 6 U M 0
JIS Z 3312	: W 78 A 6 M 0

Description

- For MAG welding of 830MPa high tensile steel used for pipe line, offshore, structure, construction machinery, pressure vessels
- Welding materials such as S960QL – S1100Q and other similar fine grain cold tough steels.
- Proper tungsten electrode extension from the tip of torch is 4~6mm in general.

Typical chemical composition of rod (%)

C	Si	Mn	P	S	Ni	Mo
0.06	0.50	1.45	0.002	0.003	3.40	0.55

Typical mechanical properties of all-weld-metal

	Y.S (MPa)	T.S (MPa)	El. (%)	IV (J) -50℃	Remarks
AWS A5.28	-	min. 830	14	-	As weld, Ar
EN 16834-A	min. 600	min. 770~940	18	47(@-50℃)	As weld, Ar
EN 16834-B	min. 745	min. 830~1,030	12	27(@-50℃)	As weld, Ar
Example	840	920	20	200(@-50℃)	As weld, Ar

Operating data

Dia.(mm)	Voltage	Ampere
0.9	10~12	50~70
1.2	10~12	70~100
1.6	12~15	100~125
2.4	15~20	125~175
3.2	15~20	175~200

Polarity and Shielding gas

- DCEN (DC-)
- Ar : 100%Ar (15~25ℓ/min.)

T-80D2

For 0.5%Mo heat-resistant steel

Classifications

AWS A5.28-05 : ER80S-D2
KS D 7140 : YGTM
JIS Z 3316 : YGTM

Description

- For carbon and low alloy steels such as AISI 4130
- Where the tensile strength provided by plan carbon steel rod are inadequate.
- This rod is designed to give high strength welds on high sulfer bearing(free-machning) steels or medium carbon steels.
- This rod contains additional amounts of manganese and silicon which produces weld deposits which have high ductility, excellent impact values and tensile strength.

Typical chemical composition of rod (%)

C	Si	Mn	P	S	Mo
0.08	0.58	1.85	0.014	0.009	0.46

Typical mechanical properties of all-weld-metal

	Y.S (MPa)	T.S (MPa)	El. (%)	IV (J) -30℃	Remarks
AWS A5.28	min. 470	min. 550	min. 17	≥ 27	Ar
Example	610	690	23	180	Ar

Operating data

Dia.(mm)	2.4~3.2
Current (Amp.)	200 ~ 300

Polarity and Shielding gas

- DCEN (DC-)
- Ar : (15~25ℓ/min)

Gas Tungsten Arc Welding

T-81CMA

For 1.25%Cr-0.5%Mo heat-resistant steel

Classifications

AWS A5.28-05	: ER80S-G
JIS Z 3317 : 2013	: W 55-1CM3

Description

- For butt and filet welding of power plant, heat exchanger and oil refineries such as 1.25%Cr-0.5%Mo heat-resistant steel.
- Excellent mechanical and toughness properties after PWHT.
- Proper tungsten electrode extension from the tip of torch is 4~6mm in general.
- Preheat at 100℃ to 200℃ and post weld heat treatment at 620? to 720? is necessary according to the plate thickness, type of steels, shape of base metals or under high restricion.

Typical chemical composition of rod (%)

C	Si	Mn	P	S	Cr	Mo
0.10	0.55	0.90	0.010	0.003	1.29	0.49

Typical mechanical properties of all-weld-metal

	Y.S (MPa)	T.S (MPa)	El. (%)	IV (J) 20℃	Remarks
AWS A5.28	-	min. 550	-	-	PWHT, Ar
EN 16834-B	min. 355	min. 510	20	47	PWHT, Ar
JIS Z 3317	min. 470	min. 530	17	-	PWHT, Ar
Example	630	540	28	270	PWHT, Ar

* PWHT : 후열처리 620℃x1Hr

Operating data

Dia.(mm)	Voltage	Ampere
0.9	10~12	50~70
1.2	10~12	70~100
1.6	12~15	100~125
2.4	15~20	125~175
3.2	15~20	175~200

Polarity and Shielding gas

- DCEN (DC-)
- Ar : 100%Ar (15~25ℓ/min.)

T-80SB2

For 1.25%Cr-0.5%Mo heat-resistant steel

Classifications

EN ISO 21952-B:2007	: W 55 1CM	KS D 7140	: YGT1CM
AWS A5.28-05	: ER80S-B2	JIS Z 3317	: G 55-1CM

Description

- For butt and filet welding of power plant, heat exchanger and oil refineries such as 1.25%Cr-0.5%Mo heat-resistant steel.
- Excellent mechanical and toughness properties after PWHT.
- Proper tungsten electrode extension from the tip of torch is 4~6mm in general.
- Preheat at 100℃ to 200℃ and post weld heat treatment at 620℃ to 720℃ is necessary according to the plate thickness, type of steels, shape of base metals or under high restricion.

Typical chemical composition of rod (%)

C	Si	Mn	P	S	Cr	Mo
0.09	0.54	0.51	0.015	0.006	1.26	0.45

Typical mechanical properties of all-weld-metal

	Y.S (MPa)	T.S (MPa)	El. (%)	IV (J) 0℃	Remarks
AWS A5.28	min. 470	min. 550	min. 19	–	PWHT, Ar
EN ISO 21952-B	min. 470	min. 550	min. 17	–	PWHT
Example	500	590	26	80	PWHT, Ar

* PWHT : 620℃x1Hr

Operating data

Dia.(mm)	2.4~3.2
Current (Amp.)	200 ~ 300

Polarity and Shielding gas

- DCEN (DC-)
- Ar : (15~25ℓ/min)

T-90SB3

For 2.25%Cr-1%Mo heat-resistant steel

Classifications

EN ISO 21952-B:2007	: W 62 2C1M	KS D 7140	: YGT2CM
AWS A5.28-05	: ER90S-B3	JIS Z 3317	: G 55-1CM3

Description

- For butt and filet welding of power plant, heat exchanger and oil refineries such as 2.25%Cr-1%Mo heat-resistant steel.
- Excellent mechanical and toughness properties after PWHT.
- Proper tungsten electrode extension from the tip of torch is 4~6mm in general.
- Preheat at 150℃ to 300℃ and post weld heat treatment at 680℃ to 730℃ is necessary according to the plate thickness, type of steels, shape of base metals or under high restricion.

Typical chemical composition of rod (%)

C	Si	Mn	P	S	Cr	Mo
0.09	0.47	0.66	0.010	0.014	2.31	1.00

Typical mechanical properties of all-weld-metal

	Y.S (MPa)	T.S (MPa)	El. (%)	IV (J) 0℃	Remarks
AWS A5.28	min. 540	min. 620	min. 17	–	PWHT, Ar
EN ISO 21952-B	min. 540	min. 620	min. 15	–	PWHT
Example	550	670	26	180	PWHT, Ar

⁎ PWHT : 690℃x1Hr

Operating data

Dia.(mm)	2.4~3.2
Current (Amp.)	200 ~ 300

Polarity and Shielding gas

- DCEN (DC-)
- Ar : (15~25ℓ/min)

T-90SB9

For 9%Cr-1%Mo-V heat-resistant steel

Classifications

EN ISO 21952-A:2007 : CrMo91
EN ISO 21952-B:2007 : 9C1MV
AWS A5.28-05 : ER90S-B9

Description

- For butt and fillet welding of power plant, heat exchanger and oil refineries such as 9%Cr-1%Mo-V heat-resistant steel.
- Excellent mechanical and toughness properties after PWHT.
- Proper tungsten electrode extension from the tip of torch is 4~6mm in general.
- Preheat at 150°... to 300°... and post weld heat treatment at 740℃ to 780℃ is necessary according to the plate thickness, type of steels, shape of base metals or under high restriction.

Typical chemical composition of rod (%)

C	Si	Mn	P	S	Cr	Mo
0.10	0.23	0.75	0.005	0.002	9.10	0.94

Typical mechanical properties of all-weld-metal

	Y.S (MPa)	T.S (MPa)	El. (%)	IV (J) 20℃	Remarks
AWS A5.28	min. 410	min. 620	min. 16	≥ 27	PWHT, Ar
EN ISO 21952-A	min. 415	min. 585	min. 17	≥ 47	PWHT, Ar
EN ISO 21952-B	min. 415	min. 620	min. 15	–	PWHT, Ar
Example	673	745	20	334	PWHT, Ar

* PWHT : 760℃x2Hr

Operating data

Diameter (mm)	2.4~3.2
Current (Amp.)	200 ~ 300

Polarity and Shielding gas

- DCEN (DC-)
- Ar : 100%Ar (15~25ℓ/min)

Gas Tungsten Arc Welding

T-80SNi1

For low temperature service steel(1.0%Ni)

Classifications

AWS A5.28-05 : ER80S-Ni1
EN ISO 636-A : 2008 : W 46 6 W2Ni1
EN ISO 636-B : 2008 : W 55A 5 W2Ni1

Description

- It is designed for welding of 550MPa high tensile steel for low temperature service of below -45℃.
- Suited for welding 1%Ni steel and other low temperature for low temperature pressure vessel, tank and pipe.
- Very good weldability in out of position work
- GTAW rod for welding of low temperature equiment and structure

Typical chemical composition of rod (%)

C	Si	Mn	P	S	Ni
0.09	0.63	1.11	0.009	0.008	0.83

Typical mechanical properties of all-weld-metal

	Y.S (MPa)	T.S (MPa)	El. (%)	IV (J) -45℃	Remarks
AWS A5.28	min. 470	min. 550	24	27	-
Example	592	678	35	162(@-45℃) 133(@-60℃)	As Weld

Operating data

Dia.(mm)	Voltage	Ampere
0.9	10~12	50~70
1.2	10~12	70~100
1.6	12~15	100~125
2.4	15~20	125~175
3.2	15~20	175~200

Polarity and Shielding gas

- DCEN (DC-)
- Ar : 100%Ar (15~25ℓ/min)

T-80SNi2

For low temperature service steel(2.0%Ni)

Classifications

AWS A5.28-05 : ER80S-Ni2
EN ISO 636-A : 2008 : W 46 6 W2Ni2
EN ISO 636-B : 2008 : W 55A 5 W2Ni2

Description

- It is designed for welding of 550MPa high tensile steel for low temperature service of below -60℃
- Suited for welding 2%Ni steel and other low temperature for low temperature pressure vessel, tank and pipe.
- Very good weldability in out of position work
- GTAW rod for welding of low temperature equiment and structure

Typical chemical composition of rod (%)

C	Si	Mn	P	S	Ni
0.09	0.52	1.08	0.007	0.005	2.30

Typical mechanical properties of all-weld-metal

	Y.S (MPa)	T.S (MPa)	El. (%)	IV (J) -60℃	Remarks
AWS A5.28	min. 470	min. 550	24	27	-
Example	540	650	34	256(@-60℃) 166(@-70℃)	As Weld
Example	580	680	32	261(@-60℃) 221(@-70℃)	PWHT

⁎ PWHT : Postweld heat treatment (620℃x1Hr)

Operating data

Dia.(mm)	Voltage	Ampere
0.9	10~12	50~70
1.2	10~12	70~100
1.6	12~15	100~125
2.4	15~20	125~175
3.2	15~20	175~200

Polarity and Shielding gas

- DCEN (DC-)
- Ar : 100%Ar (15~25ℓ/min)

TIG Consumables

T-2209

For duplex stainless steels (Low carbon, 22%Cr-9%Ni-Mo STS)

Classifications

EN ISO 14343-A:2009 : W 22 9 3 N L
EN ISO 14343-B:2009 : SS 2209
AWS A5.9-07 : ER2209

Description

- TIG welding of 22%Cr-9%Ni-3%Mo duplex stainless steels (UNS S31803, STS 329J1, 329J2L)
- A various application of the petrochemical offshore structure and distilling apparatuses.

Typical chemical composition of wire (%)

C	Si	Mn	Ni	Cr	Mo
0.01	0.40	1.67	8.70	22.70	3.10

Typical mechanical properties of all-weld metal

	Y.S (MPa)	T.S (MPa)	El. (%)	IV (J) -47℃
AWS A5.9		min. 690	min. 20	
EN ISO 14343	min. 450	min. 550	min. 20	
Example	600	815	35	136

TIG Consumables

T-2594

For Super duplex stainless steels (25%Cr-9%Ni-4%Mo STS)

Classifications

EN ISO 14343-A:2009 : W 25 9 4 N L
EN ISO 14343-B:2009 : SS 2594
AWS A5.9-07 : ER2594

Description

- TIG welding of 25%Cr-9%Ni-4%Mo duplex stainless steels. (UNS S32750, S32760, S32550, S31260)
- A various application of the petrochemical offshore structure and distilling apparatuses.

Typical chemical composition of wire (%)

C	Si	Mn	Ni	Cr	Mo	PREN
0.02	0.42	0.66	9.18	25.06	3.88	41

Typical mechanical properties of all-weld metal

	Y.S (MPa)	T.S (MPa)	El. (%)	IV (J) 20℃	IV (J) -50℃
AWS A5.9		min. 760	min. 15		
EN ISO 14343	min. 550	min. 620	min. 30		
Example	640	800	32	220	200

TIG Consumables

T-308

For austenite stainless steel (18%Cr-8%Ni STS)

Classifications

EN ISO 14343-B:2009	: SS 308	KS D 7026:2005	: Y308
AWS A5.9-07	: ER308	JIS Z 3321:2008	: Y308

Description

- TIG welding of 18%Cr-8%Ni austenite stainless steels (AISI STS 301, 302, 304)
- A various application of the petrochemical , flesh water, medicine and fertilizer industrial apparatuses.

Typical chemical composition of wire (%)

C	Si	Mn	Ni	Cr
0.04	0.41	1.90	9.71	19.80

Typical mechanical properties of all-weld metal

	Y.S (MPa)	T.S (MPa)	El. (%)	IV (J) 0℃	IV (J) -196℃
AWS A5.9		min. 550	min. 35		
EN ISO 14343	min. 350	min. 550	min. 30		
Example	390	599	37	210	40

TIG Consumables

T-308L

For austenite stainless steel (Low carbon, 18%Cr-8%Ni STS)

Classifications

EN ISO 14343-A:2009	: W 19 9 L	KS D 7026:2005	: Y308L
EN ISO 14343-B:2009	: SS 308L	JIS Z 3321:2008	: Y308L
AWS A5.9-07	: ER308L		

Description

- TIG welding of 18%Cr-8%Ni austenite stainless steels (AISI STS 301, 302, 304)
- A various application of the petrochemical , nuclear power plant appratuese.

Typical chemical composition of wire (%)

C	Si	Mn	Ni	Cr
0.02	0.38	1.90	9.77	19.79

Typical mechanical properties of all-weld metal

	Y.S (MPa)	T.S (MPa)	El. (%)	IV (J) 0℃	IV (J) -196℃
AWS A5.9		min. 520	min. 35		
EN ISO 14343	min. 320	min. 510	min. 30		
Example	390	580	44	160	80

TIG Consumables

T-308H

For austenite stainless steel (Medium carbon, 18%Cr-8%Ni STS)

Classifications

EN ISO 14343-B:2009 : SS 308H
AWS A5.9-07 : ER308H

Description

- TIG welding of 18%Cr-8%Ni austenite stainless steels (AISI STS 304H)
- A various application of the petrochemical , flesh water, medicine and fertilizer industrial apparatuses.

Typical chemical composition of wire (%)

C	Si	Mn	Ni	Cr
0.05	0.42	2.06	9.80	19.80

Typical mechanical properties of all-weld metal

	Y.S (MPa)	T.S (MPa)	El. (%)
AWS A5.9		min. 550	min. 35
EN ISO 14343	min. 350	min. 550	min. 30
Example	350	590	42

TIG Consumables

T-308LSi

For austenite stainless steel (Low carbon, 18%Cr-8%Ni STS)

Classifications

EN ISO 14343-A:2009 : W 19 9 L Si
EN ISO 14343-B:2009 : SS 308L Si
AWS A5.9-07 : ER308L Si

Description

- TIG welding of 18%Cr-8%Ni austenite stainless steels (AISI STS 301, 302, 304)
- A various application of the petrochemical , nuclear power plant appratuese.

Typical chemical composition of wire (%)

C	Si	Mn	Ni	Cr
0.01	0.85	1.68	9.89	19.63

Typical mechanical properties of all-weld metal

	Y.S (MPa)	T.S (MPa)	El. (%)	IV (J) 0℃	IV (J) -196℃
AWS A5.9		min. 520	min. 35		
EN ISO 14343	min. 320	min. 510	min. 30		
Example	380	580	43	180	80

TIG Consumables

T-309

For austenite stainless steel (Dissimilar steels)

Classifications

EN ISO 14343-B:2009	: SS 309	KS D 7026:2005	: Y309
AWS A5.9-07	: ER309	JIS Z 3321:2008	: Y309

Description

- TIG welding of 22%Cr-12%Ni STS and dissimilar steels such as 304L to mild steels or low alloy steels.
- A various application of petrochemical and fiber industrial appratuese.

Typical chemical composition of wire (%)

C	Si	Mn	Ni	Cr
0.05	0.42	1.55	13.09	23.12

Typical mechanical properties of all-weld metal

	Y.S (MPa)	T.S (MPa)	El. (%)	IV (J) 0℃
AWS A5.9		min. 550	min. 25	
EN ISO 14343	min. 350	min. 550	min. 30	
Example	420	610	40	150

TIG Consumables

T-309L

For austenite stainless steel (Low carbon, Dissimilar steels)

Classifications

EN ISO 14343-B:2009	: SS 309L	KS D 7026:2005	: Y309L
AWS A5.9-07	: ER309L	JIS Z 3321:2008	: Y309L

Description

- TIG welding of 22%Cr-12%Ni STS and dissimilar steels such as 304L to mild steels or low alloy steels.
- A various application of petrochemical and fiber industrial appratuese.

Typical chemical composition of wire (%)

C	Si	Mn	Ni	Cr
0.01	0.45	1.64	13.78	23.09

Typical mechanical properties of all-weld metal

	Y.S (MPa)	T.S (MPa)	El. (%)	IV (J) 0℃
AWS A5.9		min. 520	min. 30	
EN ISO 14343	min. 320	min. 510	min. 25	
Example	430	590	42	110

TIG Consumables

T-309LSi

For austenite stainless steel (Low carbon, Dissimilar steels)

Classifications

EN ISO 14343-B:2009 : SS 309LSi
AWS A5.9-07 : ER309LSi

Description

- TIG welding of 22%Cr-12%Ni STS and dissimilar steels such as 304L to mild steels or low alloy steels.
- A various application of petrochemical and fiber industrial appratuese.

Typical chemical composition of wire (%)

C	Si	Mn	Ni	Cr
0.01	0.91	1.86	13.62	23.07

Typical mechanical properties of all-weld metal

	Y.S (MPa)	T.S (MPa)	El. (%)	IV (J) 0℃
AWS A5.9		min. 520	min. 30	
EN ISO 14343	min. 320	min. 510	min. 25	
Example	410	520	42	120

TIG Consumables

T-309LMo

For austenite stainless steel (22%Cr-12%Ni-Mo STS)

Classifications

EN ISO 14343-A:2009 : W 23 12 2 L
AWS A5.9-07 : ER309LMo

Description

- TIG welding of 22%Cr-12%Ni-2%Mo austenite stainless steels.
- A various application of the petrochemical plant appratuese.

Typical chemical composition of wire (%)

C	Si	Mn	Ni	Cr	Mo
0.01	0.45	1.51	14.62	21.59	2.60

Typical mechanical properties of all-weld metal

	Y.S (MPa)	T.S (MPa)	El. (%)	IV (J) 0℃	IV (J) -196℃
EN ISO 14343	min. 350	min. 550	min. 25		
Example	420	660	33	92	89

T-310

For austenite stainless steel (25%Cr-20%Ni STS)

Classifications

EN ISO 14343-B:2009	: SS 310	KS D 7026:2005	: Y310
AWS A5.9-07	: ER310	JIS Z 3321:2008	: Y310

Description

- TIG welding of 25%Cr-20%Ni austenite stainless steels (AISI 310S, SCS 18, SCh 21, 22, SUH 310)
- A various application of petrochemical and fiber industrial appratuese.

Typical chemical composition of wire (%)

C	Si	Mn	Ni	Cr
0.10	0.41	1.60	20.84	26.74

Typical mechanical properties of all-weld metal

	Y.S (MPa)	T.S (MPa)	El. (%)	IV (J) 0℃
AWS A5.9		min. 550	min. 30	
EN ISO 14343	min. 320	min. 550	min. 20	
Example	370	570	35	120

T-312

For austenite stainless steel (Dissimilar steels)

Classifications

EN ISO 14343-B:2009	: SS 312	KS D 7026:2005	: Y312
AWS A5.9	: ER312	JIS Z 3321:2008	: Y312

Description

- TIG welding of 29%Cr-9%Ni STS and dissimilar steels such as 304L to mild steels or low alloy steels.
- A various application to high, low carbon steel and cald welding.

Typical chemical composition of wire (%)

C	Si	Mn	Ni	Cr
0.11	0.41	1.81	8.92	30.63

Typical mechanical properties of all-weld metal

	Y.S (MPa)	T.S (MPa)	El. (%)
AWS A5.9		min. 660	min. 22
EN ISO 14343	min. 450	min. 650	min. 15
Example	500	790	25

TIG Consumables

T-316

For austenite stainless steel (18%Cr-12%Ni-Mo STS)

Classifications

EN ISO 14343-B:2009	: SS 316	KS D 7026:2005	: Y316
AWS A5.9-07	: ER316	JIS Z 3321:2008	: Y316

Description

- TIG welding of 18%Cr-12%Ni-2%Mo austenite stainless steels (AISI STS 316)
- A various application of the petrochemical industrial appratuese.

Typical chemical composition of wire (%)

C	Si	Mn	Ni	Cr	Mo
0.04	0.44	1.60	12.17	19.22	2.26

Typical mechanical properties of all-weld metal

	Y.S (MPa)	T.S (MPa)	El. (%)	IV (J) 0℃	IV (J) -196℃
AWS A5.9		min. 490	min. 30		
EN ISO 14343	min. 320	min. 510	min. 25		
Example	420	570	40	140	50

TIG Consumables

T-316L

For austenite stainless steel (Low carbon, 18%Cr-12%Ni-Mo STS)

Classifications

EN ISO 14343-A:2009	: W 19 12 3 L	KS D 7026:2005	: Y316L
EN ISO 14343-B:2009	: SS 316L	JIS Z 3321:2008	: Y316L
AWS A5.9	: ER316L		

Description

- TIG welding of 18%Cr-12%Ni-2%Mo austenite stainless steels (AISI STS 316, 316L)
- A various application of chemical plant, fiber and paper inductrial appratuese.

Typical chemical composition of wire (%)

C	Si	Mn	Ni	Cr	Mo
0.02	0.40	1.73	11.17	18.15	2.53

Typical mechanical properties of all-weld metal

	Y.S (MPa)	T.S (MPa)	El. (%)	IV (J) 0℃	IV (J) -196℃
AWS A5.9		min. 490	min. 30		
EN ISO 14343	min. 320	min. 510	min. 25		
Example	430	560	40	150	45

TIG Consumables

T-316H

For austenite stainless steel (18%Cr-12%Ni-Mo STS)

Classifications

EN ISO 14343-B:2009 : SS 316H
AWS A5.9-07 : ER316H

Description

- TIG welding of 18%Cr-12%Ni-2%Mo austenite stainless steels (AISI STS 316)
- A various application of the petrochemical industrial appratuese.

Typical chemical composition of wire (%)

C	Si	Mn	Ni	Cr	Mo
0.04	0.44	1.60	12.17	19.22	2.26

Typical mechanical properties of all-weld metal

	Y.S (MPa)	T.S (MPa)	El. (%)	IV (J) 0℃	IV (J) -196℃
AWS A5.9		min. 490	min. 30		
EN ISO 14343	min. 350	min. 550	min. 25		
Example	420	570	40	140	50

TIG Consumables

T-316LSi

For austenite stainless steel (Low carbon, 18%Cr-12%Ni-Mo STS)

Classifications

EN ISO 14343-A:2009 : W 19 12 3 L Si AWS A5.9 : ER316LSi
EN ISO 14343-B:2009 : SS 316LSi

Description

- TIG welding of 18%Cr-12%Ni-2%Mo austenite stainless steels (AISI STS 316, 316L)
- A various application of the petrochemical industrial appratuese.

Typical chemical composition of wire (%)

C	Si	Mn	Ni	Cr	Mo
0.01	0.87	1.55	11.57	18.58	2.54

Typical mechanical properties of all-weld metal

	Y.S (MPa)	T.S (MPa)	El. (%)	IV (J) 0℃	IV (J) -196℃
AWS A5.9		min. 490	min. 30		
EN ISO 14343	min. 320	min. 510	min. 25		
Example	420	560	34	150	50

TIG Consumables

T-317L

For austenite stainless steel (Low carbon, 20%Cr-14%Ni-Mo STS)

Classifications

EN ISO 14343-B:2009	: SS 317L	KS D 7026:2005	: Y317L
AWS A5.9	: ER317L	JIS Z 3321:2008	: Y317L

Description

- TIG welding of 20%Cr-14%Ni-3.5Mo austenite stainless steels (AISI STS 316, 316L, 317)
- A various application of the petrochemical industrial appraturese used in acid atmosphere.

Typical chemical composition of wire (%)

C	Si	Mn	Ni	Cr	Mo
0.01	0.38	1.63	13.52	19.06	3.09

Typical mechanical properties of all-weld metal

	Y.S (MPa)	T.S (MPa)	El. (%)	IV (J) 0℃	IV (J) -196℃
AWS A5.9		min. 520	min. 30		
EN ISO 14343	min. 300	min. 480	min. 25		
Example	380	560	34	150	50

TIG Consumables

T-347

For austenite stainless steel (Low Carbon, 20%Cr-10%Ni-Nb STS)

Classifications

EN ISO 14343-B:2009	: SS 347	KS D 7026:2005	: Y347
AWS A5.9	: ER347	JIS Z 3321:2008	: Y347

Description

- TIG welding of 20%Cr-10%Ni-Nb austenite stainless steels (AISI STS 347, 321)
- A various application of chemical plant industrial appratuese.

Typical chemical composition of wire (%)

C	Si	Mn	Ni	Cr	Nb+Ta
0.05	0.40	1.55	9.03	19.04	0.68

Typical mechanical properties of all-weld metal

	Y.S (MPa)	T.S (MPa)	El. (%)	IV (J) 0℃	IV (J) -196℃
AWS A5.9		min. 520	min. 30		
EN ISO 14343	min. 350	min. 550	min. 25		
Example	400	630	40	90	36

TIG Consumables

T-410

For martensite stainless steel (Low Carbon,12%Cr STS)

Classifications

EN ISO 14343-B:2009	: SS 410	KS D 7026:2005	: Y410
AWS A5.9	: ER410	JIS Z 3321:2008	: Y410

Description

- TIG welding of 12%Cr martensite stainless steels. (AISI STS 403, 410)
- It's used for surfacing of sealing faces of valves for gas, water and steam piping system at service temperatures up to 450℃

Typical chemical composition of wire (%)

C	Si	Mn	Ni	Cr
0.01	0.32	0.36	0.19	12.61

Typical mechanical properties of all-weld metal

	Y.S (MPa)	T.S (MPa)	El. (%)	Remark
AWS A5.9		min. 520	min. 20	PWHT
EN ISO 14343	min. 250	min. 450	min. 15	PWHT
Example	320	530	37	PWHT

⁎ PWHT : Heat to 730~760℃ for 1h

TIG Consumables

T-420

For martensite stainless steel (12%Cr STS)

Classifications

EN ISO 14343-B:2009	: SS 420
AWS A5.9	: ER420

Description

- TIG welding of 12%Cr martensite stainless steels. (AISI 420)
- It's used for surfacing of sealing faces of valves for gas, water and steam piping system at service temperatures up to 450℃

Typical chemical composition of wire (%)

C	Si	Mn	Ni	Cr
0.33	0.39	0.40	0.16	12.56

Typical mechanical properties of all-weld metal

	Y.S (MPa)	T.S (MPa)	El. (%)	Remark
EN ISO 14343	min. 250	min. 450	min. 15	PWHT
Example	310	510	20	PWHT

⁎ PWHT : Heat to 840~870℃ for 2h

TIG Consumables

T-430

For ferrite stainless steels (16%Cr STS)

Classifications

EN ISO 14343-B:2009	: SS 430	KS D 7026:2005	: Y430
AWS A5.9	: ER430	JIS Z 3321:2008	: Y430

Description

- TIG welding of 16%Cr ferrite stainless steels. (AISI 409, 430Ti, 431, ASTM A176)
- It's used for automobile muffler welding

Typical chemical composition of wire (%)

C	Si	Mn	Ni	Cr
0.01	0.32	0.39	0.24	16.67

Typical mechanical properties of all-weld metal

	Y.S (MPa)	T.S (MPa)	El. (%)	Remark
AWS A5.9		min. 520	min. 20	PWHT
EN ISO 14343	min. 250	min. 450	min. 15	PWHT
Example	320	530	37	PWHT

⁎ PWHT : Heat to 760~790℃ for 2h

TIG Consumables

T-430LNb

For ferrite stainless steels (18%Cr-Nb STS)

Classifications

EN ISO 14343-A:2009 : W 18 L Nb

Description

- TIG welding of 16%Cr-Nb ferrite stainless steels. (AISI 405, 410L, 429, 430, 444)
- It's used for front pipe and manifold of automobile exhaust system.

Typical chemical composition of wire (%)

C	Si	Mn	Ni	Cr	Nb+Ta
0.02	0.40	0.39	0.25	18.01	0.50

Typical mechanical properties of all-weld metal

	Y.S (MPa)	T.S (MPa)	El. (%)
EN ISO 14343	min. 220	min. 410	min. 15
Example	260	450	21

M-2209

For duplex stainless steels (Low carbon, 22%Cr-9%Ni-Mo STS)

Classifications

EN ISO 14343-A:2009 : G 22 9 3 N L
EN ISO 14343-B:2009 : SS 2209
AWS A5.9-07 : ER2209

Description

- MIG welding of 22%Cr-9%Ni-3%Mo duplex stainless steels (UNS S31803, STS 329J1, 329J2L)
- A various application of the petrochemical offshore structure and distilling apparatuses.

Typical chemical composition of wire (%)

C	Si	Mn	Ni	Cr	Mo
0.01	0.40	1.67	8.70	22.70	3.10

Typical mechanical properties of all-weld metal

	Y.S (MPa)	T.S (MPa)	El. (%)	IV (J) -46℃
AWS A5.9		min. 690	min. 20	
EN ISO 14343	min. 450	min. 550	min. 20	
Example	580	840	28	110

M-2594

For Super duplex stainless steels (25%Cr-9%Ni-4%Mo STS)

Classifications

EN ISO 14343-A:2009 : W 25 9 4 N L
EN ISO 14343-B:2009 : SS 2594
AWS A5.9-07 : ER2594

Description

- MIG welding of 25%Cr-9%Ni-4%Mo duplex stainless steels.(UNS S32750, S32760, S32550, S31260)
- A various application of the petrochemical offshore structure and distilling apparatuses.

Typical chemical composition of wire (%)

C	Si	Mn	Ni	Cr	Mo	PREN
0.02	0.42	0.66	9.18	25.06	3.88	41

Typical mechanical properties of all-weld metal

	Y.S (MPa)	T.S (MPa)	El. (%)	IV (J) 20℃	IV (J) -46℃
AWS A5.9		min. 760	min. 15		
EN ISO 14343	min. 550	min. 795	min. 15		
Example	720	820	20	110	75

MIG Consumables

M-307Si

For austenite stainless steel (18%Cr-8%Ni STS)

Classifications

EN ISO 14343-A:2009 : G 18 8 Mn

Description

- MIG welding of 18%Cr-8%Ni-7%Mn austenite stainless steels.
- It used for disiimilar steel such as austenitic manganese steel to carbon steel forgings.

Typical chemical composition of wire (%)

C	Si	Mn	Ni	Cr
0.07	0.64	6.79	8.91	18.79

Typical mechanical properties of all-weld metal

	Y.S (MPa)	T.S (MPa)	El. (%)	IV (J) 0℃	IV (J) -40℃
EN ISO 14343	min. 350	min. 590	min. 25		
Example	440	610	40	110	82

MIG Consumables

M-308

For austenite stainless steel (18%Cr-8%Ni STS)

Classifications

EN ISO 14343-B:2009	: SS 308	KS D 7026:2005	: Y308
AWS A5.9-07	: ER308	JIS Z 3321:2008	: Y308

Description

- MIG welding of 18%Cr-8%Ni austenite stainless steels (AISI STS 301, 302, 304)
- A various application of the petrochemical , flesh water, medicine and fertilizer industrial apparatuses.

Typical chemical composition of wire (%)

C	Si	Mn	Ni	Cr
0.04	0.47	1.61	9.57	19.87

Typical mechanical properties of all-weld metal

	Y.S (MPa)	T.S (MPa)	El. (%)	IV (J) 0℃	IV (J) -40℃
AWS A5.9		min. 550	min. 35		
EN ISO 14343	min. 350	min. 550	min. 30		
Example	410	610	40	110	82

MIG Consumables

M-308L

For austenite stainless steel (Low carbon, 18%Cr-8%Ni STS)

Classifications

EN ISO 14343-B:2009	: SS 308L	KS D 7026:2005	: Y308L
AWS A5.9-07	: ER308L	JIS Z 3321:2008	: Y308L

Description

- MIG welding of 18%Cr-8%Ni austenite stainless steels (AISI STS 301, 302, 304)
- A various application of the petrochemical , nuclear power plant apparatuese.

Typical chemical composition of wire (%)

C	Si	Mn	Ni	Cr
0.01	0.49	1.75	9.64	19.63

Typical mechanical properties of all-weld metal

	Y.S (MPa)	T.S (MPa)	El. (%)	IV (J) 0℃	IV (J) -196℃
AWS A5.9		min. 520	min. 35		
EN ISO 14343	min. 320	min. 510	min. 30		
Example	380	570	44	90	60

MIG Consumables

M-308H

For austenite stainless steel (18%Cr-8%Ni STS)

Classifications

EN ISO 14343-B:2009	: SS 308H
AWS A5.9-07	: ER308H

Description

- MIG welding of 18%Cr-8%Ni austenite stainless steels (AISI STS 304H)
- A various application of the petrochemical , flesh water, medicine and fertilizer industrial apparatuses.

Typical chemical composition of wire (%)

C	Si	Mn	Ni	Cr
0.05	0.42	2.06	9.70	19.90

Typical mechanical properties of all-weld metal

	Y.S (MPa)	T.S (MPa)	El. (%)
AWS A5.9		min. 550	min. 35
EN ISO 14343	min. 350	min. 550	min. 30
Example	350	590	44

MIG Consumables

M-308LSi

For austenite stainless steel (Low carbon, 18%Cr-8%Ni STS)

Classifications

EN ISO 14343-A:2009	: G 19 9 L Si	AWS A5.9-07	: ER308LSi
EN ISO 14343-B:2009	: SS 308LSi		

Description

- MIG welding of 18%Cr-8%Ni austenite stainless steels (AISI STS 301, 302, 304)
- A various application of the petrochemical , nuclear power plant appratuese.

Typical chemical composition of wire (%)

C	Si	Mn	Ni	Cr
0.01	0.85	1.68	9.89	19.63

Typical mechanical properties of all-weld metal

	Y.S (MPa)	T.S (MPa)	El. (%)	IV (J) 0℃	IV (J) -196℃
AWS A5.9		min. 520	min. 35		
EN ISO 14343	min. 320	min. 510	min. 30		
Example	350	580	43	180	80

MIG Consumables

M-309

For austenite stainless steel (Dissimilar steels)

Classifications

EN ISO 14343-B:2009	: SS 309	KS D 7026:2005	: Y309
AWS A5.9-07	: ER309	JIS Z 3321:2008	: Y309

Description

- MIG welding of 22%Cr-12%Ni STS and dissimilar steels such as 304L to mild steels or low alloy steels.
- A various application of petrochemical and fiber industrial appratuese.

Typical chemical composition of wire (%)

C	Si	Mn	Ni	Cr
0.05	0.42	1.55	13.29	23.12

Typical mechanical properties of all-weld metal

	Y.S (MPa)	T.S (MPa)	El. (%)
AWS A5.9		min. 550	min. 25
EN ISO 14343	min. 350	min. 550	min. 30
Example	420	610	40

MIG Consumables

M-309L

For austenite stainless steel (Low carbon, Dissimilar steels)

Classifications

EN ISO 14343-B:2009	: SS 309L	KS D 7026:2005	: Y309L
AWS A5.9-07	: ER309L	JIS Z 3321:2008	: Y309L

Description

- MIG welding of 22%Cr-12%Ni STS and dissimilar steels such as 304L to mild steels or low alloy steels.
- A various application of petrochemical and fiber industrial appratuese.

Typical chemical composition of wire (%)

C	Si	Mn	Ni	Cr
0.01	0.45	1.64	13.78	23.09

Typical mechanical properties of all-weld metal

	Y.S (MPa)	T.S (MPa)	El. (%)	IV (J) 0℃
AWS A5.9		min. 520	min. 30	
EN ISO 14343	min. 320	min. 510	min. 25	
Example	410	590	42	100

MIG Consumables

M-309LSi

For austenite stainless steel (Low carbon, Dissimilar steels)

Classifications

EN ISO 14343-B:2009	: SS 309LSi
AWS A5.9-07	: ER309LSi

Description

- MIG welding of 22%Cr-12%Ni STS and dissimilar steels such as 304L to mild steels or low alloy steels.
- A various application of petrochemical and fiber industrial appratuese.

Typical chemical composition of wire (%)

C	Si	Mn	Ni	Cr
0.01	0.91	1.86	13.62	23.07

Typical mechanical properties of all-weld metal

	Y.S (MPa)	T.S (MPa)	El. (%)	IV (J) 0℃
AWS A5.9		min. 520	min. 30	
EN ISO 14343	min. 320	min. 510	min. 25	
Example	410	590	40	90

MIG Consumables

M-309LMo

For austenite stainless steel (22%Cr-12%Ni-Mo STS)

Classifications

EN ISO 14343-B:2009 : G 23 12 2 L AWS A5.9-07 : 309LMo

Description

- MIG welding of 22%Cr-12%Ni-2%Mo austenite stainless steels.
- A various application of the petrochemical plant appratuese.

Typical chemical composition of wire (%)

C	Si	Mn	Ni	Cr	Mo
0.01	0.45	1.51	14.62	21.59	2.60

Typical mechanical properties of all-weld metal

	Y.S (MPa)	T.S (MPa)	El. (%)	IV (J) 0℃	IV (J) -196℃
EN ISO 14343	min. 350	min. 550	min. 25		
Example	420	660	33	92	89

MIG Consumables

M-310

For austenite stainless steel (25%Cr-20%Ni STS)

Classifications

EN ISO 14343-B:2009 : SS 310 KS D 7026:2005 : Y310
AWS A5.9-07 : ER310 JIS Z 3321:2008 : Y310

Description

- MIG welding of 25%Cr-20%Ni austenite stainless steels (AISI 310S, SCS 18, SCh 21, 22, SUH 310)
- A various application of petrochemical and fiber industrial appratuese.

Typical chemical composition of wire (%)

C	Si	Mn	Ni	Cr
0.01	0.41	1.60	20.84	26.74

Typical mechanical properties of all-weld metal

	Y.S (MPa)	T.S (MPa)	El. (%)	IV (J) 0℃
AWS A5.9		min. 550	min. 30	
EN ISO 14343	min. 320	min. 550	min. 20	
Example	370	600	40	110

M-312

For austenite stainless steel (29%Cr-9%Ni STS)

Classifications

EN ISO 14343-B:2009	: SS 312	KS D 7026:2005	: Y312
AWS A5.9	: ER312	JIS Z 3321:2008	: Y312

Description

- MIG welding of 29%Cr-9%Ni STS and dissimilar steels such as 304L to mild steels or low alloy steels.
- A various application to high, low carbon steel and cald welding.

Typical chemical composition of wire (%)

C	Si	Mn	Ni	Cr
0.11	0.41	1.81	8.92	30.63

Typical mechanical properties of all-weld metal

	Y.S (MPa)	T.S (MPa)	El. (%)
AWS A5.9		min. 660	min. 22
EN ISO 14343	min. 450	min. 650	min. 15
Example	420	730	30

M-316

For austenite stainless steel (18%Cr-12%Ni-Mo STS)

Classifications

EN ISO 14343-B:2009	: SS 316	KS D 7026:2005	: Y316
AWS A5.9-07	: ER316	JIS Z 3321:2008	: Y316

Description

- MIG welding of 18%Cr-12%Ni-2%Mo austenite stainless steels (AISI STS 316)
- A various application of the petrochemical industrial appratuese.

Typical chemical composition of wire (%)

C	Si	Mn	Ni	Cr	Mo
0.04	0.44	1.60	12.17	19.22	2.26

Typical mechanical properties of all-weld metal

	Y.S (MPa)	T.S (MPa)	El. (%)	IV (J) 0℃	IV (J) -196℃
AWS A5.9		min. 490	min. 30		
EN ISO 14343	min. 320	min. 510	min. 25		
Example	420	580	38	100	50

MIG Consumables

M-316L

For austenite stainless steel (Low carbon, 18%Cr-12%Ni-Mo STS)

Classifications

EN ISO 14343-B:2009	: SS 316L	KS D 7026:2005	: Y316L
AWS A5.9	: ER316L	JIS Z 3321:2008	: Y316L

Description

- MIG welding of 18%Cr-12%Ni-2%Mo austenite stainless steels (AISI STS 316)
- A various application of the petrochemical industrial appratuese.

Typical chemical composition of wire (%)

C	Si	Mn	Ni	Cr	Mo
0.02	0.51	1.61	11.81	18.78	2.53

Typical mechanical properties of all-weld metal

	Y.S (MPa)	T.S (MPa)	El. (%)	IV (J) 0℃	IV (J) -196℃
AWS A5.9		min. 490	min. 30		
EN ISO 14343	min. 320	min. 510	min. 25		
Example	430	570	40	90	62

MIG Consumables

M-316H

For austenite stainless steel (18%Cr-12%Ni-Mo STS)

Classifications

EN ISO 14343-B:2009	: SS 316H
AWS A5.9-07	: ER316H

Description

- MIG welding of 18%Cr-12%Ni-2%Mo austenite stainless steels (AISI STS 316)
- A various application of the petrochemical industrial appratuese.

Typical chemical composition of wire (%)

C	Si	Mn	Ni	Cr	Mo
0.04	0.44	1.60	12.17	19.22	2.26

Typical mechanical properties of all-weld metal

	Y.S (MPa)	T.S (MPa)	El. (%)	IV (J) 0℃	IV (J) -196℃
AWS A5.9		min. 490	min. 30		
EN ISO 14343	min. 350	min. 550	min. 25		
Example	420	580	38	100	50

M-316LSi

For austenite stainless steel (Low carbon, 18%Cr-12%Ni-Mo STS)

Classifications

EN ISO 14343-A:2009	: G 19 12 3 L Si	AWS A5.9	: ER316LSi
EN ISO 14343-B:2009	: SS 316LSi		

Description

- MIG welding of 18%Cr-12%Ni-2%Mo austenite stainless steels (AISI STS 316, 316L)
- A various application of chemical plant, fiber and paper inductrial appratuese.

Typical chemical composition of wire (%)

C	Si	Mn	Ni	Cr	Mo
0.01	0.87	1.55	11.57	18.58	2.54

Typical mechanical properties of all-weld metal

	Y.S (MPa)	T.S (MPa)	El. (%)	IV (J) 0℃	IV (J) -196℃
AWS A5.9		min. 490	min. 30		
EN ISO 14343	min. 320	min. 510	min. 25		
Example	430	570	30	110	40

M-317L

For austenite stainless steel (Low carbon, 20%Cr-14%Ni-Mo STS)

Classifications

EN ISO 14343-B:2009	: SS 317L	KS D 7026:2005	: Y317L
AWS A5.9	: ER317L	JIS Z 3321:2008	: Y317L

Description

- MIG welding of 20%Cr-14%Ni-3.5Mo austenite stainless steels (AISI STS 316, 316L, 317)
- A various application of the petrochemical industrial appraturese used in acid atmosphere.

Typical chemical composition of wire (%)

C	Si	Mn	Ni	Cr	Mo
0.01	0.38	1.63	13.52	19.06	3.09

Typical mechanical properties of all-weld metal

	Y.S (MPa)	T.S (MPa)	El. (%)	IV (J) 0℃	IV (J) -196℃
AWS A5.9		min. 520	min. 30		
EN ISO 14343	min. 300	min. 480	min. 25		
Example	400	570	30	110	40

MIG Consumables

M-347

For austenite stainless steel (Low Carbon, 20%Cr-10%Ni-Nb STS)

Classifications

EN ISO 14343-B:2009	: SS 347	KS D 7026:2005	: Y347
AWS A5.9	: ER347	JIS Z 3321:2008	: Y347

Description

- MIG welding of 20%Cr-10%Ni-Nb austenite stainless steels (AISI STS 347, 321)
- A various application of chemical plant industrial appratuese.

Typical chemical composition of wire (%)

C	Si	Mn	Ni	Cr	Nb+Ta
0.05	0.40	1.55	9.03	19.04	0.68

Typical mechanical properties of all-weld metal

	Y.S (MPa)	T.S (MPa)	El. (%)
AWS A5.9		min. 520	min. 30
EN ISO 14343	min. 350	min. 550	min. 25
Example	400	640	41

MIG Consumables

M-409Cb

For martensite stainless steel (12%Cr STS)

Classifications

EN ISO 14343-B:2009	: SS 409Nb
AWS A5.9	: ER409Nb

Description

- MIG welding of 12%Cr-Nb Martensite stainless steels. (AISI 409)
- It's used for front pipe and manifold of automobile exhaust system.

Typical chemical composition of wire (%)

C	Si	Mn	Ni	Cr	Nb+Ta
0.02	0.45	0.52	0.34	11.57	0.35

Typical mechanical properties of all-weld metal

	Y.S (MPa)	T.S (MPa)	El. (%)
AWS A5.9		min. 450	min. 20
EN ISO 14343	min. 250	min. 450	min. 15
Example	280	465	22

MIG Consumables

M-410

For martensite stainless steel (Low Carbon,12%Cr STS)

Classifications

EN ISO 14343-B:2009	: SS 410	KS D 7026:2005	: Y410
AWS A5.9	: ER410	JIS Z 3321:2008	: Y410

Description

- MIG welding of 12%Cr martensite stainless steels. (AISI STS 403, 410)
- It's used for surfacing of sealing faces of valves for gas, water and steam piping system at service temperatures up to 450℃

Typical chemical composition of wire (%)

C	Si	Mn	Ni	Cr
0.01	0.32	0.36	0.19	12.61

Typical mechanical properties of all-weld metal

	Y.S (MPa)	T.S (MPa)	El. (%)	Remark
AWS A5.9		min. 520	min. 20	PWHT
EN ISO 14343	min. 250	min. 450	min. 15	PWHT
Example	320	540	35	PWHT

* PWHT : Heat to 730~760℃, for 1h Furnace cooling down to 600℃ then air cooling

MIG Consumables

M-420

For martensite stainless steel (12%Cr STS)

Classifications

EN ISO 14343-B:2009	: SS 420
AWS A5.9	: ER420

Description

- MIG welding of 12%Cr martensite stainless steels. (AISI 420)
- It's used for surfacing of sealing faces of valves for gas, water and steam piping system at service temperatures up to 450℃

Typical chemical composition of wire (%)

C	Si	Mn	Ni	Cr
0.33	0.39	0.40	0.16	12.56

Typical mechanical properties of all-weld metal

	Y.S (MPa)	T.S (MPa)	El. (%)	Remark
EN ISO 14343	min. 250	min. 450	min. 15	PWHT
Example	310	510	20	PWHT

* PWHT : Heat to 840~870℃, for 2h Furnace cooling down to 600℃ then air cooling

MIG Consumables

M-430

For ferrite stainless steels (16%Cr STS)

Classifications

EN ISO 14343-B:2009	: SS 430	KS D 7026:2005	: Y430
AWS A5.9	: ER430	JIS Z 3321:2008	: Y430

Description

- MIG welding of 16%Cr ferrite stainless steels. (AISI 409, 430Ti, 431, ASTM A176)
- It's used for automobile muffler welding

Typical chemical composition of wire (%)

C	Si	Mn	Ni	Cr
0.01	0.32	0.39	0.24	16.67

Typical mechanical properties of all-weld metal

	Y.S (MPa)	T.S (MPa)	El. (%)	Remark
AWS A5.9		min. 520	min. 20	PWHT
EN ISO 14343	min. 250	min. 450	min. 15	PWHT
Example	310	530	35	PWHT

⁎ PWHT : Heat to 760~790℃, for 2h Furnace cooling down to 600℃ then air cooling

MIG Consumables

M-430LNb

For ferrite stainless steels (16%Cr-Nb STS)

Classifications

EN ISO 14343-A:2009 : W 18 L Nb

Description

- TIG welding of 16%Cr-Nb ferrite stainless steels. (AISI 405, 410L, 429, 430, 444)
- It's used for front pipe and manifold of automobile exhaust system.

Typical chemical composition of wire (%)

C	Si	Mn	Ni	Cr	Nb+Ta
0.02	0.40	0.39	0.25	18.01	0.50

Typical mechanical properties of all-weld metal

	Y.S (MPa)	T.S (MPa)	El. (%)
EN ISO 14343	min. 220	min. 410	min. 15
Example	260	450	25

M-430Mo

For ferrite stainless steels (16%Cr-Mo, Hardfacing)

Classifications

AWS A5.9 : ER430- Modified

Description

• MIG welding of 16%Cr ferrite stainless steels. (AISI 430)
• It's used for front pipe and manifold of automobile exhaust system.
• Mo component improves high temperature properties.

Typical chemical composition of wire (%)

C	Si	Mn	Ni	Cr	Mo
0.18	0.62	0.45	0.36	17.36	0.95

M-430Ti

For ferrite stainless steels (16%Cr-Ti, Automobile exhaust system)

Classifications

AWS A5.9 : ER430 Modified

Description

• MIG welding of 16%Cr ferrite stainless steels. (AISI 430)
• It's used for front pipe and manifold of automobile exhaust system.
• Ti component improves corrosion resistance.

Typical chemical composition of wire (%)

C	Si	Mn	Ni	Cr	Ti
0.04	0.69	0.41	0.32	17.19	0.32