

# Select 81-A1

Low Alloy / Gas Shielded / Flux Cored

PRODUCT DATA SHEET

## FEATURES

- Designed for flat or horizontal welding in single or multiple pass applications.
- Addition of ~0.5 wt% molybdenum (Mo) provides increased high temperature strength compared to standard carbon steel electrodes.
- Commonly used in fabrication and erection of boilers and pressure vessels.
- Applications include the welding of C-Mo steel base metals (ASTM A161, A204, A302 Gr. A plate, and A335-P1 pipe).

## CONFORMANCES

AWS A5.29

E80T1-A1C

## DIAMETERS (in [mm])

5/64 (2.0), 3/32 (2.4)

## POSITIONS



## SHIELDING GAS

100% CO<sub>2</sub>

Flow Rate: 40 - 50 CFM

## POLARITY

Direct Current Electrode Positive (DCEP)

## TYPICAL WELD DEPOSIT CHEMISTRY (WT%)

| Shielding Gas       | C    | Mn   | Mo   | P     | S     | Si   |
|---------------------|------|------|------|-------|-------|------|
| 100%CO <sub>2</sub> | 0.05 | 0.52 | 0.51 | 0.010 | 0.012 | 0.33 |

## TYPICAL MECHANICAL PROPERTIES

| Shielding Gas       | Tensile Strength<br>ksi (MPa) | Yield Strength<br>ksi (MPa) | Elongation (%) | Weld Condition | PWHT Temp       |
|---------------------|-------------------------------|-----------------------------|----------------|----------------|-----------------|
| 100%CO <sub>2</sub> | 88 (607)                      | 75 (517)                    | 24             | PWHT           | 1150°F for 1 Hr |



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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.

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## RECOMMENDED WELDING PARAMETERS

| Diameter<br>in (mm) | Shielding Gas | Position          | WFS*<br>in/min (m/min) | Amps | Volts | CTWD*<br>in (mm)        |
|---------------------|---------------|-------------------|------------------------|------|-------|-------------------------|
| 5/64 (2.0 mm)       | 100% CO2      | Flat & Horizontal | 145 (3.7)              | 280  | 25    | 1 (25)                  |
|                     |               | Flat & Horizontal | 190 (4.8)              | 320  | 27    | 1 - 1 1/4 (25 - 32)     |
|                     |               | Flat & Horizontal | 230 (5.8)              | 365  | 29    | 1 - 1 1/4 (25 - 32)     |
| 3/32 (2.4 mm)       | 100% CO2      | Flat & Horizontal | 120 (3.0)              | 275  | 25    | 1 1/4 (32)              |
|                     |               | Flat & Horizontal | 150 (3.8)              | 335  | 27    | 1 1/4 - 1 1/2 (32 - 38) |
|                     |               | Flat & Horizontal | 165 (4.2)              | 400  | 29    | 1 1/4 - 1 1/2 (32 - 38) |

\* 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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