

# BLUE MAX® MIG 309LSi

Stainless ▪ AWS ER309Si, ER309LSi

## KEY FEATURES

- High silicon level for increased puddle fluidity and toe wetting
- Proprietary surface lubricant for steady feeding and arc stability
- Q2 Lot® - Certificate showing actual wire composition and calculated ferrite number (FN) available online
- Controlled ferrite content for maximum corrosion resistance
- The same composition as Blue Max® MIG 309L with higher silicon content to improve the bead appearance and increase welding ease
- Excellent contour of the weld minimizes the need for grinding

## WELDING POSITIONS

All

## CONFORMANCES

<b>AWS A5.9:</b>	ER309Si, ER309LSi
<b>ASME SFA-A5.9:</b>	ER309Si, ER309LSi
<b>ABS:</b>	ER309Si, ER309LSi
<b>CWB/CSA W48-06:</b>	ER309LSi
<b>EN ISO 14343-B:</b>	SS309LSi
<b>ISO 14343:2009:</b>	(23 12 L Si)

## TYPICAL APPLICATIONS

- Designed for joining stainless steel to mild or low alloy steel
- Exceptionally performs at high wire feed speeds

## SHIELDING GAS

Short Circuiting Transfer:

90% Helium / 7.5% Argon / 2.5% CO<sub>2</sub>

Axial Spray Transfer:

98% Argon/ 2% Oxygen

## DIAMETERS / PACKAGING

Diameter in (mm)	25 lb (11.3 kg) Plastic Spool	500 lb (227 kg) Accu-Trak® Drum
0.030 (0.8)	ED023962	
0.035 (0.9)	ED019295	ED029770
0.045 (1.1)	ED019296	ED029771
1/16 (1.6)	ED019297	

## MECHANICAL PROPERTIES<sup>(1)</sup> – As Required per AWS A5.9

	Yield Strength <sup>(2)</sup> MPa (ksi)	Tensile Strength MPa (ksi)	Elongation %	Ferrite Number
Typical Results <sup>(3)</sup> - As-Welded	450 (65)	595 (86)	42	11

## WIRE COMPOSITION<sup>(1)</sup> – As Required per AWS A5.9

	%C <sup>(4)</sup>	%Cr	%Ni	%Mo	%Mn
Requirements - AWS ER309LSi	0.03 max	23.0-25.0	12.0-14.0	0.75 max	1.0-2.5
Typical Results <sup>(3)</sup>	0.03	23.5	13.7	0.28	2.0
	%Si	%P	%S	%N <sup>(5)</sup>	%Cu
Requirements - AWS ER309LSi	0.65-1.00	0.03 max	0.03 max	Not Specified	0.75 max
Typical Results <sup>(3)</sup>	0.89	0.02	0.01	0.06	0.22

<sup>(1)</sup>Typical wire composition. <sup>(2)</sup>Measured with 0.2% offset <sup>(3)</sup>See test results disclaimer <sup>(4)</sup>AWS Requirement for ER309Si is 0.12% max. carbon. <sup>(5)</sup>Included in 0.50% max. for other elements not specified.

## TYPICAL OPERATING PROCEDURES

Diameter, Polarity Shielding Gas	CTWD <sup>(6)</sup> mm (in)	Wire Feed Speed m/min (in/min)	Voltage (Volts)	Approx. Current (Amps)	Deposition Rate kg/hr (lb/hr)
<b>Short Circuit Transfer</b>					
<b>0.035 in (0.9 mm), DC+</b> 90% He / 7-1/2% Ar / 2-1/2% CO <sub>2</sub>	13 (1/2)	3.0 (120)	19-20	55	0.9 (2.0)
	13 (1/2)	4.6 (180)	19-20	85	1.4 (3.0)
	13 (1/2)	5.8 (230)	20-21	105	1.8 (3.9)
	13 (1/2)	7.6 (300)	20-21	125	2.3 (5.0)
	13 (1/2)	8.9 (350)	21-22	140	2.7 (5.9)
	13 (1/2)	10.2 (400)	22-23	160	3.1 (6.7)
<b>0.045 in (1.1 mm), DC+</b> 90% He / 7-1/2% Ar / 2-1/2% CO <sub>2</sub>	13 (1/2)	2.5 (100)	19-20	100	1.1 (2.8)
	13 (1/2)	3.2 (125)	19-20	120	1.5 (3.5)
	13 (1/2)	3.8 (150)	21	135	1.7 (4.2)
	13 (1/2)	4.4 (175)	21	140	2.0 (4.8)
	13 (1/2)	5.6 (220)	22	170	2.6 (6.1)
	13 (1/2)	6.4 (250)	22-23	175	2.9 (6.9)
13 (1/2)	7.0 (275)	22-23	185	3.2 (7.6)	

**Axial Spray Transfer**

<b>0.035 in (0.9 mm), DC+</b> 98% Ar/2% O <sub>2</sub>	13 (1/2)	10.2 (400)	22	180	3.1 (6.7)
	13 (1/2)	10.8 (425)	23	190	3.3 (7.1)
	13 (1/2)	11.4 (450)	23	200	3.5 (7.5)
	13 (1/2)	12.1 (475)	23	210	3.7 (8.0)
<b>0.045 in (1.1 mm), DC+</b> 98% Ar/2% O <sub>2</sub>	13 (1/2)	6.1 (240)	23	195	2.8 (6.6)
	13 (1/2)	6.6 (260)	24	230	3.0 (7.2)
	13 (1/2)	7.6 (300)	24	240	3.5 (8.3)
	13 (1/2)	8.3 (325)	25	250	3.8 (9.0)
	13 (1/2)	9.1 (360)	25	260	4.2 (10.0)
<b>1/16 in (1.6 mm), DC+</b> 98% Ar/2% O <sub>2</sub>	19 (3/4)	4.4 (175)	25	260	4.3 (9.2)
	19 (3/4)	5.1 (200)	26	310	4.9 (10.5)
	19 (3/4)	6.4 (250)	26	330	6.2 (13.1)
	19 (3/4)	7.0 (275)	27	360	6.8 (14.4)
	19 (3/4)	7.6 (300)	28	390	7.4 (15.8)

<sup>(1)</sup>Typical wire composition. <sup>(2)</sup>Measured with 0.2% offset <sup>(3)</sup>See test results disclaimer <sup>(4)</sup>AWS Requirement for ER309Si is 0.12% max. carbon. <sup>(5)</sup>Included in 0.50% max. for other elements not specified.

<sup>(6)</sup>To estimate ESO, subtract 1/8 in (3 mm) from CTWD.

## IMPORTANT: SPECIAL VENTILATION AND/OR EXHAUST REQUIRED

Fumes from the normal use of some welding products can contain significant quantities of components - such as chromium and manganese - which can lower the 5.0 mg/m<sup>3</sup> maximum exposure guideline for general welding fume.

BEFORE USE, READ AND UNDERSTAND THE SAFETY DATA SHEET (SDS) FOR THIS PRODUCT AND SPECIFIC INFORMATION PRINTED ON THE PRODUCT CONTAINER.

Material Safety Data Sheets (MSDS) and Certificates of Conformance are available on our website at [www.lincolnelectric.com](http://www.lincolnelectric.com)

## TEST RESULTS

Test results for mechanical properties, deposit or electrode composition and diffusible hydrogen levels were obtained from a weld produced and tested according to prescribed standards, and should not be assumed to be the expected results in a particular application or weldment. Actual results will vary depending on many factors, including, but not limited to, weld procedure, plate chemistry and temperature, weldment design and fabrication methods. Users are cautioned to confirm by qualification testing, or other appropriate means, the suitability of any welding consumable and procedure before use in the intended application.

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