

Select ER309LSi

Stainless Steel / Gas Shielded / Solid

PRODUCT DATA SHEET

FEATURES

- Increased silicon (Si) content compared to grades of similar alloy composition improves bead wetting and arc stability.
- Low carbon (C), < 0.03 wt%, minimizes carbide precipitation (sensitization) which makes the weld metal more resistant to intergranular corrosion.
- Unique manufacturing techniques provide enhanced arc stability and stable feeding.
- Applications for this alloy type include welding dissimilar metal, such as type 304 SS to mild steel, cladding mild steel or type 304 base metals where corrosion requires to be enhanced, and welding of the stainless steel side of type 304 claddings.

CONFORMANCES

AWS A5.9

ER309LSi

ER309Si

ISO 14343-A

G 23 12 L Si

DIAMETERS (in [mm])

0.035 (0.9), 0.040 (1.0), 0.045 (1.2), 0.052 (1.3), 1/16 (1.6)

POSITIONS



SHIELDING GAS

Ar + 0.5-3% CO₂, Ar + 0.5-3% O₂

Flow Rate: 40 - 50 CFH

POLARITY

Direct Current Electrode Positive (DCEP)

TYPICAL WIRE CHEMISTRY (WT%)

Shielding Gas	C	Cr	Cu	Mn	Mo	Ni	P	S	Si
N/A	0.02	23.50	0.17	2.20	0.06	13.70	0.023	0.013	0.86
Ferrite	Result								
WRC 1992	10								

TYPICAL MECHANICAL PROPERTIES

Shielding Gas	Tensile Strength ksi (MPa)	Yield Strength ksi (MPa)	Elongation (%)	Weld Condition	PWHT Temp
98%Ar / 2%O ₂	89 (614)	64 (441)	37	As-Welded	-



Revision: 1/17/2025

Notice: Be sure to follow all your employers safety practices, policies and procedures when using this product. Refer to CSA W117.2 and ANSI Z49.1 Safety in Welding, Cutting and Allied Processes for further information and the manufactures SDS sheet. The results reported are based upon testing of the product under controlled laboratory conditions in accordance with American Welding Society Standards. Actual use of the product may produce different results due to varying conditions. An example of such conditions would be electrode size, plate chemistry, environment, weldment design, fabrication methods, welding procedure and service requirements. Thus the results are not guarantees for use in the field. The manufacturer disclaims any warranty of merchantability or fitness for any particular purpose with respect to its products.

600 Enterprise Drive, P.O. Box 259, Fort Loramie, Ohio 45845-0259 • 800-341-5215 • www.Select-Arc.com

RECOMMENDED WELDING PARAMETERS **

Diameter in (mm)	Shielding Gas	Position	WFS* in/min (m/min)	Amps	Volts	CTWD* in (mm)
0.035 (0.9 mm)	98% Ar/2% O2	Flat & Horizontal	450 (11.4)	170	21	1/2 (13)
		Flat & Horizontal	515 (13.1)	185	23	1/2 (13)
		Flat & Horizontal	560 (14.2)	200	24	1/2 - 5/8 (13 - 16)
		Flat & Horizontal	655 (16.6)	205	26	1/2 - 5/8 (13 - 16)
0.040 (1.0 mm)	98% Ar/2% O2	Flat & Horizontal	390 (9.9)	195	21	1/2 - 5/8 (13 - 16)
		Flat & Horizontal	445 (11.3)	210	23	1/2 - 5/8 (13 - 16)
		Flat & Horizontal	490 (12.4)	225	24	5/8 (16)
		Flat & Horizontal	575 (14.6)	240	26	5/8 (16)
0.045 (1.2 mm)	98% Ar/2% O2	Flat & Horizontal	325 (8.3)	220	21	1/2 - 5/8 (13 - 16)
		Flat & Horizontal	375 (9.5)	235	23	1/2 - 5/8 (13 - 16)
		Flat & Horizontal	420 (10.7)	250	24	5/8 - 3/4 (16 - 19)
		Flat & Horizontal	500 (12.7)	270	26	5/8 - 3/4 (16 - 19)
0.052 (1.3 mm)	98% Ar/2% O2	Flat & Horizontal	280 (7.1)	240	21	5/8 (16)
		Flat & Horizontal	335 (8.5)	270	23	5/8 (16)
		Flat & Horizontal	375 (9.5)	295	24	5/8 - 3/4 (16 - 19)
		Flat & Horizontal	440 (11.2)	310	26	5/8 - 3/4 (16 - 19)
1/16 (1.6 mm)	98% Ar/2% O2	Flat & Horizontal	225 (5.7)	265	21	5/8 - 3/4 (16 - 19)
		Flat & Horizontal	300 (7.6)	305	23	5/8 - 3/4 (16 - 19)
		Flat & Horizontal	330 (8.4)	335	24	3/4 - 1 (19 - 25)
		Flat & Horizontal	375 (9.5)	350	26	3/4 - 1 (19 - 25)

* WFS = Wire Feed Speed, CTWD = Contact Tip To Work Distance

**The parameters listed are recommended starting points of operation and the ranges for amperage, wfs, and voltage could be extended based on fitness for application. For products with "all-position" capability, as determined and listed in classification, the position recommendation can be determined based on operator skill and material thickness and isn't limited to the listing.

APPROVALS

Agency	Approval	Shielding Gas	Diameter(s) in (mm)
Chrysler MS-90024/04	W406	N/A	0.035 (0.9) - 1/8 (3.2)
CWB CSA W48-23 / AWS A5.9M	ER309LSi	N/A	0.035 (0.9) - 1/16 (1.6)

PACKAGING [lbs (kgs)]

33 (15) Spools, 60 (27.2) Coils, 500 (226.8) Round Drum, 800 (362.9) Hex Drum, 900 (408.2) Hex Drum

*Some packaging options may not be available depending on diameter and product. Special package options may be available upon request.

STORAGE AND HANDLING

All products should be stored in original packaging, in dry conditions and handled with care. For more information refer to our website.



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