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Aufhauser Zirconium 62 Active

DESCRIPTION

Aufhauser Zirconium 62 Active is a low-erosion, corrosion resistant, filler metal foil, in roll form, for brazing:

titanium alloys, titanium aluminides, refractory metals, ceramics, aluminum oxides (sapphire), graphite, carbon-carbon composites, titanium to copper, and titanium to stainless steel.

This filler metal provides **extremely high corrosion resistance** in brazed joints, due to the absence of copper and silver.

APPLICATIONS

Typical applications: heat exchangers, fuel pipelines, medical instruments or implants, honeycomb panels, fuel cells, compressor rotors, electronic devices, cooling systems of divertors.

DURABILITY

Aufhauser Zirconium 62 Active foil has been tested to provide a reliable 500-hour working-life when subjected to corrosive atmospheres with temperatures up to 550°C (1022°F). If temperatures rise above 650°C (1200°F), the joint will fail after approximately one hour. The cause of failure usually is differential coefficients of thermal expansion between stainless steels and ceramics and ceramic-like oxides. Proper joint design may reduce this problem.

PHYSICAL PROPERTIES

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| Liquidus temperature | 813°C (1495°F) |
| Solidus temperature | 796°C (1465°F) |
| Brazing temperature for joining: | |
| Titanium or Niobium | 850-870°C (1562-1598°F) |
| Ceramics, Graphite, Sapphire, and Carbon composites | > 900 °C (1652°F) |
| Density | ~ 6.72 g/cm ³ (~ 0.24 lb/in ³) |
| Coefficient of thermal expansion | 8.8 x 10 ⁻⁶ m/[m·°C-1] (4.9 x 10 ⁻⁶ in/[in·°F-1]) |
| Brazing: in vacuum | 10 ⁻⁴ Torr or better |