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SilverAlloy A-69Ti-Active

Introduction

Aufhauser SilverAlloy A-69Ti-Active is an active, brazing alloy that promotes wetting and good capillary action on several surfaces that would otherwise be difficult to join by brazing. The active components of this alloy promote wetting on, for example, ceramics and aluminum oxides (sapphire).

Applications

Brazing with Aufhauser SilverAlloy A-69Ti-Active provides a reliable method of bonding ceramic to metals (including stainless steels) as well as bonding metal oxides (like sapphire)

Nominal Composition

| Ag % | Cu % | Ti % |
|------------------|------------------|-------------------|
| 68.8 (± 1) | 26.7 (± 1) | 4.5 (± 0.5) |

Physical Properties *

| | | |
|---|---|--|
| Solidus Temperature | 1526°F | 830°C |
| Liquidus Temperature | 1562°F | 850°C |
| Density | 5.0 TOz/in ³ | 9.4 g/cm ³ |
| Thermal Conductivity | 127 BTU h ⁻¹ ft ⁻¹ °F ⁻¹ | 219 W m ⁻¹ °K ⁻¹ |
| Thermal Expansion Coefficient (R.T. - 500°C) | 10.3 x 10 ⁻⁶ °F ⁻¹ | 18.5 x 10 ⁻⁶ °C ⁻¹ |
| Recommended Brazing Temperature | 1470 – 1650 °F | 800 – 900 °C |

Electrical Properties

| | | |
|-------------------------|---|--|
| Electrical Resistivity | 20 Ω CM ft | 34x10 ⁻⁹ Ω m |
| Electrical Conductivity | 0.049 Ω ⁻¹ CM ⁻¹ ft | 29 x 10 ⁶ Ω ⁻¹ m ⁻¹ |

Mechanical Properties

| | | |
|----------------------------------|--------------------------|---------|
| Young's Modulus | 12 x 10 ⁶ psi | 85 GPa |
| Poisson's Ratio | 0.36 | |
| Yield Strength | 42,400 psi | 292 MPa |
| Ultimate Tensile Strength | 49,200 psi | 339 MPa |
| Elongation (2-inch gage section) | 28% | |

* Aufhauser 69Ti-Active is a composite material. The above properties apply to the alloy before it is used in the brazing process.