

## mAgic PE338

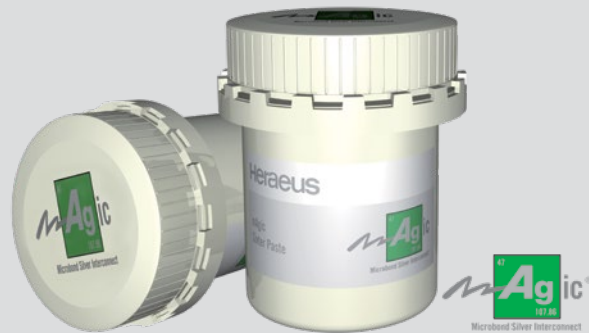
### Ag Sinter Paste for Stencil Printing

mAgic Pressure Sinter Paste PE338 is a lead-free die attach material with improved workability on copper surfaces.

mAgic Pressure Sinter Paste PE338 F1510 is a patented high reliability material that increases life time performance with wide band gap material SiC and GaN.

#### PE338 & PE338 F1510 benefits

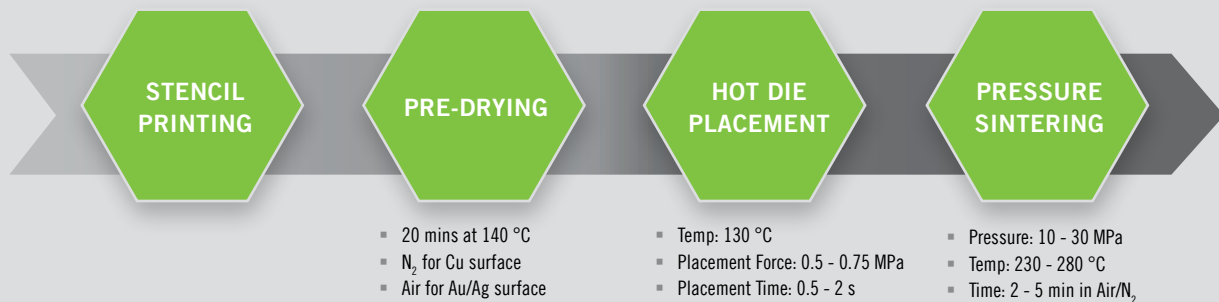
- Improves device reliability
- High thermal conductivity for longer lifetime
- High electrical conductivity improves device efficiency
- Enables high operating temperature
- Lead-free and halogen zero formulation for environmental compliance
- No flux residue, no cleaning required



#### Benchmarking (Lead Free Solder Paste vs. PE338 Ag Sinter Paste Series)

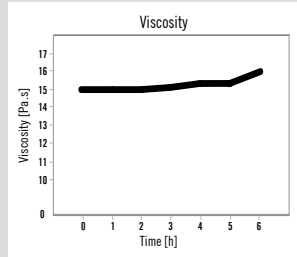
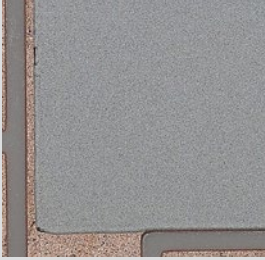
Series	Solder Paste SnAg3.5	mAgic Paste PE338	mAgic Paste PE338 F1510
Process Temperature (°C)	~ 250	> 230	> 230
Electrical Resistivity (mΩ.cm)	0.02	≤ 0.010	≤ 0.010
Thermal Conductivity (W/m.K)	57	> 200	> 200
CTE (ppm/K)	27.9	19	15
E-Modulus (GPa)	33.4	40 - 65	25 - 40

#### Pressure Sinter Paste Process and Application



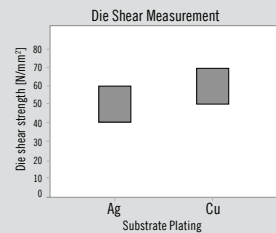
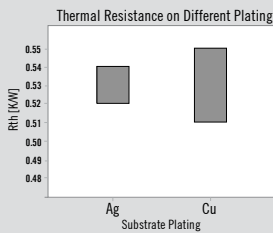
\* Varies depending on assembly

## Printing Application Over Time

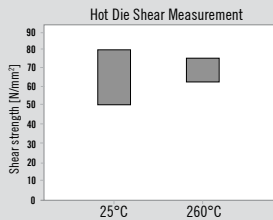


- Excellent printing performance overtime
- Consistent paste deposit volume for high production efficiency
- Stable rheology for long stencil life

## Thermal Conductivity and Die Shear Strength Chart



- Die Size: 4x4 mm, Ag Die
- Pressure Applied: 230 °C, 10 MPa, 3 mins ; 20 MPa, for Cu



- Die Size: 10x10 mm, Ag Die, Cu Substrate
- Pressure Applied: 230 °C, 20 MPa, 5 mins

Reliability tests	Condition	Results
<b>TCT</b> (Temperature Cycle Test)	-65 °C / +150 °C	Passed
<b>PCT</b> (Pressure Cooker Test)	121 °C, 100 % RH, 2 atm	Passed
<b>HTST</b> (High Temperature Storage Test)	250 °C, 1000 hrs	Passed
<b>Un-Biased HAST</b>	130 °C/ 85 %, 96 hrs	Passed

## Product Properties

Physical Properties	PE338	PE338 F1510
Alloy	Silver	
Metal content	82 %	73 %
Fillers	0 %	10 %
Particle size	≤ 20 µm	
Sinter temperature	≥ 230 °C	
Halogen content	Halogen Zero	
Compatible surfaces	Ag, Au, Cu	
Sinter atmosphere	Air, N <sub>2</sub>	

## Application/Process

Printing	Yes
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## Features & Benefits

Work life	8 hrs
Shelf life	6 mths
Residue cleaning	Not required
Storage condition	2 – 10 °C

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