Technical Data Sheet
UGIWELD™ 310

Chemical composition (%)

C	Si	Mn	Ni	Cr	Mo	Cu
0.08 – 0.15	≤ 0.65	1.0 – 2.5	20.0 – 22.0	25.0 – 27.0	≤ 0,5	≤ 0,5

30-09-2021 – REV 05

General presentation

EXHAUST® Bi Stab is one of the stabilised ferritic filler wire variants offered by Ugitech for welding automotive exhaust lines.

Its bi-stabilisation with niobium and titanium gives it the advantages of both these ferritic structure stabilisers:

» Titanium minimises grain growth in Weld Metal zones (WM) due to titanium nitride (TiN) precipitation in the still liquid metal in these zones, thus avoiding the risk of brittleness, which may sometimes occur when very thick welds are made (> 3 mm of sheet metal to be welded).

» Niobium traps the residual carbon and nitrogen through its transfer of between 85 and 95% in the welding arc under all standard welding conditions, thus avoiding any risk of intergranular corrosion in the WM.

Classification

Austenitic stainless steel

Designation

Material No.

Europe – EN ISO 14343-A	USA – AWS A5.9	Europe – WNr.
25 20 L	ER310	1.4842

Approvals

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

Mechanical properties

On All-Weld metal.

Temperature (°C)	Room Temperature	400°C
Tensile strength (MPa)	580	480
Yield strength (MPa)	380	240
Elongation (%)	35	25

Impact ISO V (J)	120

Swiss Steel Group

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

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Corrosion resistance

» The temperature limits for use under intermittent oxidation depend on cycle frequency. In no case shall a temperature of 1000°C be exceeded.

» UGIWELD™ 310 can withstand relatively severe thermic shock and is superior to UGIWELD™ 309L.

» The above are general indications intended to guide users in their choice. For each more specific case, please contact us.

Recommended welding parameters

MIG welding

Recommended shielding gases are:

» Argon + Oxygen (1 to 3%)
» Argon + CO_2 (1 to 2.5%)

Filler metal (mm)	0.8	1.0	1.2
Short-Arc Current (A) Voltage (V)	 60/80 15/17	 80/120 15/17	 100/150 17/19
Spray-Arc Current (A) Voltage (V)	 140/21 25/28	 180/25 26/29	 200/290 26/29
Gas Flow (l/min)	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™ 310 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
MIG	Wire	0.8 – 1.6 mm	Metallic spools – BS 300	15 – 18 kg
		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™ 310 is recommended for high temperature applications:

» Industrial furnace and boiler parts,

» Annealing chambers,

» Heat exchangers,

» Fused salt treatment installations.

UGIWELD™ 310 is a pure austenitic stainless steel so there is a risk of hot cracking, therefore a good control of welding parameters is essential.