

Data Sheet

Copper ABA™ (L) (Mac-Copper ABA™ L-WM)

Description

High-purity Active Braze Alloy of copper, silicon, titanium and aluminium, developed for direct application to ceramic surfaces. Nominal composition by weight: **92.75% Cu, 3.0% Si, 2.25% Ti and 2.0% Al.**

Prime Features:

- Wets and bonds to virtually any metallic surface, as well as to non-metallics such as oxides, nitrides and carbides
- Allows ceramic-to-ceramic and ceramic-to-metal surfaces to be brazed without metallizing, firing and electroplating
- Cuts time and costs in manufacture of ceramic/metal assemblies
- Produces strong, highly reliable and vacuum-tight brazed joints

Typical Applications:

High-integrity brazed joint duties for:

- Vacuum interrupters and other hermetically sealed components used in power generation
- Mechanical assemblies

Specifications

- Quality Assurance to ISO 9002

Supplied As:

- Foil
- Wire

Impurity Limits

ZN	less than 0.001%
CD	less than 0.001%
PB	less than 0.002%
P	less than 0.002%
C	less than 0.01%

All other metallic impurities having a vapor pressure **higher** than 10⁻⁷mm Hg at 500C are limited to 0.002% each. Impurities having a vapor pressure **lower** than 10⁻⁷mm Hg at 500C are limited to a total of 0.075%. (This applies to all forms except powder and extrudable paste.)

Physical Properties

Recommended Brazing Temperatures	1025-1050 °C 1877-1922 °F
Recommended Brazing Atmosphere	10 ⁻⁵ (or inert gas) mm Hg
Thermal Conductivity (Calculated)	38.0 W/m.K 22.0 BTU/ft.h.°F
Liquidus Temperature	1024 °C 1875 °F
Solidus Temperature	958 °C 1756 °F
Thermal Expansion Coefficient	19.5 @RT-700C, 10 ⁻⁶ /C 10.8 @RT-1292°F, 10 ⁻⁶ /F
Density	8.1 Mg/m ³ 0.293 lb/in ³
Electrical resistivity	198 10 ⁻⁹ ohm.m:
Electrical conductivity	5.05 10 ⁶ /ohm.m
Yield Strength (0.2% offset)	279 MPa 40.5x10 ³ lb/in ²
Tensile Strength	520 MPa 75.4x10 ³ lb/in ²
Elongation (2in/50mm gage section)	42%
Young's modulus	96 GPa 14x10 ⁶ lb/in ²
Poisson's ratio (calculated)	0.33
Knoop Hardness	1100 KHN expressed as MPa