

# SelectAlloy 2594-AP

Stainless Steel / Gas Shielded / Flux Cored

PRODUCT DATA SHEET

## FEATURES

- This alloy is considered a “superduplex stainless steel” with a Pitting Resistance Equivalent Number (PREN) of > 40.
- Designed for welding in all positions where well washed beads can be achieved with minimal weaving.
- Smooth arc transfer produces minimal spatter with excellent slag release.
- Applications for this alloy type include welding of UNS S32750 and 32760 (wrought), UNS J93380 and J93404 (cast). It can also be used to weld UNS S32550, J93370, and J93372 when not subject to sulfurous or sulfuric acids in service.
- The high PREN is an indicator of superb resistance to pitting in aqueous chloride-containing environments.
- Dissimilar welds are another application in welding carbon and low alloy steels to duplex stainless steels as well as to weld “standard” duplex stainless steel such as UNS S32205 and J92205, especially for root runs in pipe.

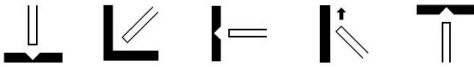
## CONFORMANCES

|               |           |
|---------------|-----------|
| AWS A5.22     | E2594T1-4 |
| ASME SFA 5.22 | E2594T1-4 |

## DIAMETERS [in (mm)]

0.045 (1.2), 1/16 (1.6)

## POSITIONS



## SHIELDING GAS

75-80% Ar + Balance CO<sub>2</sub>

Flow Rate: 40 - 50 CFH

## POLARITY

Direct Current Electrode Positive (DCEP)

## TYPICAL WELD DEPOSIT CHEMISTRY [WT%]

| Shielding Gas              | C    | Cr    | Cu   | Mn   | Mo   | N    | Ni   | P    | S    | Si   | WRC-1992 Ferrite |
|----------------------------|------|-------|------|------|------|------|------|------|------|------|------------------|
| 75%Ar / 25%CO <sub>2</sub> | 0.03 | 25.20 | 0.29 | 1.05 | 2.95 | 0.23 | 8.90 | 0.02 | 0.01 | 0.53 | 50               |

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

## TYPICAL MECHANICAL PROPERTIES

| Shielding Gas              | Tensile Strength<br>ksi (MPa) | Yield Strength<br>ksi (MPa) | Elongation (%) | Weld Condition | PWHT Temp | CVN @<br>-50°F (-46°C)<br>ft-lb (J) |
|----------------------------|-------------------------------|-----------------------------|----------------|----------------|-----------|-------------------------------------|
| 75%Ar / 25%CO <sub>2</sub> | 125 (862)                     | 88 (607)                    | 28             | As-Welded      | -         | 35 (47)                             |



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)       |
|------------------|----------------|-------------------|---------------------|------|-------|---------------------|
| 0.045 (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

\*\*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.

## 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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