

BD422 Structural Methacrylate Adhesive

1. DESCRIPTION

BD422 is a two-part methacrylate, structural bonding adhesive designed for the structural bonding of various substrates, including fiberglass, steel, aluminum, and various plastics like ABS, Acrylics, PBT, PVC, PC etc. Combined at a ratio of 10:1, BD422 has a working time of 17 to 24 minutes and achieves nearly 90 percent of its ultimate strength in 30 to 45 minutes at room temperature curing. BD422 provides high strength bonds to the above reference surfaces with generally no preparation effort. Widely used in transportation and marine industries for composite bonding applications.

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2. CHARACTERISTICS:

Room Temperature Cure

- Working Time 17 to 24 minutes (at 75°F/ 24°C)
- Fixture Time 35 to 45 minutes (at 75°F/ 24°C)
- Can be Moved In 60 minutes
- Application Temp. 65°F to 85°F (18°C to 30°C)
- Operating Temp. -40°F to + 250°F (-40°C to 121°C)
- Gap Filling .003 to 0.37 inches
- Hardness 70
- Mixed Density 8.1 lbs/gal (.96 g/cc)
- Flash Point 51°F (11°C) – See SDS for more safety information
- Temperature Resistance: Withstands backing cycles -40C to +150C

Properties

3. CHEMICAL RESISTANCE:

Excellent Resistance to:

- Hydrocarbons
- Acids and Bases
- Vinegar

Susceptible to:

Polar Solvents
Super Strong Acids and Bases

4. PHYSICAL PROPERTIES:

Uncured:

- Viscosity(cps) 120,000 – 160,000
- Color Off White
- Density (lbs/gal) 8.2
- Mix Ratio (wt or vol) 10
- Mixer Recommendation Cartridge (250/490ml): MFQX 08-24T – Square 24 element Orange/Green Mix Tips (10:1)

Resin

Activator

5. MECHANICAL PROPERTIES:

Lap Shear Strength (ASTM D1002)

- Strength, psi
- Strength, psi

Substrate

Fiberglass Surfaces
ABS/PVC Sheeting

Results

1800+
1,200+

Failure Type

Fiber Tear
Substrate

• Strength, psi	Steel/Stainless Steel	2800+	Cohesive
• Strength, psi	Aluminum	2800+	Cohesive

Tensile Strength (ASTM D638), psi: 2800- 3200

Elongation at Break, % 70

Tensile Modulus, Kpsi 70 -100

6. HANDLING AND APPLICATION:

BD422 resin (Part A) and activator (Part B) are flammable. Contents include Methacrylate ester and acids. Keep containers closed after use. Wear gloves and safety glasses to avoid skin and eye contact. Wash with soap and water after skin contact. In case of eye contact, flush with water for 15 minutes and get medical attention. Harmful if swallowed. Keep out of the reach of children. Keep away from heat, sparks, and open flames. Do not smoke cigarettes or anything else while handling or near the product. Refer to the BD422 Safety Data Sheet for more complete safety instruction. To assure maximum bond strength, surfaces must be mated together within the specified working time, and all clamps affixed within that time. Use sufficient material to ensure that the joint is completely filled when parts are mated and clamped. Avoid over clamping parts, which may cause a dry joint or a joint starved of adhesive. All adhesive application, part positioning, fixturing, and clamping should occur before the working time of the adhesive has expired. After the indicated working time, parts must remain undisturbed until the fixture time is completed. Components bonded, adhesive, and shop temperature can have a significant effect on the work and fixture time of the adhesive.

Application of BD422 adhesive at temperatures between 65°F and 85°F (18°C and 30°C) will ensure proper cure. Temperatures below 65°F (18°C) will slow cure and fixture speed. BD422 adhesives will still react, but will take longer. Temperatures above 85°F (18°C and 30°C) will increase cure and fixture speeds, and there's a risk that the adhesive will be hardened or too thick to bond materials. The viscosities of BD422 adhesives are affected by temperature.

NOTE: Because of the curing features of BD422 adhesives, large amounts of heat are generated when large masses of material are mixed at one time. The heat generated by the exotherm resulting from mixing large amounts of adhesive can result in a boiling of the monomer in the adhesive (methyl methacrylate), resulting in the release of trapped air, steam and volatile gasses. To prevent this, use only enough material as needed for use within the working time for the product, and confine the gap or spread out the material to no more than .50 inches.

7. HANDLING AND STORAGE

The shelf life of BD422 is twelve (12) months from the date of manufacture based upon continuous storage at room temperature (77°F or 25°C). Storage of BD422 adhesives in refrigerated compartments will extend the shelf life even more. Do not store BD422 adhesive or any other adhesives in a refrigerator which has food or lunch products in them. Be sure to bring BD422 adhesives to room temperature for 24 hours before use, otherwise longer cure and fixture times may be expected. Long-term storage at temperatures above room temperature will shorten the shelf life of BD422 adhesives considerably. Storage at temperatures above 100°F or 38°C could shorten the shelf life to less than one month. BD422 adhesives contain no water, so freezing of the adhesive for short periods is permissible, but is not encouraged.

8. ADDITIONAL INFORMATION

NOTE: Information contained herein is based on tests we believe to be reliable and accurate. It is offered in good faith for the benefit of the consumer. The Company shall not be liable for any injury, loss, or damage in the use or handling of its chemical products since conditions and use are beyond our control. In every case, we urge and recommend the user conduct tests to determine to their own satisfaction that the product is of acceptable quality and suitability for their particular purpose under their own operating conditions. Statements concerning possible use of our products are not intended as recommendations to use our products in the infringement of any patent, or for any particular purpose or application. These products are intended for industrial use only.