

## Lucas-Milhaupt HANDY HI-TEMP 095 Carbide Brazing Alloy

Category : Metal , Nonferrous Metal , Copper Alloy , Solder/Braze Alloy

### Material Notes:

**Applications:** Handy Hi-Temp 095 is a ductile copper-nickel-manganese filler metal designed for intermediate temperature brazing of carbides, cast irons, steel, stainless steels and nickel base heat-resistant alloys. This filler metal is ideally suited for combined brazing/heat-treating. It is useful in the brazing of materials that may be harmed by the higher temperatures used in copper brazing. It also may be used to advantage in the brazing of materials that are subject to erosion and grain-boundary penetration associated with high boron (2 to 5%) brazing filler metals. **Characteristics:** This filler metal is relatively free-flowing and will flow into long, narrow joints, except when solution of excessive amounts of nickel raises the liquidus temperature. Preferred joint clearances are in the range of 0.001 to 0.003 in. (3 to 8mm). Fluxless brazing may be accomplished in dry hydrogen or argon of at least -80EF (-62EC) dew point or by vacuum at 10-3 torr or better. **Specifications:** This filler metal conforms to the following specification-SAE AMS-4764 Information provided by Lucas-Milhaupt, Inc.

Order this product through the following link:

[http://www.lookpolymers.com/polymer\\_Lucas-Milhaupt-HANDY-HI-TEMP-095-Carbide-Brazing-Alloy.php](http://www.lookpolymers.com/polymer_Lucas-Milhaupt-HANDY-HI-TEMP-095-Carbide-Brazing-Alloy.php)

| Physical Properties | Metric    | English                  | Comments |
|---------------------|-----------|--------------------------|----------|
| Density             | 7.67 g/cc | 0.277 lb/in <sup>3</sup> |          |

| Mechanical Properties      | Metric               | English              | Comments                                      |
|----------------------------|----------------------|----------------------|---|
| Tensile Strength, Ultimate | 225 - 393 MPa        | 32700 - 57000 psi    | 304 Stainless Steel torch brazed butt joint   |
|                            | @Temperature 427 °C  | @Temperature 800 °F  |   |
|                            | 325 - 404 MPa        | 47200 - 58600 psi    | 304 Stainless Steel furnace brazed butt joint |
|                            | @Temperature 427 °C  | @Temperature 800 °F  |   |
|                            | 354 - 412 MPa        | 51300 - 59700 psi    |   |
|                            | @Temperature 23.0 °C | @Temperature 73.4 °F |   |
|                            | 421 - 462 MPa        | 61000 - 67000 psi    | 4140 Carbon Steel torch brazed butt joint     |
|                            | @Temperature 427 °C  | @Temperature 800 °F  |   |
|                            | 371 - 590 MPa        | 53800 - 85600 psi    |   |
|                            | @Temperature 23.0 °C | @Temperature 73.4 °F |   |
|                            | 403 - 589 MPa        | 58400 - 85400 psi    |   |
|                            | @Temperature 23.0 °C | @Temperature 73.4 °F |   |

| Thermal Properties | Metric         | English        | Comments      |
|--------------------|----------------|----------------|---------------|
| Melting Point      | 879.4 - 927 °C | 1615 - 1700 °F |               |
| Solidus            |                |                | Melting Point |

| Thermal Properties | 879.4 °C<br>Metric | 1615 °F<br>English | Comments   |
|--------------------|--------------------|--------------------|------------|
| Liquidus           | 927 °C             | 1700 °F            | Flow Point |

| Component Elements Properties | Metric        | English       | Comments |
|-------------------------------|---------------|---------------|----------|
| Boron, B                      | <= 0.10 %     | <= 0.10 %     |          |
| Copper, Cu                    | 51.5 - 53.5 % | 51.5 - 53.5 % |          |
| Iron, Fe                      | <= 0.10 %     | <= 0.10 %     |          |
| Manganese, Mn                 | >= 36.3 %     | >= 36.3 %     |          |
| Nickel, Ni                    | 8.5 - 10.5 %  | 8.5 - 10.5 %  |          |
| Other, total                  | <= 0.50 %     | <= 0.50 %     |          |

| Electrical Properties  | Metric          | English         | Comments  |
|------------------------|-----------------|-----------------|-----------|
| Electrical Resistivity | 0.000129 ohm-cm | 0.000129 ohm-cm | Soft Wire |

| Processing Properties  | Metric        | English        | Comments      |
|------------------------|---------------|----------------|---------------|
| Processing Temperature | 954 - 1090 °C | 1750 - 2000 °F | Brazing Range |

| Descriptive Properties | Value        | Comments |
|------------------------|--------------|----------|
| Color                  | Reddish Gray |          |

## Contact Songhan Plastic Technology Co.,Ltd.

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