



# IQ-BOND 5212 CE

## Electrically Conductive Adhesive

**One Component, Silver filled, Electrically Conductive Adhesive, Good Conductivity at 80°C**

### Product Description:

IQ-BOND 5212 CE is a solvent-free, one-component, pre-mixed, thermoset epoxy based adhesive, which provides the unique property of combining good electrical conductivity when cured at low temperatures, with very long worklife.

Unlike most one-component, epoxy-based electrically conductive adhesives, which require elevated temperatures to develop sufficient conductivity, IQ-BOND 5212 CE provides already good conductivity, even if cured at only 80°C. This makes it a very interesting solution for making electrical interconnections for substrates which require low temperature processes, such as PET, paper, PVC, etc.

IQ-BOND 5212 CE has a long work life at room temperature, of about 1 week. Storage can be done for 2 months in normal fridge, or alternatively 12 months at -40°C. Cold storage is recommended to reduce risk for filler-particle sedimentation.

IQ-BOND 5212 CE bonds very well to metals, glass, ceramics, as well as plastics. It is used for applications where elevated soldering temperatures are not preferable, and low-temperature cure is required. Typical applications include bonding micro-electronic components onto temperature sensitive substrates, such as flexible circuits, membrane switches, etc.

IQ-BOND 5212 CE is a solvent-free, 100% solids material, and is supplied as a viscous and thixotropic paste, assuring it will not flow during application. After cure, it provides good chemical resistance.

For cleaning uncured IQ-BOND 5212 CE, the use of IQ-CLEANER 9500 is recommended, although, also other organic cleaning solvents, such as IPA and/or Aceton can be considered.

### Product Properties:

- |                             |  |
|-----------------------------|--|
| • Appearance:               | Silver, thixotropic Paste                                  |
| • Chemistry:                | Epoxy  |
| • Mixing Ratio (by wght %): | Not Applicable , pre-mixed one-component                   |
| • Viscosity (mPa.s):        | Thixotropic, flowable, paste ~ 200.000 mPa.s               |
| • Working Life:             | ~ 5 days   |
| • Density:                  | ~ 3,0 gr/cc  |
| • Fineness:                 | < 30 µm  |
| • Volume Resistivity:       | ~ 1 x 10 <sup>-3</sup> Ohm.cm (after cure 60 minutes 80°C) |
| • Thermal conductivity:     | ~ 3,5 W/m.K  |

- % Ash residue: ~ 74 +/- 1
- Cure Speed \*:
  - 60 minutes @ 80°C - Volume resistivity <  $2 \times 10^{-3}$  Ohm.cm
  - 15 minutes @ 120°C - Volume resistivity <  $1 \times 10^{-3}$  Ohm.cm
  - 5 minutes @ 150°C - Volume resistivity <  $5 \times 10^{-4}$  Ohm.cm

\*: For good mechanical strength, cure according above conditions is recommended. The final bond strength will depend on the residence time at the given cure temperature. Typically, a higher curing temperature, as well as a longer cure time will result in higher adhesion strength, lower electrical resistivity, and improved polymer crosslinking. In all curing conditions, a post-cure of 2 hours at the highest expected use temperature, can be considered.

### Instructions For Use of IQ-BOND 5212 CE :

Prior to use, it's advised to let the adhesive IQ-BOND 5212 CE equilibrate to room temperature. Depending the size of syringes, 15 – 30 minutes is typically recommended. It is advised to avoid too high humidity, as it may cause moisture accumulation in the adhesive, which can reduce the worklife of IQ-BOND 5212 CE.

To ensure long term performance of the assembled parts, a complete cleaning of the substrates is recommended to remove contaminations, such as surface oxides, dust, moisture, etc.

It is recommended to read thoroughly the information concerning health and safety in the Material Safety Datasheet, prior to usage.

### Storage stability:

Storage stability is 3 months from date of production, when stored in a fridge at temperatures < 5°C, in closed packaging. When stored at -20°C, storage life is 6 months from date of production. In case of storage at -40°C, the shelf life is 12 months. Cold storage is also recommended to avoid filler sedimentation.

### Attention:

The technical information contained herein should not be used in the preparation of specifications, as it's intended for reference only. Please contact your local sales representative for support. The data contained herein are furnished for information only and are believed to be reliable. We cannot assume responsibility for the results obtained by others over whose methods we have no control. It is the user's responsibility to determine suitability for the user's purpose of any production methods mentioned herein and to adopt such precautions as may be advisable for the protection of property and of persons against any hazards that may be involved in the handling and use thereof. In light of the foregoing, Roartis specifically disclaims all warranties expressed or implied, including warranties of merchantability or fitness for a particular purpose, arising from sale or use of Roartis products and services. Roartis specifically disclaims any liability for consequential or incidental damages of any kind, including lost profits. The discussion herein of various processes or compositions is not to be interpreted as representation that they are free from domination of patents owned by others or as a license. We recommend that each prospective user tests his proposed application before repetitive use, using this data as a guide. This product may be covered by one or more European or foreign patents or patent applications. The information contained in this data sheet corresponds to the present state of our knowledge ; it is intended for your guidance but we are not bound by it since we are not in a position to exercise control over the manner in which our products are used. Moreover, the attention of the user is drawn to the risks that could possibly occur should a product be used for an application other than that for which it is intended.