

IQ-BOND 2476

One component, low CTE underfill adhesive

Pre-Mixed, One Component, Epoxy-based Adhesive

Product Description:

IQ-BOND 2476 is a solvent-free, one-component, pre-mixed, thermoset epoxy based adhesive, developed for underfill applications.

The rheology of IQ-BOND 2476, in combination with its high glass transition temperature and low thermal expansion, make it an ideal solution for high reliability applications in harsh environments.

IQ-BOND 2476 was especially designed to combine high filler loading to minimize the thermal expansion, combined with low viscosity and low thixotropy. These properties make IQ-BOND 2476 an ideal underfill solution for applications where the thermal expansion (CTE) of the underfill needs to be minimized. To facilitate and accelerate the underfilling process, it can be considered to heat the substrate and/or the IQ-BOND 2476 to about 80°C.

The chemistry of IQ-BOND 2476 has been selected to resist temperatures over 150°C for continuous operation .

The special selected filler type allows a high filler loading, assuring low CTE (coefficient of thermal expansion), which improves thermal cycling performance for applications in harsh environments.

IQ-BOND 2476 can also be used for bonding applications where thin bondlines are required, and will provide good adhesion to materials such as glass, ferrite, aluminum, FR4, ceramic and steel.

As IQ-BOND 2476 is a pre-mixed, one-component epoxy system, it's recommended to store IQ-BOND 2476 at temperatures < -40°C. Frozen storage will also prevent that sedimentation of the filler occurs.

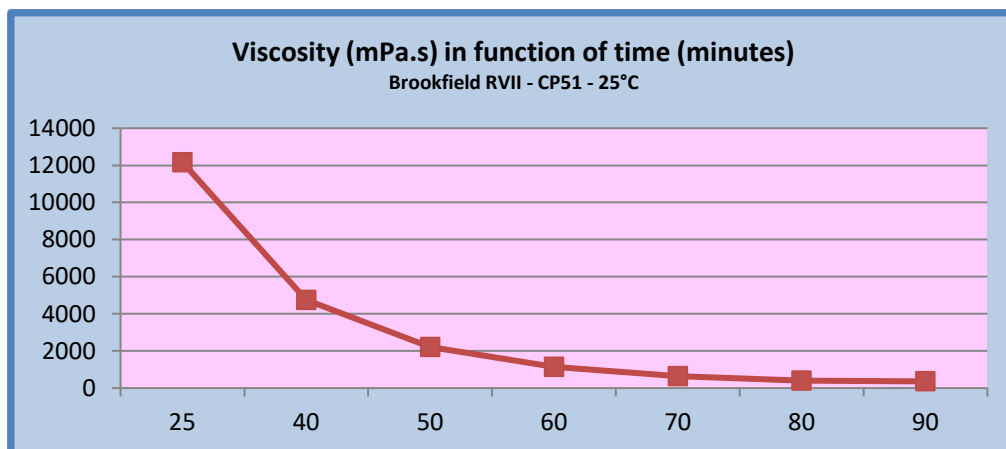
When fully cured, IQ-BOND 2476 is resistant to moisture, cleaning agents and dilute acids and bases. IQ-BOND 2476 is a solvent-free, 100% solids material.

For cleaning un-cured IQ-BOND 2476 from stencils, screens, squeegee, or other equipment, the use of IQ-CLEANER 9500 is recommended.



Product Properties:

- Appearance: White liquid (before cure) → Brown solid (after cure)
- Chemistry: Epoxy
- Odor: Faint
- Mix-Ratio: Not Applicable – pre-mixed single component adhesive
- Hegmann Fineness: < 50 µm
- Viscosity at 25°C: ~ 12.500 mPa.s (Brookfield RVII, CP51 at 2 rpm)
- Viscosity at 80°C: ~ 400 mPa.s (Brookfield RVII, CP51 at 20 rpm)



- Filler content (wgt%): ~ 62%
- T_g: ~ 125°C
- CTE₁: ~ 26 ppm
- Shore hardness: ~ 93 shore D
- Service temperature: -55°C to 150°C
- Die shear strength: > 100 kg/cm²
- Density: ~ 1,45 gr/cm³
- Cure Speed:
 - 15 minutes @ 160°C
 - 30 minutes @ 150°C
 - 120 minutes @ 120°C

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, and improved polymer crosslinking. In any case, it's recommended to consider a post-cure of about 1 hour at temperature similar or above the maximum operation temperature to have optimum properties, and elevated T_g.



Processing parameters:

Prior to use, it's advised to let the adhesive IQ-BOND 2476 equilibrate to room temperature. Depending the size of syringes, 15 – 30 minutes is typically recommended.

Storage stability:

Storage stability is 6 months from date of production, when stored at -40°C, in closed containers.

At room temperature, IQ-BOND 2476 has a worklife / potlife* of ~ 24 hours.

*: Potlife / worklife defined as doubling of initial viscosity

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.