

## **HANDY FLO<sup>®</sup> 6** **(SILVALOY<sup>®</sup> 6, SILVALOY<sup>®</sup> 6 EXCEL, SIL-FOS<sup>®</sup> 6M)**

### ***NOMINAL COMPOSITION***

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|                        |              |
|------------------------|--------------|
| Silver                 | 6.0% ± 0.25% |
| Phosphorus             | 6.0% ± 0.20% |
| Copper                 | Remainder    |
| Other Elements (Total) | 0.15% Max    |

### ***PHYSICAL PROPERTIES***

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|   |                                 |
|---|---------------------------------|
| Color   | Light Copper                    |
| Melting Point (Solidus)                         | 1190°F (645°C)                  |
| Flow Point <sup>(1)</sup>                       | 1300°F (705°C)                  |
| Brazing Temperature Range                       | 1300°F - 1500°F (705°C - 815°C) |
| Specific Gravity                                | 8.14                            |
| Density(lbs/in <sup>3</sup> )                   | 0.294                           |
| Electrical Conductivity (% IACS) <sup>(2)</sup> | 8.80                            |
| Electrical Resistivity (Microhm-cm)             | 19.7                            |

<sup>(1)</sup> The true liquids of this alloy is 1460°F (795°C). The alloy will flow freely and make strong joints at 1300°F (705°C).

<sup>(2)</sup> IACS = International Annealed Copper Standard

### ***PRODUCT USES***

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Handy Flo 6 was developed primarily for use on copper, but its use has extended to other non-ferrous copper base alloys. Handy Flo 6 is used on refrigeration units, air conditioning, electrical conductors, copper and brass pipe fittings, and other copper and brass type equipment.

### ***BRAZING CHARACTERISTICS***

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Handy Flo 6 is a copper-rich, intermediate temperature alloy that is self-fluxing on copper by virtue of its phosphorus content. The self-fluxing property of this alloy is effective on copper. With copper-base alloys, such as brass or bronze the joints should be fluxed with Handy Flux<sup>®</sup>. Handy Flo 6 should not be used on nickel-base or ferrous alloys, as the phosphorus reacts with the nickel or iron to form brittle compounds at the interface of the joints.

Handy Flo 6 is useful where close clearances cannot be maintained or where fillets are specified. It has a tendency to liquate if heated slowly through the melting range.

### ***PROPERTIES OF BRAZED JOINTS***

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The properties of a brazed joint are dependent upon numerous factors including base metal properties, joint design, metallurgical interaction between the base metal and the filler metal.

### ***CORROSION RESISTANCE***

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The corrosion resistance of Handy Flo 6 is comparable to that of copper except when exposed to sulfur-containing compounds, especially at elevated temperatures. Under these conditions Handy Flo 6 undergoes progressive deterioration. Exposure to pressurized steam can also result in accelerated corrosion.

## ***AVAILABLE FORMS***

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Wire, rod, engineered preforms, specialty preforms per customer specification, powder and paste.

## ***SPECIFICATIONS***

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Handy Flo 6 alloy conforms to the following specifications: N/A

## ***APPLICABLE PRODUCT CODE(S)***

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The applicable Lucas-Milhaupt product code(s) for this technical data sheet: 71-062, 17152.

Distribution P/N: 95120, 95131.

## ***SAFETY INFORMATION***

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The operation and maintenance of brazing equipment or facility should conform to the provisions of American National Standard (ANSI) Z49.1, "Safety in Welding and Cutting". For more complete information refer to the Material Safety Data Sheet for Handy Flo 6.

## ***WARRANTY CLAUSE***

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