Technical Data Sheet

UGIWELD™ 439

Chemical composition (%)

C	Si	Mn	Ni	Cr	Mo	Cu	Ti
≤ 0.03	≤ 0.8	≤ 0.8	≤ 0,5	17.0 – 18.0	≤ 0,5	≤ 0,5	10xC – 1.1

01-10-2021– REV 02

General presentation

UGIWELD™ 439 is one of the stabilised ferritic filler wire variants offered by Ugitech for welding automotive exhaust lines. It is stabilised by titanium to minimise grain growth in Weld Metal zones (WM) and thus avoid the risk of brittleness, which may sometimes occur when very thick welds are made (> 3 mm of sheet metal to be welded).

We wish to draw attention to the fact that unlike EXHAUST® F1 and EXHAUST® F1 Evo (ferritic stainless steel filler wires stabilised with niobium), MIG filler wires stabilised with titanium such as UGIWELD™ 439 require properly controlled welding conditions (mainly welding energy and shielding gas) to ensure that the WM zones are well stabilised and thus avoid any risk of intergranular corrosion in these zones.

Classification

Stabilised ferritic grade

Designation

Material No.

Europe – EN ISO 14343-A	USA – AWS A5.9	Europe – WNr.
Z 18 L Ti	ER439	1.4510

Approvals

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

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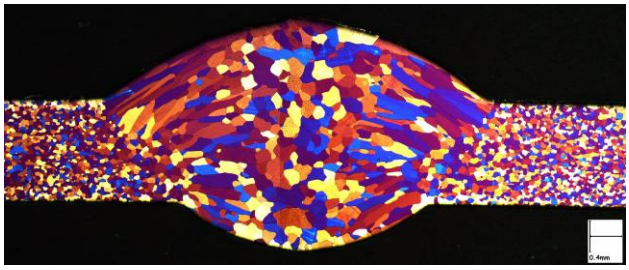
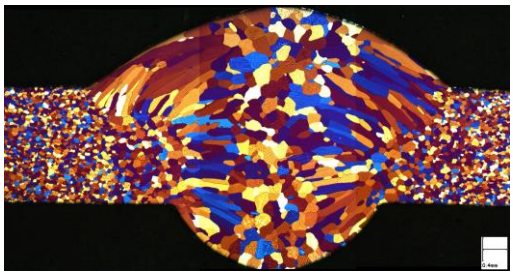
Micro structure

Edge-to-edge welding of bi-stabilised ferritic stainless steel sheets (1.4509) under argon + 2% CO_2 with UGIWELD™ 439 MIG filler wire ∅ 1 mm



1.4 mm thick sheets

(U = 23 V; Wi S = 9 m/min; We S = 1.5 m/min)



2.0 mm thick sheets

(U = 26 V; Wi S = 12 m/min; We S = 1.2 m/min

Welding

UGIWELD™ 439 filler wire is designed for welding stabilized ferritic stainless steel sheets, whatever their stabilizing element (1.4509, 1.4510, 1.4511, 1.4512, etc.). It can, however, also be used in certain cases for heterogeneous welding of ferritic stainless steel/austenitic stainless steel or austenitic stainless steel/austenitic stainless steel.

The titanium present in the filler grade ensures its stabilization (essential for preventing intergranular corrosion phenomena in the WM during use). However, unlike EXHAUST® F1 and EXHAUST® F1 Evo (ferritic stainless steel filler wires stabilized with niobium), MIG filler wires stabilized with titanium, such as UGIWELD™ 439, require well controlled welding conditions to ensure that the WM zones are properly stabilized and thus avoid any risk of intergranular corrosion in these zones.

Recommended welding parameters

MIG welding

Recommended shielding gas:

» Argon + Oxygen (1 to 3%)
» Argon + CO_2 (1 to 2%)

Nitrogen and hydrogen are prohibited, helium can partially replace argon.

Minimize welding heat input by preferring "short-circuit", rather than "spray" transfers in the welding arc.

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Heat treatment

Homogeneous welds (stabilised ferritic sheet metal welds) must not be subjected to heat treatment above 900°C, as this may cause grain growth in the heat-treated zone and weaken the resilience of these welds.

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

Developed for MIG/TIG welding on automotive exhaust lines, UGIWELD™ 439 is most suitable for welding the following grades:

» Stabilized ferritic stainless steels

» Austenitic stainless steels

and in both homogeneous and heterogeneous sheet metal configurations (sheets of different grades welded together).