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## Zirconium Alloy Z-62Zr-Active

### DESCRIPTION

Aufhauser Zirconium Alloy Z-62Zr-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 Alloy Z-62Zr-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

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 <sup>3</sup> (~ 0.24 lb/in <sup>3</sup> )
Coefficient of thermal expansion	8.8 x 10 <sup>-6</sup> m/[m·°C <sup>-1</sup> ] (4.9 x 10 <sup>-6</sup> in/[in·°F <sup>-1</sup> ])
Brazing: in vacuum	10 <sup>-4</sup> Torr or better