LucasMilhaupt®
A Handy & Harman Company
Global Brazing Solutions®

Technical Data Sheet

TRIMET® 259
(PLYMETAL® A50N)

NOMINAL COMPOSITION

Braze Filler Metal: Silvaloy 505 (Clad Portion)	
Silver	50.0% ± 1.0%
Copper	20.0% ± 1.0%
Zinc	28.0% ± 2.0%
Nickel	2.0% ± 0.5%
Other Elements (Total)	0.15% Max
Core	
Copper	99.90% Min

PHYSICAL PROPERTIES

Braze Filler Metal: Silvaloy 505 (Clad Portion)	
Melting Point (Solidus)	1220°F (660°C)
Flow Point (Liquidus)	1305°F (705°C)
Brazing Temperature Range	1305°F - 1550°F (705°C - 843°C)

PRODUCT USES

Trimet 259 is a three layer composite metal sandwich consisting of a copper core clad on each side with Silvaloy 505 alloy. The relative thicknesses of the three (3) layers are in a 1/2/1 ratio. Other relative thickness ratios can be produced for special applications if warranted.

Trimet 259 is useful for brazing large carbide tools inserts with braze surface areas in excess of 0.5 in^2 (322.58 mm^2) or linear dimension over 0.75 in (19mm). In these cases the stress normally set up in the carbide, by differential contraction between the carbide and tool shank during cooling, is relieved by the yielding of the copper core of the Trimet 259. This product is used as pre-placed shim at the interface of the parts being joined. Brazing procedures are identical with those required for Silvaloy 505.

Trimet is sometimes used to braze aluminum-bronze to steel. The copper acts as a barrier layer to prevent migration of aluminum from aluminum-bronze base metal to the steel surface and adversely affecting the wetting of the steel by the Silvaloy 505.

Trimet shims have also found use in joining porous sintered parts and wire mesh screens where “wicking” of the filler metal is normally challenging. The copper core in these cases acts to restrict filler metal flow, confining it to the joint area where needed.

PROPERTIES OF BRAZED JOINT

The properties of a brazed joint are dependent upon numerous factors including base metal properties, joint design, metallurgical interaction between the base metal and filler. Lap Joints have been brazed and tested for tensile strength at room temperature, on the listed metals, with the following typical results:

	Tensile Strength (lbs/in^2)	Elongation (% in 2 in.)
Cold-Rolled Steel	65,000 - 70,000	20.0 - 22.0

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AVAILABLE FORMS

Strip, engineered preforms, specialty preforms per customer specification.

SPECIFICATIONS

Silvaloy 505 alloy conforms to the following specifications:

- American Welding Society (AWS) A5.8/A5.8M BAg-24
- ASME Boiler & Pressure Vessel Code, Sec II-C, SFA-5.8 BAg-24

APPLICABLE PRODUCT CODE(S)

The applicable Lucas-Milhaupt product code(s) for this technical data sheet: A00000264, Legacy Codes: 38-259, ESP1A.

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 Trimet 259.

WARRANTY CLAUSE

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