ThreeBond Type 2217H Surface Mount Adhesive

Technical Data Sheet

Features

- Dispensing speeds in excess of 30K d.p.h. with excellent dot to dot consistency, without stringing or tailing.
- Superb printing performance at all speeds, with metal or plastic printer blades, DEK Proflow and Pump Print.
- Long stencil life.
- Same unique formula can be used for both dispensing and printing, due to its ideal viscosity and thixotropic properties.
- Low cure temperature of 80ºC can be used to eliminate possible damage to heat sensitive components.
- Optional high speed snap-cure capability at 150ºC for 60secs, if required.
- Exceptional bond strength to various types of component body materials, including problematic glass MELF types and I/Circuit types. Good heat resistance to solder wave.
- Excellent tack strength (Green Strength), ensuring no component movement or loss during population and handling before curing.
- Proven batch to batch consistency, with air free adhesive in all packaging types.
- Excellent storage stability, 5 months shelf life at room temperature (25ºC) and 7 months if refrigerated (5º to 10ºC.
- Easy cleaning of uncured adhesive using various manufacturers' proprietary solvents. Qualitek SK11 is recommended.

Typical Uncured Properties

Chemical type:	Single part epoxy resin.
Appearance:	Dark red, paste.
Viscosity at 25ºC:	196 Pa.s
Density at 25ºC:	1.25g/cm³
Thixotropic index:	2.9 @4/20 r.p.m.

Typical Cured Properties

Shore Hardness:	89D
Shear Strength Fe/Fe at 25ºC:	25.2 MPa
Glass Transition Temperature (Tg):	99ºC
Coefficient of thermal expansion:	7.7×10^{-5} $ºC^{-1}$
Water Absorption (100ºC x 1h):	+ 0.63%
Electromigration (Bellcore GR-78):	
Surface Insulation Resistance (Bellcore GR-78):	
After 4 days ohms	
After 7 days ohms	
Volume Resistivity (JIS 6911@ 25ºC):	ohm-cm

Curing Details

Curing time at: 80ºC	220 secs
100ºC	80 secs
150ºC	60 secs

Note: The times shown exclude ramp up and ramp down

Application Instructions

- Depending on the dispensing equipment, i.e. Pneumatic (Time/Pressure System), Positive Displacement (Helical Screw system) or Dispense Jet, please reset the following equipment parameters. Dispense time, dwell time, retract height, stand off height (if not fixed part of needle assembly) and reset the air pressure according to the machine manufacturer's suggested initial start-up set points. Also set adhesive heating system on dispense head to between 28 to 32 deg C.

- Now, optimise the process window by experimentation, altering one parameter at a time. This will give the best dot size and shape to eliminate any possible stringing and tailing. These settings can then be stored in the machine's memory.

- Similarly for printing, reset the equipment to the start-up setting points suggested by the machine manufacturer and then optimise the process window by experimentation, by altering only one parameter at a time, to suit the chosen production print speed. These settings can then be stored in the machine's memory.

- After printing, or at the end of the production day, clean down stencil surfaces thoroughly, especially all apertures and, if the adhesive is not contained in an enclosed print head system, carefully remove it from the stencil and store in a separate container, rather than placing it back into the original material. This adhesive can still be used next day and, if necessary, new adhesive can be added and mixed in to freshen or top up the quantity. This will ensure minimal moisture ingress and dust contamination.

- With regard to dispensing systems, if the syringes or cartridges will not be used in the following two days (approx.), remove the syringes or cartridges from the machine and refit end caps to prevent possible moisture ingress.

- After printing with DEK ProFlow and other enclosed print head systems, seal the print chamber with the sealing plate provided, and store at room temperature. Clean the stencil thoroughly with a proprietary solvent and ensure that no adhesive is left in the apertures.

Handling and Precautions

If the product contacts the skin, remove with a cloth and wash the affected area with soap and water. For specific advice consult the relevant material safety data sheet.

Storage Conditions

Keep the epoxy resin adhesive tightly closed in the original container and preferably store in a refrigerator at 5-10ºC. After removing from the fridge, allow 24 hours for the adhesive to normalise at room temperature. When in use, keep the adhesive out of direct sunlight and store in a dry, well ventilated area, at room temperature.
IMPORTANT: Do not store below 0ºC, in a freezer

Packaging

Three Bond Type 2217H adhesive is available in EFD, Fuji, Iwashita and Panasonic cartridges and syringes. Optional plunger sensor rings are available if required. For printing applications, it is supplied in 370g cartridges, 500g jars and in DEK ProFlow cassettes.