

### APPLICATION

Molybdenum-Manganese (Mo-Mn) preparations are products designed for use in the processing of reliable, high temperature, metal-ceramic seals and for metallizing ceramic bodies and substrates.

Applications include ceramic package assemblies, ceramic receiving tubes, high power transmitting tubes, magnetrons, microwave diodes, etc.

Both 52-100 and 52-103 are designed for use on alumina ceramics. Both formulations are screen-printable.

### PROCESSING RECOMMENDATIONS

**Thinning:** Thinning is not recommended, since the paste is supplied at the correct viscosity for application.

Contact your local Ferro Representative for appropriate solvent details, should thinning become necessary to replace solvent lost through evaporation.

**Printing:** Screen print using a 325 mesh stainless steel screen with a 12µm emulsion thickness is recommended.

**Drying:** A brief leveling of 5 to 15 minutes at 25°C is recommended. Drying should then be accomplished in a box, air circulating or infrared ovens at 90°C to 100°C for 10 to 15 minutes.

**Paste Storage & Shelf Life:** The paste should be stored in tightly capped containers, in a cool, dry place away from direct sunlight. Properly stored material will have a shelf life in excess of 6 months.

**This data represents typical properties and is not intended to be used as specification limits**

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Typical Properties		
	52-100	52-103
Viscosity (poise) <sup>1</sup> :	750 ± 150	900 ± 150
Substrate Type:	Alumina	Alumina
Line Resolution:	150µm	150µm
Dried Thickness:	20-25µm	20-25µm
Fired Thickness:	15-18µm	15-18µm
Electrical Conductivity:	7-18mΩ/sq.	7-12mΩ/sq.
Platability (with nickel):	Excellent	Excellent
Thinner:	0802	0802
Adhesion <sup>2</sup>		
a) Initial:	14-17lbs	14-17lbs
b) Aged (48 hours, 150°C):	14-17lbs	14-17lbs
<b>Processing Guidelines:</b>		
Leveling:	25°C 15 Minutes	25°C 15 Minutes
Drying:	100°C 10 Minutes	100°C 15 Minutes
Firing:	1300-1400°C 30-60 Minutes	1300-1400°C 30-60 Minutes
Furnace Atmosphere <sup>3</sup> :	50%H <sub>2</sub> /50%N <sub>2</sub>	50%H <sub>2</sub> /50%N <sub>2</sub>
Dew Point:	25°C	25°C

Notes:

<sup>1</sup>Viscosity as measured on Brookfield model HBT cone/plate viscometer, 9.6 reciprocal seconds, 25°C.

<sup>2</sup>80 x 80 mil pads, nickel plated, Sn 60 Pb 40 solder, 240°C, 90° wire peel.

<sup>3</sup>Minimum 30% H<sub>2</sub> is recommended.

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