



TECHNICAL DATA SHEET

SHIELDING SOLUTIONS ECA NCS001 RTV ELECTRICALLY CONDUCTIVE SILICONE ADHESIVE

Product overview

ECA-NCS001 is a single component electrically conductive adhesive comprising of silicone resin filled with conductive nickel coated graphite particles. It cures on exposure to air at room temperature to form an electrically conductive flexible silicone elastomer. Once cured it adheres strongly to a wide range substrates.

Main features

- Single component – ready to use
- Room temperature cure
- Neutral cure – does not evolve 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
- Reliable connection to electrically 'poor' surfaces e.g. chromated zinc

Applications

- Vibration and/or shock resistant sealant/adhesive for electronic assemblies
- Electrical connection/bonding of materials with dissimilar thermal expansion coefficients e.g. mounting shielded windows
- EMI shielding with environmental sealing (IP68 possible)
- ESD control/grounding



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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 gcm ⁻³
Hardness	75 Shore A
Adhesion – lap shear (aluminium to aluminium)	150 Ncm ⁻²
Elongation	75%
Service temperature range	-50°C to 150°C
Bond resistance (aluminium to aluminium)	<10mΩ cm ⁻²
Thermal conductivity	1.0 Wm ⁻¹ K ⁻¹
Recommended bond thickness	0.05 – 0.5mm

Packaging

ECA NCS001 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.



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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 the facility exists then some form of refrigerated or freezer storage is ideal. If kept properly sealed and in a suitable location then the material will remain usable for up to 16 weeks.

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 than materials that have a naturally occurring oxide layer such as aluminium alloys may need to be lightly abraded and cleaned directly prior to bonding.

Assemble parts as soon as possible and certainly within 5 minutes of adhesive application



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Material cures from it's outer exposed surface inwards, therefore avoid bond widths greater than 12mm

In most cases parts may be handled after 24 hours but avoid stressing the joint until full cure has been achieved

The time for full cure to take place is dependant on both humidity and temperature. Higher levels of temperature and humidity will minimise curing times whilst low levels of humidity and temperature will retard curing. Generally, cure rate may be most conveniently controlled by means of temperature

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 MEK, petroleum spirit etc 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

Product notes

To the best 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



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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 a 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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SSL/TDS/90 ISS 1

16/5/2006