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HT-23

TECHNICAL DATA

NOMINAL COMPOSITION	Copper	67.5% ± 2.0
	Manganese	23.5% ± 2.0
	Nickel	9.0% ± 1.0
	Other Elements, Total	0.50% Max
PHYSICAL PROPERTIES	Color	Silver
	Solidus	1697°F (925°C)
	Liquidus	1751°F (955°C)
	Recommended Brazing Temperature	1801-1851°F (983-1011°C)
	Density (g/cm³)	8.54
	Shear Strength (MPa)*	322
Tensile Strength (MPa)*	590	
USES	HT-23 is primarily used in joining tungsten carbides, tool steels, cast irons, stainless steels and nickel based heat resistant alloys. It provides high strength, good ductility, and short-term oxidation resistance above 1000°F (538°C).	
BRAZING CHARACTERISTICS	HT-23 can be brazed by a variety of different processes including induction, vacuum, and atmospheric furnace brazing. When brazing under dry hydrogen or argon, ensure a dew point of at least -62°C. An atmospheric level of 10 ⁻³ torr or better is recommended for vacuum brazing. HT-23 also has excellent gap filling capabilities and develops maximum strength characteristics with clearances of 0.005-0.010". It's important to ensure that the base components are properly cleaned prior to the application of the braze alloy.	
PROPERTIES OF BRAZED JOINTS	The properties of a braze joint are dependent upon the base metals, joint design and clearance, and brazing technique. *The mechanical properties listed above were determined from lap joints of tungsten carbide and SAE 4340 steel tested at ambient temperatures.	
SPECIFICATIONS	HT-23 conforms to: Nicuman 23, HT-675	
AVAILABLE FORMS	Strip, engineered preforms, specialty preforms, powder and paste	
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:

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