

# Technical Data Sheet

## UGIWELD™ 309L

### Chemical composition (%)

C	Si	Mn	Ni	Cr	Mo	Cu
≤ 0.03	≤ 0.65	1.0 – 2.5	12.0 – 14.0	23.0 – 25.0	≤ 0,5	≤ 0,5

30-09-2021 – REV 05

### Classification

Austenitic grade

### Designation

Material No.

Europe – EN ISO 14343-A	USA – AWS A5.9	Europe – WNr.
23 12 L	ER309L	1.4332

### Approvals

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

### Mechanical properties

On All-Weld metal.

Temperature (°C)	-20°C	Room Temperature	350°C
Tensile strength (MPa)		615	450
Yield strength (MPa)		520	400
Elongation (%)		25	15

  

Impact ISO V (J)	130	130
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### Corrosion resistance

- » In no case shall a temperature of 950°C be exceed for use under intermittent oxidation conditions.
  - » Good performance under carburizing atmospheres. This grade may be used in contact with fused salts and can also be used in some cases of contamination by fuel ashes.
  - » The above are general indications intended to guide users in their choice.
- For each more specific case, please contact us.



**Swiss Steel Group**

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

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### Recommended welding parameters

#### MIG welding

Recommended shielding gases are:

» Argon + Oxygen (1 to 3%)

» Argon + CO<sub>2</sub> (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 25/28	180/250 26/29	200/290 20	250/350 27/30
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™ 309L 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.



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### 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

Because of its high temperature oxidation and corrosion resistance, UGIWELD™ 309L is recommended for the following applications:

- » Industrial furnace and boiler parts.
- » Annealing chambers.
- » Heat exchangers.
- » Fused salt treatment installations.

Due to its high ferrite level, UGIWELD™ 309L is very well suited for the first layer during stainless steel cladding on carbon steel.



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