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BNi-6

TECHNICAL DATA

NOMINAL COMPOSITION

Nickel	Remainder
Phosphorus	11.0% ± 1.0
Carbon	0.06% max
Sulfur	0.02% max
Aluminum	0.05% max
Titanium	0.05% max
Zirconium	0.05% max
Cobalt	0.10% max
Selenium	0.005% max
Other Elements, Total**	0.50% max

**The filler metal shall be analyzed for those specific elements for which values are shown in this table. If the presence of other elements is indicated in the course of this work, the amount of those elements shall be determined to ensure that their total does not exceed the limit specified

PHYSICAL PROPERTIES

Color	Iron Gray
Solidus	1610°F (877°C)
Liquidus	1610°F (877°C)
Recommended Brazing Temperature	1660-1710°F (904-932°C)
Density (Lbs/in^3)	0.29
Specific Gravity	8.12
Electrical Conductivity (%IACS)	N/A
Electrical Resistivity (Microhm-cm)	N/A

USES

BNi-6 is a low melting eutectic nickel brazing alloy used in applications which require high strength and oxidation resistance. Its composition makes it suitable for the brazing of nickel, super alloys and other assemblies which require good joint strength at high temperatures with excellent corrosion and oxidation resistance. BNi-6 is boron free and is therefore suitable for use in certain nuclear applications.

BRAZING CHARACTERISTICS

Due to its eutectic nature BNi-6 exhibits excellent flow characteristics in narrow, deep joints where tighter clearances are maintained. When wetting to base metals which contain higher Al or Ti content in an inert atmosphere, nickel plating of the base metal is recommended. Dry reducing atmospheres or inert atmospheres are also recommended. When joining thinner, less ductile assemblies brazing should be conducted at the lower end of the braze range along with fast heating and cooling cycles so as so minimize distortion.

PROPERTIES OF BRAZED JOINTS

The properties of a brazed joint are dependent upon the base metal, joint design and brazing technique. For atmospheric brazing the recommended radial joint clearance for nickel-base alloys fall within 0.00-0.001” range for atmosphere brazing.

SPECIFICATIONS	BNi-6 conforms to: Unified Numbering System (UNS) N99700 and American Welding Society (AWS) A5.8/A5.8M BNi-6
AVAILABLE FORMS	Foil, powder, tape and preforms to customer specifications
SAFETY INFORMATION	The operation and maintenance of brazing equipment or facility should conform to the provisions of American National Standard (ANSI) Z49.1, “Safety in Welding and Cutting.”

Individuals requiring further information and Engineering Specification Documents may wish to contact the Engineering Society for Advanced Mobility, Land Sea Air and Space, The Society of Automotive Engineers http://www.sae.org/ (SAE AMS) or The American Welding Society (AWS) http://aws.org/

NOTE:

DISCLAIMER

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