

TotalBoat ThickSet Clear Casting Epoxy Resin - Tech Data Sheet

TotalBoat ThickSet is an easy-to-use, pourable 2-part crystal clear epoxy resin system that produces brilliant 3D effects for thick casting, molding, and encapsulating applications. Its low viscosity, reduced exotherm, and extremely long working time minimize trapped bubbles and reduce heat, allowing you to pour single resin layers up to 1" thick (2" when casting in small molds). TotalBoat ThickSet can be tinted with epoxy coloring agents, and cured epoxy is non-yellowing. This versatile low-odor, low-VOC epoxy is ideal for a variety of creative projects, including sculptures, wall art, tabletops with embedded objects, figurines, stage props, and much more. Be creative, experiment, and have fun! Not designed for continuous UV exposure. Do not place items hotter than 125°F on cured surfaces.

SUPPORT PRODUCTS:

Thinning: Do not thin TotalBoat ThickSet.

Cleanup: Scrape up and remove any uncured material, as needed. Denatured alcohol, lacquer thinner, or acetone may be used to clean up uncured epoxy. Cured epoxy must be removed mechanically.

Colorants and Dyes: Epoxy dyes, colorants, or special effects additives can be added and mixed in. Only use products designed for epoxy. **IMPORTANT:** Always perform a small test prior to using a colorant or dye on a larger project.

SURFACE PREPARATION:

- When applying to wood or porous surfaces, always make sure to apply a very thin skim coat of epoxy to seal the surface, and allow it to cure before applying more epoxy. This skim coat will prevent air bubbles from coming out of the wood and getting suspended in the epoxy.
- Clean any molds or dammed areas thoroughly to remove any dust, oil, tree sap, or other contaminants that can affect the final product. Clean the surface with a clean, lint-free cotton rag dampened with denatured alcohol.
- Thoroughly check dams or molds for possible leaks, and use silicone caulk in corners to prevent leakage, as TotalBoat ThickSet has a very low viscosity.
- Use sheathing tape, Tyvek tape, or release agent on the inside of the mold to prevent the epoxy from adhering to the dam/mold. When making larger pours, ensure that the structure that the epoxy is poured into is well supported to prevent sagging from the weight of the epoxy, and ensure that the surface is level.
- If surface is not sealed prior to pouring, moisture will produce foam and bubbles, producing poor results. DO NOT pour TotalBoat ThickSet on unsealed wood or porous surfaces.

MIXING:

- 1 Do not mix more than one gallon of material at a time.
- 2 Into a clean, dry, plastic mixing pot, measure 3 parts RESIN - PART A with 1 part HARDENER - PART B by volume (3A:1B), or 100 parts RESIN - PART A to 28 parts HARDENER - PART B by weight. Do not adjust the mix ratios because doing so will negatively affect the cure and final results.
- 3 Thoroughly mix both components in one mixing pot for 2-3 minutes, scraping the bottom and the sides to ensure proper mixing, then pour into a second mixing pot and mix thoroughly for another 2-3 minutes.
- 4 Epoxy dyes, colorants, or special effects additives can be added and mixed in, as desired, before pouring.

APPLICATION:

IMPORTANT! Environmental conditions are extremely important to the quality of the cure, and to achieving the best clarity and surface finish. Depending on the overall mass of epoxy being poured at a single time, the depth that it is poured, and the ambient temperature, excessive heat may build up from the reaction, causing potential yellowing, cracks, or other shrinkage. Helping to dissipate the heat may help promote the best results.

- For the epoxy to cure fully, the ambient temperature must be between 65°F and 80°F.
- When pouring for larger projects, such as slabs or tables, do not exceed a pour depth of ½" to 1" to prevent yellowing or excessive heat from the cure.

STEP POURING: Step pouring with multiple layers will achieve the best results. When the previous layer has cooled but is soft enough to indent with a fingernail, pour the next layer directly on top. If the epoxy has cured beyond that, lightly scuff the surface with a Scotch-Brite™ pad, remove any sanding residue, and apply the next layer.

CASTING: When casting TotalBoat ThickSet in a smaller mold, the epoxy can be poured in layers 1"-2" deep, using the same method.

CURE TIMES: Tack free time (1/2" - 1" pours @ 77°F): 4-8 hours. Sandable in 12-24 hours @ 77°F. Full cure takes 5-7 days @ 77°F.

EXOTHERMIC REACTION! EXOTHERMIC REACTION! Mixing the epoxy resin and hardener components together will create an exothermic reaction that generates heat. The more epoxy that is mixed, the hotter the mixture will get.

STORAGE:

Store at 60-90°F, in a dry place. Ensure that containers are thoroughly sealed directly after use. Store products on a raised surface off the floor during cold weather, and avoid storing near outside walls or doors. Epoxy resins that are contaminated with dust or moisture, or are subjected to low temperatures, may crystallize. Do not use material that has any sign of crystallization, until it has been liquefied. A CRYSTALLIZED RESIN OR HARDENER CAN BE EASILY RETURNED TO ITS ORIGINAL STATE BY HEATING THE MATERIAL TO 140°F-150°F AND STIRRING UNTIL IT RETURNS TO THE LIQUID STATE.

SAFETY AND HANDLING:

Work in well-ventilated areas. Wear gloves, eye protection, and clothing protection. Avoid contact to the skin and eyes. Avoid clothing contamination. Wash hands thoroughly after handling. These products may cause skin and respiratory allergic reactions. Consult Safety Data Sheets (SDS) for complete health and safety information.

APPLICATION DATA:

Application Temperature: 65°F to 80°F
Mix Ratio by Volume: 3A:1B
Mix Ratio by Weight: 100A:28B
Resin Density @ 77°F: 9.3 lbs/gal
Hardener Density @ 77°F: 7.9 lbs/gal
Resin Viscosity @ 77°F: 1000 cP
Hardener Viscosity @ 77°F: 10 cP
Mixed Viscosity @ 77°F: 260 cP
Working Time @ 77°F: 10-30 minutes***
Gel Time @ 77°F (150g mass): 5.5 hours

***Dependent on mixing mass, material temperature, ambient temperature, mixing time, speed of mixing, speed of application, & casting and coating thickness.

PHYSICAL DATA:

Color: Clear
Izod Impact: .84 ft-lb/in
Tensile Strength: 8,100 psi
Tensile Elongation: 4.3%
HDT (Room Temperature Cure): 118°F
HDT (Post Cure): 122°F
Compressive Strength: 11,260 psi
Flexural Strength: 13,480 psi
Flexural Modulus: 438,423 psi
Cured Density: 1.15g/cm³ (.04 lbs/in³)
Volumetric Yield: 25.0 in³/lb, or 1.5 sq ft (at 1" thickness) per gallon of mixed product
Volumetric Shrinkage: 3.85%
Hardness, Shore D: 82

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