SILVER PASTE

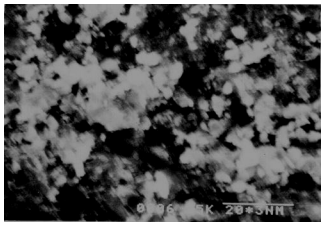
(ELECTRICAL CONDUCTING PASTE)

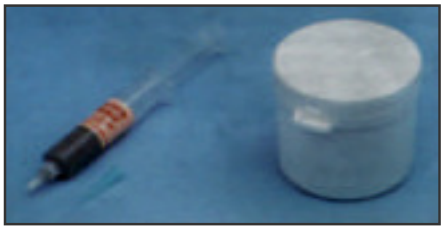
Applications:

These series of MECP grade of silver conducting pastes are available in more than 30 different grades, virtually covering all industrial and research applications, meeting diversified electrical, mechanical, thermodynamical/tribological and environmental specifications. On account of its high purity and consistence in quality, these electrical conducting pastes are the first choice of any research organization and industries dealing in semiconductors, ceramics piezoelectric, optics or sensor/mems related products.

Working Principle:

These metal conducting epoxies are either organic or inorganic in nature when these epoxies are mixed with hardner in predefined ratio and cured, the ultra fine silver particles come close, forming dense metallic matrix with very little interparticle spacing and at the same time deep penetration in to the voids of interface surface resulting in high electrical conductivity with ultra high bonding strength, having least corrosion/aging effect on its desired bonding properties.





Benefits:

1. High flash temperature / Better temperature operating range. 2. High dynamic yield stress/high performance to hard setting. 3. Easy re-mixing / low off state viscosity. 4. Non-abrasive/ chemically compatible. 5. High thermal conductivity with electrical high conductivity 6. Negligible expansion with least pinhole formation in bond. 7.Low weight loss during curing.

Mechanical/Electrical Specifications: **high electrical conductivity>10^{-3} ohm.cm**

Properties	**Technical Specifications**				
Product code	**MECP-0750**	**MECP –0500**	**MECP –0300**	**MECP –0100**	**MECP- 050**
Base [O.M. < 5.0 MICRON] Mixing ratio (single component) Filler CTE unit volume [in/in/^{0} Fx10^{-6} (^{0} F) Specific Heat J/g^{0}C Tenile strength(psi)	**O.M.** **single component** **Silvers/other** **40** **0.60** **600**	**O.M.** **single component** **Silvers/oth** **37** **0.60** **800**	**O.M.** **single component** **Silvers/oth** **35** **0.59** **800**	**O.M.** **single component** **Silvers/oth** **30** **0.555** **1200**	**O.M.** **single component** **Silvers/oth** **29** **0.54** **1200**
Min-Operating temperature ^{0}C **Curing -** *duration-15/30/60 sec [max]-* **Thermal conductivity** (10^4 W/m^2.^{0}C) **Electrical resistivity (10^{-3}.ohm.cm)** **Color [single part]** Pot life [minutes]-options Shelf life	750 100^{0}C/15s cool++350^{0}C/15 s.x3 12 **450** silver+grey 30 six month	500 **100^{0}C/10s** **+cool+300^{0}C/10 s.x3** 12 **200** silver 30 six month	300 **100^{0}C/10s** **+cool+200^{0}C/10 s.x3** 10 **180** silver 30 six month	200 **60^{0}C/15s** **+cool+80^{0}C/15 sx3** 7 **150** silver 30 six month	050 **60^{0}C/15 s** **+cool+60^{0}C/15 sx3** 07 **130** silver 30 six month

1. Data is calculated with and without thermal polymer applied and may vary from lot to lot. 2. Thermal conductivity/electrical resistivity may vary w.r.t. temperature deviating from established empirical relation. Mecp-0200 has been divested. However it may supplied on special order.

Application Notes:

The minimum order Quantity is 50 gm.
Keep the paste /diluents in cool for longer lifer.
All surfaces must be free of oil, grease, dirt, corrosives, oxides, paint or other foreign matter.
Single -component products should be stirred thoroughly. Preheat paste at low temperature as indicate such fluid component dries and then finally give thermal shot at defied temperature for some sec. For small sample final curing sustain for 5-10 sec with intermittent cooling for 3-4 times. Large samper(<5 gms)intermittent thermal shot for 10-20 sec, five-6 times.
In most cases, the adhesive should be applied to both surfaces maintaining a glue line of less than 500 micron. After assembling
The parts, press the assembly to reduce the air entrapment.
Paste /diluents may cause irritation of skin in some sensitive
Persons. Use Gloves and Goggles.
Company makes no warranty express or implied concerning the
Use of this product. The user assumes all risk of use or handling

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SILVER PASTE

(ELECTRICAL CONDUCTING PASTE)

Application: Metal to ceramic/ FABRIC COATING/microwave/ferroelectric…… NANO GRADES

Mechanical/Electrical Specifications: **Ultra high electrical conductivity>10^{-5} ohm.cm**

Properties	**Technical Specifications**				
Product code	**MECP –07501**	**MECP –05001**	**MECP –03001**	**MECP-0100 1**	**MECP- 0501**
Base [O.M. < 1.0 MICRON]	O.M.	O.M.	O.M.	O.M.	**O.M.**
Mixing ratio [single component]	single component	single component	single part	single part	single part
Filler	Silvers/other	Silvers/other	Silvers/other	Silvers/other	Silvers/other
CTE unit volume [in/in/^{0} Fx10^{-6} (^{0} F)	40	37	35	35	35
Specific Heat J/g^{0}C	0.60	0.60	0.59	0.65	0.55
Tenile strength(psi)	600	700	800	1000	1200
Operating temperature ^{0}C	750	500	300	100	50-70
Curing - *duration-15/30/60 sec [max]-*	100^{0}C/15s cool+350^{0}C/15 s.x3t	100^{0}C/15s +cool+300^{0}C/15 s.x3t	100^{0}C/15s cool+250^{0}C/15 s.x3t	70^{0}C/15s cool+ 100^{0}C/15 s.x3t	60^{0}C/15s+ cool+ 60^{0}C/15 s.x3t
Thermal conductivity (10^4 W/m^2.^{0}C)	12	12	10	08	07
Electrical resistivity (10^{-5}.ohm.cm)	08	08	07	06	05
Color	silver	silver	silver	silver	silver
Pot life [minutes]-options	30	30	30	30	30

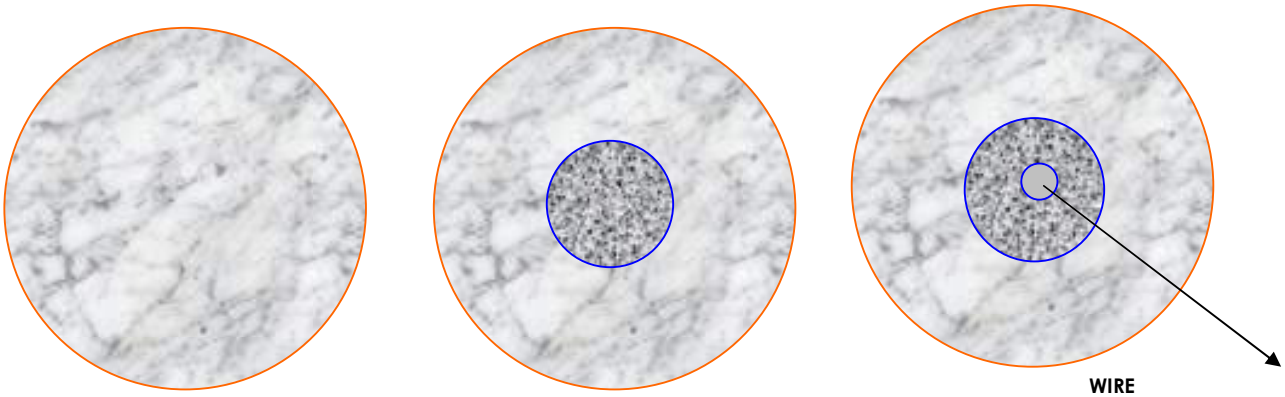
Data is calculated with and without epoxy applied and may vary from lot to lot.

Product code namely MECP –07501 goes upto 750 degree cel and ideally suitable for ferroelectric Non wire contact or multilayer hybrid circuit for micro-wave application.

Two component electrical conducting paste have been divested and are available on extra cost only.

Fast curing of mecp, in few minutes, ensure no parametreic changes of samples, unlike other make, where curing goes in hours.

HOW TO MAKE CONTACT BONDING:



Substrate without electrical conducting paste

1st step

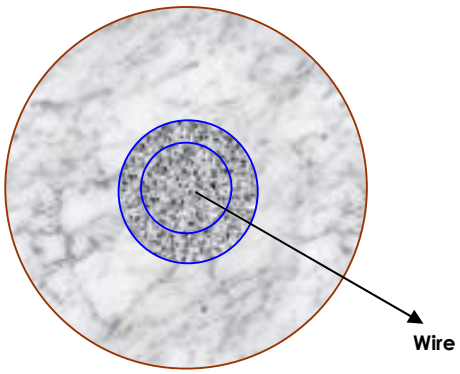
first layer of electrical conducting paste drop over substrate & cure

2nd step

WIRE

fix wire over first layer of electrical conducting paste & cure

3rd step



Final layer of electrical conducting paste over Prebonded contact wire & cure

Final step

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