

SelectAlloy 309LMo-AP

Stainless Steel / Gas Shielded / Flux Cored

PRODUCT DATA SHEET

FEATURES

- The addition of Mo increases the pitting corrosion resistance in halide-containing environments.
- Designed for welding in all positions where well washed beads can be achieved with minimal weaving in both 100% CO₂ or 75-80% Ar/balance CO₂ shielding gas
- Smooth arc transfer produces minimal spatter.
- Applications for this alloy type include joining of stainless steel to carbon and low-alloy steels for service below 600°F, and for overlaying of carbon and low-alloy steels.
- This alloy type can also be used to achieve a single-layer overlay with a chemical composition similar to that of a 316 or 317 stainless steel and is often used for the first layer of a multilayer overlay in conjunction with 316 or 317.

CONFORMANCES

AWS A5.22

E309LMoT1-1

E309LMoT1-4

ASME SFA 5.22

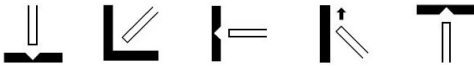
E309LMoT1-1

E309LMoT1-4

DIAMETERS (in [mm])

0.035 (0.9), 0.045 (1.2), 1/16 (1.6)

POSITIONS



SHIELDING GAS

75-80% Ar + Balance CO₂, 100% CO₂

Flow Rate: 40 - 50 CFM

POLARITY

Direct Current Electrode Positive (DCEP)

TYPICAL WELD DEPOSIT CHEMISTRY (WT%)

| Shielding Gas | C | Cr | Cu | Mn | Mo | Ni | P | S | Si | WRC-1992 Ferrite |
|----------------------------|------|-------|------|------|------|-------|------|------|------|------------------|
| 100%CO ₂ | 0.03 | 21.90 | 0.17 | 0.83 | 2.45 | 12.50 | 0.02 | 0.01 | 0.78 | 19 |
| 75%Ar / 25%CO ₂ | 0.03 | 22.10 | 0.16 | 0.88 | 2.44 | 12.60 | 0.02 | 0.01 | 0.87 | 20 |

Bismuth is not intentionally added and levels are not known to be greater than 0.002 (WT%)

TYPICAL MECHANICAL PROPERTIES

| Shielding Gas | Tensile Strength ksi (MPa) | Yield Strength ksi (MPa) | Elongation (%) | Weld Condition | PWHT Temp |
|----------------------------|-------------------------------|-----------------------------|----------------|----------------|-----------|
| 100%CO ₂ | 89 (614) | 67 (462) | 34 | As-Welded | - |
| 75%Ar / 25%CO ₂ | 94 (648) | 70 (483) | 33 | 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) | 75% Ar/25% CO2 | All Positions | 325 (8.3) | 110 | 23 | 1/2 (13) |
| | | All Positions | 400 (10.2) | 120 | 24.5 | 1/2 (13) |
| | | All Positions | 470 (11.9) | 130 | 26 | 1/2 (13) |
| | | Flat & Horizontal | 565 (14.4) | 145 | 27.5 | 1/2 - 5/8 (13 - 16) |
| | | Flat & Horizontal | 660 (16.8) | 160 | 29 | 1/2 - 5/8 (13 - 16) |
| 0.045 (1.2 mm) | 75% Ar/25% CO2 | All Positions | 215 (5.5) | 130 | 23 | 1/2 - 5/8 (13 - 16) |
| | | All Positions | 260 (6.6) | 145 | 24.5 | 1/2 - 5/8 (13 - 16) |
| | | All Positions | 310 (7.9) | 160 | 26 | 1/2 - 5/8 (13 - 16) |
| | | Flat & Horizontal | 420 (10.7) | 180 | 27.5 | 5/8 - 3/4 (16 - 19) |
| | | Flat & Horizontal | 450 (11.4) | 200 | 29 | 5/8 - 3/4 (16 - 19) |
| 1/16 (1.6 mm) | 75% Ar/25% CO2 | All Positions | 135 (3.4) | 160 | 23 | 5/8 - 3/4 (16 - 19) |
| | | All Positions | 190 (4.8) | 195 | 24.5 | 5/8 - 3/4 (16 - 19) |
| | | All Positions | 225 (5.7) | 210 | 26 | 5/8 - 3/4 (16 - 19) |
| | | Flat & Horizontal | 255 (6.5) | 225 | 27.5 | 3/4 - 1 (19 - 25) |
| | | Flat & Horizontal | 290 (7.4) | 245 | 29 | 3/4 - 1 (19 - 25) |

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

Parameters were established in 75% Ar/25% CO2. Raise by 1-1.5 volts when using 100% CO2.

APPROVALS

| Agency | Approval | Shielding Gas | Diameter(s) in (mm) |
|----------------|-------------|----------------------|--------------------------|
| CWB CSA W48-23 | E309LMoT1-1 | C1 (100%CO2) | 0.035 (0.9) - 1/16 (1.6) |
| | E309LMoT1-4 | M21 (75%Ar / 25%CO2) | 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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