DURAMAX™
Inspiring the future generations of welders

# PRODUCT DATA SHEET

## DMERCUSI-A Premium Silicon Bronze Wire

***Classification:*** **ERCuSi-A**

AWS A5.7 / ASME SFA 5.7

***Silicon Bronze***

## *Characteristics, Application or Usage:*

DuraMax ERCUSI-A is a silicon bronze welding alloy for the inert gas welding of copper-silicon, copper zinc, copper to themselves, and also to mild steel. It can be used extensively in the welding of galvanized steel. The silicon content of 2.8 - 4.0% (as per AWS spec.) increases tensile strength, hardness, and work hardening rates.

DMERCUSI-A also provides good corrosion resistance and has good weldability. It is hot short and extreme care must be exercised to avoid overheating the joint which tends to cause cracking.

## *All Weld Chemical Composition (%)*

| Cu | Zn | Sn | Mn | Fe | Si | Al | Pb | TOE |
|---|---|---|---|---|---|---|---|---|
| Remainder | 1.0 max | 1.0 max | 1.5 max | 0.50 max | 2.8 - 4.0 | 0.01 max | 0.02 max | 0.50 max |

## *Typical Weld Metal Mechanical Properties:*

| Tensile Strength (PSI) | Elongation % in 2 inch | Hardness (Brinell) | | |
|---|---|---|---|---|
| 50,000 | 40% | 80 - 100 HBW | | |

## *Sizes Available and Weld Parameters:*

| Process | Size | Volts | AMPS | Speed/Flow | Shielding Gas / Flux |
|---|---|---|---|---|---|
| GTAW (DCEN) | 1/16 | ---0--- | 70 - 120 | 40 - 55 CFH | 100% Helium or 100% Argon |
| " | 3/32 | ---0--- | 120 - 160 | 40 - 55 CFH | |
| " | 1/8 | ---0--- | 170 - 230 | 40 - 55 CFH | |
| GMAW(DCEP) | 0.035 | 20 - 36 | 100 - 200 | 45 - 55 CFH | 100% Argon or 75% Argon + 25% Helium |
| " | 0.045 | 22 - 28 | 100 - 200 | 45 - 55 CFH | |
| " | 1/16 | 29 - 32 | 250 - 400 | 45 - 55 CFH | |
| " | 3/32 | 32 - 34 | 350 - 500 | 45 - 55 CFH | |

Preheat and Interpass Recommendations:

*Preheating copper – base alloys is frequently unnecessary provided section thicknesses are not unusually heavy.

*Preheat and Interpass temperatures will vary depending on section thickness, selected weld process and other variables.