

## ES808S Low Halogen Surface Mount Adhesive

ES808S is designed for the bonding of surface mounted devices to printed circuit boards prior to wave soldering. It is particularly suited for applications where a high dot profile and high dispense speeds are required.

- Suited for pin transfer and stencil print
- Good humidity resistance
- Excellent wet strength and adhesion to substrate
- Good electrical characteristics

<b>Approvals</b>	<b>RoHS Compliant (2015/863/EU):</b>	<b>Yes</b>
<b>Typical Properties</b>		
Liquid Properties:	Raw Material	Epoxy
	Appearance	Red viscous gel
	Density (g/ml)	1.20
	Viscosity @ 25°C, (Pa s)	22,000 – 60,000
	Particle Size (µm)	≤80
	Thixotropic Index	≥4.5
	Storage Conditions	Dry Conditions: 2-10°C
Cured Properties:	Density (g/ml)	1.20 ±0.1
(30 minutes @ 150 °C)	Coefficient of Thermal Expansion, <small>ASTM D696, K<sup>-1</sup></small>	70 ppm
	Glass Transition Temperature, <small>ASTM D4065, (°C)</small>	110
	Lap Shear Strength, <small>CMT6104, mild steel</small>	≥35 N/mm <sup>2</sup> (≥5075 psi)
	Thermal Conductivity, <small>ASTM C177, (W/m K)</small>	0.25
	Surface Resistivity, <small>ASTM D257, (Ω)</small>	10 <sup>15</sup>
	Volume Resistivity, <small>ASTM D257, (Ω-cm)</small>	10 <sup>15</sup>
	Dielectric Constant / Dissipation Factor, <small>ASTM D150</small>	
	1-kHz	2.96 / 0.009
	10-kHz	2.81 / 0.03
	1,000-kHz	2.71 / 0.03
	10,000-kHz	2.58 / 0.03
	Electrolytic Corrosion, <small>DIN 53489</small>	AN - 1.2

<b><u>Description</u></b>	<b><u>Packaging</u></b>	<b><u>Order Code</u></b>	<b><u>Shelf Life</u></b>
Low Halogen Surface Mount Adhesive - ES808S	200ml syringe	ES808S_200GS	6 Months

**Copyright Electrolube 2013**

All information is given in good faith but without warranty. Properties are given as a guide only and should not be taken as a specification.

Electrolube cannot be held responsible for the performance of its products within any application determined by the customer, who must satisfy themselves as to the suitability of the product.

Ashby Park, Coalfield Way,  
 Ashby de la Zouch,  
 Leicestershire LE65 1JR

T +44 (0)1530 419 600

F +44 (0)1530 416 640

BS EN ISO 9001:2008  
 Certificate No. FM 32082

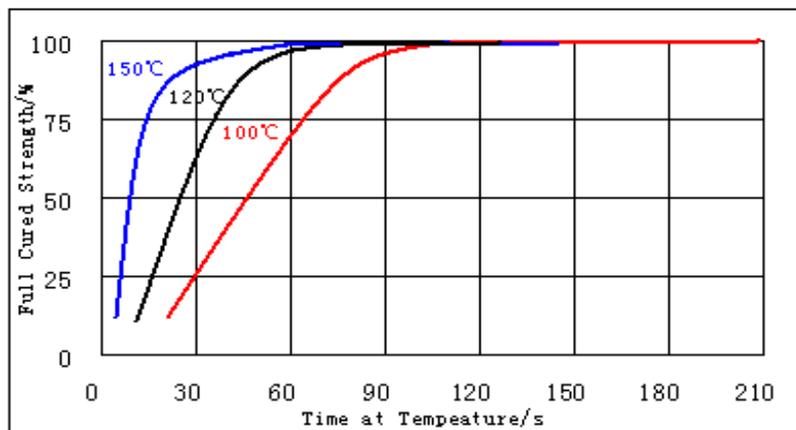
## Directions for Use

### Typical Curing:

Recommended conditions for curing are over 100°C (Typically 90 seconds @ 130 °C or 60 seconds @ 150 °C). Rate of cure and final strength will depend on the residence time at the cure temperature and the extent of thermal compensation of electronic units.

### Cure speed vs Time & Temperature:

The following graph shows the rate of torque strength developed with time at different temperatures. These times are defined from the moment the adhesive reaches cure temperature. In practice, total oven time may be longer to allow for heat up period.



### Typical adhesive properties of cured material:

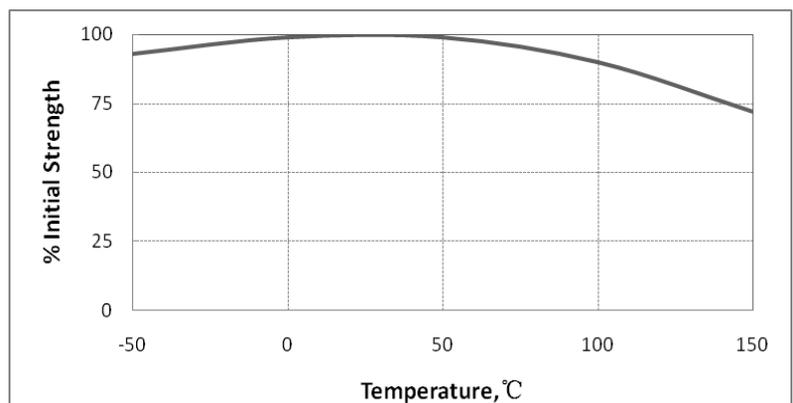
Cured for 3 minutes @ 150 °C

Push-off Strength: C-1206 on bare FR4 board  $\geq 40\text{N}$  ( $\geq 9\text{lb}$ )

### Hot strength, tested at temperature:

Cured for 30 minutes @ 150 °C

Lap Shear Strength, ASTM D1002: mild steel



### Resistance to lead free solder:

Good compatibility with both water based and solvent based solder according to IPC SM817 (2.4.42.1).

### Application Information:

1. ES808S is suitable for most open squeegee and enclosed head stencil printing systems, recommended print speeds is 50 mm/s up to 100 mm/s - this will vary with product selected and printer set-up.
2. After storage in a refrigerator the adhesive must return to ambient temperature before use (ideally 25°C to 30°C, <70 % RH), 2 to 4 hours is recommended.
3. Typical starting parameters (steel stencil/ steel squeegee/single stroke mode):

Print Speed	60mm/s
Squeegee Pressure	4 to 6N/cm
Separation Speed	0.1 to 3mm/s
Gap between Stencil and PCB	1mm
4. The product will remain dispensable on the stencil for a maximum of 1 days of continuous operation at 25°C, 55 % RH. Higher temperatures will decrease the time.
5. These parameters will vary depending on the type of application system used and should be optimized accordingly.
6. Uncured adhesive can be cleaned from the board with IPA or Safewash Total.
7. Material removed from containers may be contaminated during use. Do not return product to the original container.

### Storage:

- Product is required to store in the unopened container in a dry location.
- Optimal Storage: 2 °C to 10 °C. Storage below 2 °C or greater than 10 °C may affect product properties.

Revision 1: Jan 2019