# PRODUCT DATA SHEET

## Stainless Steel Bare Wire

Weld Process: Used for Mig, Tig, & Submerged Arc

Alloy: 308H  Class: ER308H

Conforms to Certification:  AWS A5.9 / ASME SFA 5.9

## Alloy: DM308H

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## AWS Chemical Composition Requirements

| | |
|---|---|
| C = 0.04 – 0.08 | P = 0.03 max |
| Cr = 19.5 – 22.0 | S = 0.03 max |
| Ni = 9.0 – 11.0 | Mo = 0.50 max |
| Mn = 1.0 – 2.5 | Cu = 0.75 max |
| Si = 0.30 – 0.65 | |

## Deposited Chemical Composition % (Typical)

| | | |
|---|---|---|
| C = 0.04 | Si = 0.30 | Mn = 1.8 |
| P = 0.009 | S = 0.009 | Cr =20.0 |
| Ni = 9.5 | N = 0.05 | |

## Deposited All Weld Metal Properties

Data is typical for ER308H weld metal deposited by Mig using Argon + 2% oxygen and Tig using 100% Argon as the shielding gas. Data on sub-arc is not presented, as sub-arc is dependent on the type of flux used.

## Mechanical Properties (R.T.)

| | |
|---|---|
| Yield Strength | 61,000psi |
| Tensile Strength | 90,000psi |
| Elongation | 41% |
| Reduction of Area | 60% |

## Application

WW308H is used for TIG, MIG, and submerged arc welding of un-stabilized stainless steels such as Types 301, 302, 304, 305, 308.

## Recommended Welding Parameters

### GMAW "Mig Process" Reversed Polarity

Short Arc Welding

| Wire Diameter | Wire Feed | Amps | Volts | Shielding Gas | Gas CFH |
|---|---|---|---|---|---|
| .030 | 13 - 26 | 40 ~ 120 | 16 ~ 20 | Argon+2% $O_2$ | 25 |
| .035 | 13 - 26 | 60 ~ 140 | 16 ~ 22 | Argon+2% O2 | 25 |

Spray Arc Welding

| Wire Diameter | Wire Feed | Amps | Volts | Shielding Gas | Gas CFH |
|---|---|---|---|---|---|
| .035 | 20 - 39 | 140 ~ 220 | 24 ~ 29 | Argon+2% $O_2$ | 38 |
| .045 | 16 - 30 | 160 ~ 260 | 25 ~ 30 | Argon+2% O2 | 38 |
| 1/16 | 10 - 16 | 230 ~ 350 | 27 ~ 31 | Argon+2% O2 | 38 |

### GTAW "Tig Process"

| Wire Diameter | Amps DCEN | Volts | Gases |
|---|---|---|---|
| .035 | 60 ~ 90 | 12 ~ 15 | Argon 100% |
| .045 | 80 ~ 110 | 13 ~ 16 | Argon 100% |
| 1/16 | 90 ~ 130 | 14 ~ 16 | Argon 100% |
| 3/32 | 120 ~ 175 | 15 ~ 20 | Argon 100% |

Note: Parameters for tig welding are dependent upon plate thickness and welding position.

Other shielding Gases may be used for Mig and Tig welding. Shielding gases are chosen taking Quality, Cost, and Operability into consideration

### Submerged Arc Welding

Reverse Polarity is suggested

| Wire Diameter | Amps DCSP | Volts |
|---|---|---|
| 3/32 | 250 ~ 450 | 28 ~ 32 |
| 1/8 | 300 ~ 500 | 29 ~ 34 |
| 5/32 | 400 ~ 600 | 30 ~ 35 |
| 3/16 | 500 ~ 700 | 30 ~ 35 |

Both Agglomerated and fused fluxes can be used for submerged arc welding.
Note: The chemical composition of the flux mainly affects the chemistry of the weld metal and consequently its corrosion resistance and Mechanical properties.