Technical Data Sheet

MASTER BOND POLYMER ADHESIVE SUPREME 11ANHT

Two Component, Room Temperature Curing, High Temperature Resistant Epoxy For Bonding & Sealing Featuring Outstanding Thermal Conductivity & Electrical Insulation Properties

Product Description

Master Bond Polymer System SUPREME 11ANHT is a two component epoxy resin system for high performance bonding and sealing formulated to cure at room temperature or more rapidly at elevated temperatures with a convenient one-to-one (1:1) mix ratio by weight or volume. Its most outstanding features include high thermal conductivity, excellent electrical insulation properties, high temperature resistance up to 350°F as well as superior bond strength. SUPREME 11ANHT is a paste that can be applied without sagging or dripping even on vertical surfaces. As a toughened system, it is well suited to applications involving thermal cycling. Its chemical resistance profile includes water, oil and many solvents. It has excellent adhesion to most metals, ceramics, glass and vulcanized rubbers as well as many plastics. SUPREME 11ANHT is also unique in that the bond strength is high in both shear and peel modes. Both part A and B are colored off-white. Master Bond SUPREME 11ANHT is widely used in the electronic, electrical, computer, metalworking, appliance, automotive and chemical industries where high bond strength and superior heat transfer properties are required.

Product Advantages

- Easy application; adhesive spreads evenly and smoothly.
- Versatile cure schedules; ambient temperature cures or faster elevated temperature cures as required.
- High bond strength to a wide variety of substrates; excellent adhesive properties.
- Exceptionally high thermal conductivity with exceptional electrical insulation properties.
- Toughened system; well suited for bonding dissimilar substrates.
- Good physical strength characteristics; especially high shear & peel strengths.
- Thick paste; non-drip type system.
- Outstanding resistance to a wide range of chemicals.
- Thermally stable up to 350°F with good thermal cycling properties.

Product Properties

Mixing ratio, weight or volume, part A to B	1/1
Viscosity of mixed compounds, cps	paste
 Working life after mixing, 75°F 	
100 gram mass, minutes	
Cure schedule	
75°F	24-48 hours
200°F	1-2 hours
 Bond strength, shear, aluminum/aluminum 	
Room temperature cure, 75°F, psi	>1000
After 30 days water immersion, 75°F, psi	>900
Glass trasition temperature, °C	70-75°C
• T-peel, aluminum/aluminum, 75°F, pli	
• Thermal conductivity, 75°F, BTU•in/ft ² •hr•°F	
• Coefficient of thermal expansion, in/in x 10 ⁻⁶ °C	
• Dielectric strength, 77°F, volts/mil (1/8" thick test specimen)	
Water absorption, 24 hour immersion, weight %	<1.0
Service temperature range, °F	100°F to +350°F
Shelf life at 75°F, in unopened containers	6 months
• Parts A and B are available in pint, quart, 1 (one) gallon and 5 (five) gallon containers.	

Preparation of Adhesive and Bonding Surfaces

Master Bond Polymer System SUPREME 11ANHT is prepared for use by thoroughly mixing part A with part B in a one-to-one mix ratio by weight or volume. Mixing should be done slowly to avoid entrapping air. Simply mix parts A and B in a one-to-one ratio and stir until color is uniform. The working life of a mixed 100 gm batch is about 30-40 minutes. It can be substantially lengthened by using shallower mixing vessels or mixing smaller size batches. All bonding surfaces should be carefully cleaned, degreased and dried to obtain maximum bond strength. When bonding to metal surfaces, chemical etching should be employed when the bonded joints are to exhibit optimal environmental durability. Nonporous surfaces should be roughened with sandpaper or emery paper for hard materials.

Adhesive Application and Assembly

Master Bond Polymer System SUPREME 11ANHT can be conveniently applied with a spatula, knife or trowel. Enough mixed adhesive should be applied to obtain a final adhesive bond line thickness of 2-4 mils. Porous surfaces may require somewhat more adhesive to fill the voids than non-porous ones. Thicker glue lines do not increase the strength of a joint but do not necessarily give lower results as the SUPREME 11ANHT system does not contain any volatiles. The parts to be bonded should then be pressed together with just enough pressure to maintain intimate contact during cure. Since Master Bond SUPREME 11ANHT is 100% reactive and does not contain any solvents or diluents, shrinkage on cure is minimal.

Cure

Master Bond Polymer System SUPREME 11ANHT can be cured at room temperature or at elevated temperatures as desired. At room temperature, Master Bond Polymer System SUPREME 11ANHT cures at room temperature in 24-48 hours. Faster cures can be realized at elevated temperatures, e.g., 1-2 hours at 200°F. Remove any excess adhesive promptly before it hardens with a spatula. Then wipe with a rag and solvent such as MEK, toluene or acetone. The thinner the section of epoxy, the slower the rate of cure.

Handling and Storage

All epoxy resins should be used with good ventilation, minimizing skin contact. SUPREME 11ANHT employs a low toxicity hardener. To remove resin or hardener from skin, use solvent, then wash with mild soap and water. If material enters the eyes, flood with water and consult a physician. Optimum storage is at or below 75°F in closed containers. No special storage conditions are necessary. Containers should however, be kept closed when not in use to avoid contamination. Cleanup of spills and equipment is readily achieved with aromatic or ketone solvents employing proper precautions of ventilation and flammability.

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