



TECHNICAL DATA SHEET

SHIELDING SOLUTIONS ECA-SE002 RTV ELECTRICALLY CONDUCTIVE TWO PART EPOXY ADHESIVE

Product overview

ECA SE002 is a two component electrically conductive adhesive comprising of a modified epoxy resin filled with conductive silver particles. It cures on mixing at room temperature to form an electrically conductive structural adhesive. Once cured it adheres strongly to a wide range substrates.

Main features

- Very high bond strength
- Flexible (the degree of flexibility is variable by adjusting mix ratio)
- Extremely resistant to fracture
- Suitable for joining materials with dissimilar thermal coefficients of expansion
- Room temperature cure
- Compatible 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

Applications

- Structural adhesive – can be used to permanently bond metal assemblies, EMI windows etc
- Electrical connection of components avoiding the used of mechanical fixings or solder
- EMI shielding with environmental sealing
- ESD control/grounding



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Uncured Properties

Colour	Silver
Form (both components)	Semi-viscous paste
Cure time at 23 °C	24 hours
Recommended minimum time before stressing bond (23 °C)	48 hours

Cured Properties

Density	3.0 gcm ⁻³
Adhesion – lap shear (aluminium to aluminium)	850 Ncm ⁻²
Service temperature range	-50°C* to 200°C
Bond resistance (aluminium to aluminium)	<10mΩ cm ⁻²
Thermal conductivity	4.8 Wm ⁻¹ K ⁻¹
Recommended bond thickness	<0.25mm

* Dependant on mix ratio and application

Packaging

ECA SE002 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.



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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 6 months.

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)

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 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.



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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 dampened with methylated spirit, isopropyl alcohol or MEK taking care to observe the safety precautions required in using flammable/harmful solvents of this type



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Product notes

To the best of our knowledge the information contained in this data sheet is accurate and representative of the product, however, it is the responsibility of the user to determine the suitability, safety and legality of use in any application

We recommend that the end user performs an evaluation to determine the suitability of the product in their application

This product is not intended for direct use in food, medical and cosmetic applications

The values shown on this data sheet are typical and should not be used as the basis of a specification

Information supplied as to the suggested applications for this product should not be construed as constituting a license or concession to infringe any patent. Furthermore we cannot warrant that the sale or use of this product will not infringe any patent involving any application of this product either on its own or in combination with other materials or process



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