

Technical Data Sheet

UGIWELD™ 318M

Chemical composition (%)

C	Si	Mn	Ni	Cr	Mo	Cu	Nb
≤ 0.08	0.65 – 1.0	1.0 – 2.5	11.0 – 14.0	18.0 – 20.0	2.5 – 3.0	≤ 0,5	10xC – 1.0

30-09-2021 – REV 05

Classification

Stabilized austenitic grade

Designation

Material No.

Europe – EN ISO 14343-A	USA – AWS A5.9	Europe – WNr.
19 12 3 Nb Si	(ER318Si)**	1.4576

** Usual naming not referenced in the standard AWS A5.9

Approvals

	MIG	TIG	SAW
TÜV (Germany)	X	X	X
CE	X	X	X
DB	X	X	

Mechanical properties

On All-Weld metal.

Temperature (°C)	Room Temperature	400°C
Tensile strength (MPa)	620	450
Yield strength (MPa)	400	300
Elongation (%)	30	15
Impact ISO V (J)	120	

Corrosion resistance

- » Good general corrosion resistance, close to stainless steel type 316L.
- » Because of its high Niobium content, good intergranular corrosion resistance is obtained.
- » Pitting corrosion resistance close to the stainless steel type 316L.



Swiss Steel Group

Production sites: Ugitech SA
www.swisssteel-group.com

Technical Data Sheet

UGIWELD™ 318M

Chemical composition (%)

C	Si	Mn	Ni	Cr	Mo	Cu	Nb
≤ 0.08	0.65 – 1.0	1.0 – 2.5	11.0 – 14.0	18.0 – 20.0	2.5 – 3.0	≤ 0,5	10xC – 1.0

30-09-2021 – REV 05

Recommended welding parameters

MIG welding

Recommended shielding gases are:

» Argon + Oxygen (1 to 3%)

» Argon + CO₂ (1 to 2.5%)

□ Filler metal (mm)	0.8	1.0	1.2	1.6
Short-Arc Current (A) Voltage (V)	60/80 15/17	80/120 15/17	100/150 17/19	
Spray-Arc Current (A) Voltage (V)	140/210 25/29	180/250 26/29	200/290 26/29	250/350 27/29
Gas Flow (l/min)	12 / 18	12 / 18	12 / 18	12 / 18

Water-cooled torch is recommended for high current above 250 A.

Interpass must be controlled to less than 150°C.

UGIWELD™ 318M is suited for pulsed arc welding.

TIG Welding

» Shielding gas: Argon and/or Helium.

Nitrogen and hydrogen are prohibited in shielding gases

Follow the recommendations of the torch producer:

» Current 50 – 250 A

» Voltage 10 – 20 V

Interpass must be controlled to less than 150°C.



Swiss Steel Group

Production sites: Ugitech SA
www.swisssteel-group.com

Technical Data Sheet

UGIWELD™ 318M

Chemical composition (%)

C	Si	Mn	Ni	Cr	Mo	Cu	Nb
≤ 0.08	0.65 – 1.0	1.0 – 2.5	11.0 – 14.0	18.0 – 20.0	2.5 – 3.0	≤ 0,5	10xC – 1.0

30-09-2021 – REV 05

Available products

Process	Shape	Diameter Range	Packaging	Weight
TIG	Rods	1.0 – 4.0 mm	Cardboard tubes	5 kg
		0.8 – 1.6 mm	Metallic spools – BS 300	15 – 18 kg
MIG	Wire	0.8 – 1.2 mm	Plastic spools – D 200	5 kg
			Plastic spools – D 300	15 kg
		1.0 – 1.6 mm	Plastic spools – D 350	25 – 27 kg
		0.8 – 1.2 mm	Pay off pack - Drums	250 – 500 kg
SAW	Wire	1.6 – 3.2 mm	Rims K415 / 300 / 94	20 – 25 kg
			Rims K435 / 300 / 70	

Contact us for dimensions

Applications

UGIWELD™ 318M is recommended for welding stabilized austenitic stainless steel type 316Ti (1.4571) and 316Nb (1.4580).

Because of Niobium content, UGIWELD™ 318M is recommended for use at temperatures higher than 400°C.



Swiss Steel Group

Production sites: Ugitech SA
www.swisssteel-group.com