

# Select 316LSi

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 in the pulp and paper industry, chemical and textile processing equipment, furnace parts and in parts exposed to marine environments.
- Alloy types for welding include 316 stainless and similar alloys, such as A743 and A744 as well as CF-3M and CF-8M.

## CONFORMANCES

AWS A5.9

ER316LSi

ER316Si

ASME SFA 5.9

ER316LSi

ER316Si

## 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% CO<sub>2</sub>, Ar + 0.5-3% O<sub>2</sub>

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   | 18.40 | 0.17 | 1.75 | 2.53 | 11.80 | 0.023 | 0.013 | 0.85 |
| Ferrite       | Result |       |      |      |      |       |       |       |      |
| WRC 1992      | 8      |       |      |      |      |       |       |       |      |

## TYPICAL MECHANICAL PROPERTIES

| Shielding Gas            | Tensile Strength<br>ksi (MPa) | Yield Strength<br>ksi (MPa) | Elongation<br>(%) | Weld Condition | PWHT Temp |
|--------------------------|-------------------------------|-----------------------------|-------------------|----------------|-----------|
| 98%Ar / 2%O <sub>2</sub> | 85 (586)                      | 62 (428)                    | 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<br>in (mm) | Shielding Gas | Position          | WFS*<br>in/min (m/min) | Amps | Volts | CTWD*<br>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)<br>in (mm)   |
|-------------------------------|----------|---------------|--------------------------|
| CWB CSA W48-23 / AWS<br>A5.9M | ER316LSi | 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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