

280 Magnesium

NOMINAL COMPOSITION

Magnesium	94.0% Min
Other Elements (Total)	Proprietary

PHYSICAL PROPERTIES

Color	Steel gray
Specific Gravity ⁽¹⁾	1.72
Density (lbs/in ³) ⁽¹⁾	0.062
Dimensions ⁽¹⁾	1" x 1" x .071"

⁽¹⁾ These values are approximate values – determined by standard measurement technology

PRODUCT APPLICATION

In vacuum brazing of aluminum, magnesium acts as residual oxygen and water vapor getter and it modifies the oxide film on the surface of aluminum. 280 Magnesium is a preferred source of magnesium vapor, and it replaces magnesium chips or powder because of its slow release of the magnesium vapor. 280 Magnesium prevents early vaporization and extends vaporization to the end of the braze cycle. Approximately three grams of 280 Magnesium chips should be used per cubic foot of furnace; however, the weight of magnesium may change depending on furnace conditions.

Typical furnace vacuum level for aluminum brazing in a well-conditioned furnace is between 10⁻⁴ to 10⁻⁶ torr at brazing temperatures.

The initial heating of the furnace should be as rapidly as possible; allowing the furnace to outgas before the aluminum surfaces becomes hot and reactive to oxygen and water vapor. When the part reaches 900°F, the heating rate should slow to allow time for the magnesium to react with the braze component surface, to achieve temperature uniformity, and to prevent part temperature from overshooting the brazing temperature.

Magnesium vaporization should be prevented or minimized until the aluminum parts reach 900°F (482°C). Below 900°F, the magnesium vapor will deposit on the cold aluminum surface, oxidize, and interfere with braze flow. Above 900°F, the magnesium starts to react with the Al₂O₃ layer, preparing it for wetting and braze filler metal flow. It may be necessary to shield the 280 Magnesium with a vented stainless steel or ceramic cover to slow the magnesium heating rate early in the cycle and extend its time of activity.

AVAILABLE FORMS

280 Magnesium is packaged in 1 lb., 2 lb., and 4 lb. containers.

SPECIFICATIONS

N/A

APPLICABLE PRODUCT CODE(S)

The applicable Lucas-Milhaupt product code(s) for this technical data sheet: 69-053

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". For more complete information refer to the Material Safety Data Sheet for 280 Magnesium.

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