

Select 309L

Stainless Steel / Gas Shielded / Solid

PRODUCT DATA SHEET

FEATURES

- Low carbon (C), < 0.03 wt%, minimizes carbide precipitation (sensitization) which makes the weld metal more resistant to intergranular corrosion.
- Lower silicon (Si) content compared to high Si grades of similar composition increases resistance to crack sensitivity.
- 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

ER309

ER309L

ISO 14343-B

309L

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 CFM

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 | 0.06 | 1.75 | 0.08 | 13.50 | 0.020 | 0.004 | 0.40 |
| Ferrite | Result | | | | | | | | |
| WRC 1992 | 12 | | | | | | | | |

TYPICAL MECHANICAL PROPERTIES

| Shielding Gas | Tensile Strength ksi (MPa) | Yield Strength ksi (MPa) | Elongation (%) | Weld Condition | PWHT Temp |
|--------------------------|-------------------------------|-----------------------------|----------------|----------------|-----------|
| 98%Ar / 2%O ₂ | 86 (593) | 61 (421) | 35 | As-Welded | - |



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.

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% O ₂ | 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% O ₂ | 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% O ₂ | 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% O ₂ | 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% O ₂ | 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 | 23 | 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

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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