Product Overview

Kembond is a range of electrically conductive adhesives that provide a variety of RFI/EMI shielding and grounding solutions. They consist of a densely loaded adhesive filled with micro sized highly conductive particles.

Application

- Vibration and/or shock resistant sealant/adhesive for electronic assemblies.
- Electrical connection/bonding of materials with dissimilar thermal expansion coefficients i.e. mounting shielded windows EMI shielding with environmental sealing (IP68 possible).
- ESD control/grounding.
- Structural adhesive – can be used to permanently bond metal assemblies.
- Electrical connection of components avoiding the use of mechanical fixings or solder.

Storage

It is recommended that when not in use that the material is stored in a cool dark, dry place. If kept properly sealed and in a suitable location then the material will remain usable for up to 3 months, depending on type.

Handling

When using this material observe usual standards of industrial hygiene/practice. Avoid skin/eye contact and work in a well ventilated area. For more detailed information please refer to the MSDS (Material Safety Data Sheet).

Product Overview (Continued)

Availability

Electrically Conductive Silicone Adhesives RTV

- Single component – ready to use.
- Room temperature cure.
- Neutral cure – does not involve corrosive by-products on curing.
- Safe for use with most common substrates – non tarnishing / discolouring.
- Excellent resistance to ageing.
- Wide service temperature range – remains flexible and conductive at extremes of temperature.
- Stable – low bond (joint) resistance through temperature cycling.

Kembond RTV can be supplied in either standard manual or pneumatic (air dispense) 10ml syringe barrels from which the material may be directly applied. Both formats will accept a variety of dispense tips (including luer lock types) for accurate, controlled application. Larger sizes of 55ml, 170ml & 310ml are available on request.

Electrically Conductive Epoxy Adhesives

- Very high bond strength.
- Room temperature cure.
- Flexible – degree is variable by adjusting mix ratio.
- Extremely resistant to fracture.
- Safe for use with most common substrates – non tarnishing / discolouring.
- Excellent resistance to ageing.
- Wide service temperature range – retains strength and conductivity at extremes of temperature.
- Stable – low bond (joint) resistance through temperature cycling.
- Kembond Epoxy can be supplied in either 4ml or 10ml double syringe packs. The material is automatically dispensed in the correct 50:50 ratio. Alternatively, this material can be supplied in separate syringe barrels where variable mix ratios are to be used.

Design considerations

- Service conditions.
- Compatibility with substrate.
- Galvanic compatibility.
- Rigid or flexible bond.

Instructions for Use

Surfaces should be clean dry and sound i.e. free from loose material. It is recommended that areas to be bonded are cleaned using a suitable solvent prior to applying the sealant.

To ensure the highest level of electrical or shielding performance it is essential that the surfaces to be bonded have a low contact resistance. This means that materials that have a naturally occurring oxide layer such as aluminium alloys may need to be lightly abraded and cleaned directly prior to bonding.

The adhesive mix ratio for epoxy may be varied in order to modify the cured properties. For most applications we would recommend a 50:50 mix ratio that will result in a cured adhesive with a small degree of flexibility, high strength and reasonably good low temperature performance.

Increasing the proportion of hardener up to around a maximum of 125:50 will result in a cured adhesive with a relatively high degree of flexibility along with improved low temperature performance but other physical properties will be reduced.

Ensure the two components are thoroughly mixed. Once mixed this material has a working (or pot) life of approximately one hour (depending on the ambient temperature) and may be transferred to a syringe for precise application if required.

Assemble parts as soon as possible and certainly within 15-30 minutes of adhesive application.

In most cases parts may be handled after 12 hours but avoid stressing the joint until full cure has been achieved.

Cure rate may be controlled by means of temperature. The adhesive will fully cure within 3 hours at 60°C. If curing at elevated temperatures be careful to avoid excessive adhesive outflow due to the uncured adhesive viscosity reducing during the curing process.

Excess material should be removed by means of a spatula or similar implement. Smaller traces of the uncured material may be removed by wiping with a lint free cloth damped with methylated spirit, isopropyl alcohol or MEK taking care to observe the safety precautions required in using flammable/harmful solvents of this type.

A priming agent is available for treating some inconsistent or difficult to bond surfaces. Please contact us for further information.

Notice

Technical Specification

Silver loaded epoxy adhesive

Kembond Epoxy SE-002

Uncured Properties	
Colour	Silver
Form	Semi viscous paste
Cure time at 23°C / 50% RH	24 hours
Recommended minimum time before stressing bond	48 hours
Cured Properties	
Density	3.0 g/cm³
Adhesion – lap shear (aluminium to aluminium)	850 N/cm²
Service temperature range	-50°C to 200°C
Bond resistance (aluminium to aluminium)	<10mΩ/cm²
Thermal conductivity	4.8 Wm/K
Recommended bond thickness	0.25mm

Silver copper loaded RTV silicone

Kembond SSC-RTV

Uncured properties	
Colour	Tan
Form	Semi flowable paste
Cure time 10mm bond width at 23°C / 50% RH	24 hours
Recommended minimum time before stressing bond	48 hours
Cured Properties	
Density	3.3 g/cm³
Hardness	65 Shore A
Adhesion – lap shear (aluminium to aluminium)	150 N/cm²
Compression recommended (allowable range)25%	(10-50%)
Service temperature range	-50°C to 125°C
Bond resistance (aluminium to aluminium)	<10mΩ/cm²
Thermal conductivity	1.0 Wm/K
Recommended bond thickness	0.05-0.5mm

Silver Aluminium loaded RTV silicone

Kembond SSA-RTV

Uncured properties	
Colour	Light Tan
Form	Semi flowable paste
Cure time 10mm bond width at 23°C / 50% RH	24 hours
Recommended minimum time before stressing bond	48 hours
Cured Properties	
Density	2.1 g/cm³
Hardness	65 Shore A
Adhesion – lap shear (aluminium to aluminium)	150 N/cm²
Compression recommended (allowable range)25%	(10-50%)
Service temperature range	-50°C to 125°C
Bond resistance (aluminium to aluminium)	<20mΩ/cm²
Thermal conductivity	0.8 Wm/K
Recommended bond thickness	0.05-0.5mm

Nickel Graphite loaded RTV silicone

Kembond SNG-RTV

Uncured properties	
Colour	Dark grey
Form	Semi flowable paste
Cure time 10mm bond width at 23°C / 50% RH	24 hours
Recommended minimum time before stressing bond	48 hours
Cured Properties	
Density	2.1 g/cm³
Hardness	75 Shore A
Adhesion – lap shear (aluminium to aluminium)	150 N/cm²
Service temperature range	-50°C to 150°C
Bond resistance (aluminium to aluminium)	<10mΩ/cm²
Thermal conductivity	1.0 Wm/K
Recommended bond thickness	0.05-0.5mm

Ordering Information

Kembond SNG RTV-310cc	=	Silicone RTV loaded with Nickel graphite particules in 310cc cartridge.