

IQ-BOND 2409

Black, Medium Viscosity, Fast Cure Underfill Adhesive

Pre-Mixed, One Component, Epoxy-based Adhesive, Long Potlife, Fridge Storage (<5°C)

Product Description:

IQ-BOND 2409 is a solvent-free, one-component, pre-mixed, thermoset epoxy based adhesive, developed for applications where fast cure is required for short cycle times.

The chemistry of IQ-BOND 2409 has been selected to resist temperatures over 200°C for short periods of time, and has been used in lead-free solder processes with peak temperatures as high as 270°C.

Unlike many other single-component adhesives, characterized by a short potlife, IQ-BOND 2409 has a very long potlife of > 1 week at room temperature.

IQ-BOND 2409 was especially designed to assure good flow in small gaps, even at moderate temperatures. To facilitate and accelerate the underfilling process, it can be considered to heat the substrate and/or the IQ-BOND 2409 to about 80°C.

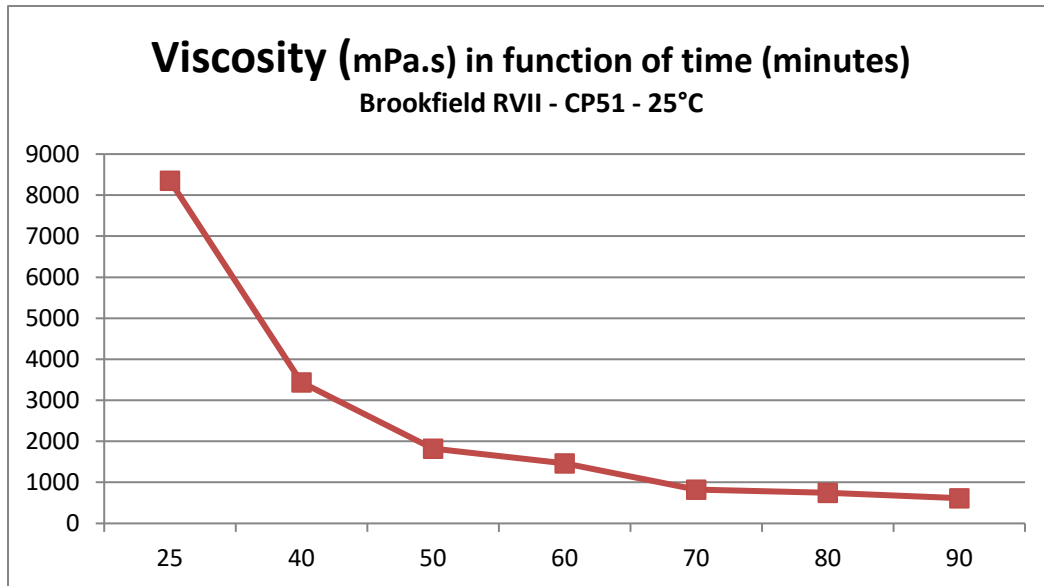
When fully cured, IQ-BOND 2409 is resistant to moisture, cleaning agents and dilute acids and bases. Also it exhibits very good high thermal resistance, for example typical SnPb-, as well as lead-free soldering processes.

IQ-BOND 2409 is a solvent-free, 100% solids material.

For cleaning un-cured IQ-BOND 2409 from stencils, screens, squeegee, or other equipment, the use of IQ-CLEANER 9500 is recommended.

Product Properties:

- Appearance: Black
- Chemistry: Epoxy
- Odor: Faint
- Mix-Ratio: Not Applicable – pre-mixed single component adhesive
- Fineness: < 10 µm
- Viscosity: 8.000 mPa.s (Brookfield RVII-CP51, 25°C at 4 rpm)



- Thixotropic Index: < 1,5 (Brookfield RVII-CP51– ratio of 0,5 rpm / 5 rpm)
- Density: +/- 1,1 gr/cc
- Shore Hardness: ~ 85 D
- Tg: ~ 110°C
- CTE₁: ~ 60 ppm
- CTE₂: ~ 200 ppm
- Density: ~ 1,15 gr/ml
- Cure Speed:
 - 30 " @ 175°C
 - 2 – 3 minutes 150°C
 - 5 minutes 120°C

For good mechanical strength, cure according above conditions is recommended, and a minimum of 100°C required. 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, and improved polymer crosslinking.

Processing parameters:

IQ-BOND 2409 is suitable for most dispensing systems.

Prior to use, it's advised to let the adhesive IQ-BOND 2409 equilibrate to room temperature.

Depending the size of packaging, 0,5 to 2 hours are typically recommended.

Conditions of about 25°C, and relative humidity not higher than 70% are recommended for optimum performance. Higher temperatures will have an effect on viscosity. Too high humidity, may cause moisture accumulation in the adhesive, which can reduce the worklife of IQ-BOND 2409.

Reworkability:

IQ-BOND 2409 is an underfill adhesive that can be reworked.

a) Removal of the CSP, BGA or other component from the PCB

Any instrument capable of melting solder is suitable for removing the CSP, BGA or other component in this step. When the instrument has reached a sufficiently high temperature (270 – 300 °C), touch the fillet of the underfill around the component, using for example a scraper, to see if the underfill is softened and can be removed. If the fillet is soft enough, remove the fillet.

When the bondline reaches temperatures above the melting point of the solder (270 – 300°C), indicated by molten solder blowing out between the CSP, BGA or other component and the printed circuit board, the component can be removed from the PCB by a simple scraper or spatula.

b) Removing the underfill residue from the PCB

After removing the component, remove all the underfill with a scraper and solder residues with a solder iron. Scraping of residue should be carefully executed to avoid that the PCB pads and resist would be damaged.

c) Clean up

Wipe the surface using a cotton swab, soaked with a suitable cleaning solvent, such as acetone, IPA, butyl-acetate or other. Repeat this step with a clean dry cotton swab, until the substrate is completely clean.

Storage stability:

Storage stability is 4 months from date of production, when stored at temperatures below 5°C, in closed containers. When stored at temperatures < -20°C, IQ-BOND 2409 has a shelflife of 12 months. At room temperature, IQ-BOND 2409 has a long worklife / potlife of > 1 week.

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.