



HI-ALLOY 105

TUNGSTEN CARBIDE COMPOSITE ROD

Hi-Alloy 105 is a composite type tungsten carbide brazing alloy consisting of 60% cobalt grade, sintered, tungsten carbide particles suspended in a matrix of nickel silver. The tungsten carbide particles provide the ultimate in abrasive wear resistance and the nickel silver matrix has up to 100,000 psi tensile strength to hold the carbides in place for the long haul.

The tungsten carbide particles are available in a variety of sizes to meet the requirements of almost any application. Some restrictions may apply.

Particle Sizes

1/8 X 1/16"
1/8 X 3/16"
1/4 X 3/16"
5/16 X 1/4"
3/8 X 5/16"

Typical Analysis of the Matrix

Copper	48.0%
Nickel	10.0%
Silicon	0.1%
Zinc	Remainder

Melting temperature is approximately 1680° F.

Application Data

Make sure the surface to be coated is free of surface contaminates. Pre-application tinning with a flux coated nickel silver, or bare rod and a borax type flux is recommended. Adjust torch to a low pressure neutral flame. Preheat metal to 600° - 800° F. Concentrate heat in the starting area to a dull cherry red (1600° F.), continue heating and begin application of the tinning rod, use appropriate heat to make the molten metal flow out to 1/32 - 1/16 inch thickness. After tinning melt off the 105 alloy in 1/2 to 1 inch sections and use a circular motion with the torch to spread the molten matrix out and bond it with the surface. Use the end of the rod or the tinning rod to arrange the tungsten carbide particles in the desired pattern. If a particle does not appear to be bonding it should be removed and discarded.