



TC-1650 A/B

HI-TEMP ALUMINUM FILLED CASTING RESIN SYSTEM

PRODUCT DESCRIPTION:

TC-1650 A/B is an aluminum powder filled epoxy casting resin system that provides service temperatures to 350°F (177°C). TC-1650 A/B is most commonly used for the construction of molds that require good heat conductivity, outstanding durability and provide production run capability. The majority of applications for TC-1650 A/B are used in conjunction with other materials in developing composite mold structures, however, the TC-1650 A/B is frequently used by itself.

PRODUCT HIGHLIGHTS:

- Improved viscosity for easier pouring
- Does not contain VCHD or MDA

PRODUCT APPLICATIONS:

- ◆ Molds for casting polyurethane, epoxy, polyester and other materials
- ◆ Vacuum form molds
- ◆ Wax casting molds
- ◆ Compression molds

MOLD CONSTRUCTION:

The composites approach to mold construction uses TC-1650 A/B as a binder for SC-125 Aluminum Granules. This mixture is cast behind a high temperature surface coat, TC-1610 A/B or TC-1618 A/B. This combination provides several benefits. The high temperature surface coat provides exceptional durability while the aluminum granule addition to the TC-1650 A/B vastly increases heat conductivity and reduces shrinkage. Using this method will decrease cost also. Generally, the SC-125 Aluminum Granule is added at the rate of 60-80 parts by weight to 100 parts by weight mixed resin and hardener. Larger amounts of aluminum granules are added when making vacuum form molds, casting molds, foam molds and other low pressure compression type molds.

CAUTION: If casting TC-1650 A/B requires sections to be thicker than 1", use TC-1651 A/B for thicknesses up to 3". Request BJB technical advice for additional assistance.

PHYSICAL PROPERTIES:

Hardness, Shore D ASTM D-2240.....	90
Density, (g/cc) ASTM D-792.....	1.76
Cubic Inches Per Pound	17
Tensile Strength, (psi) ASTM D-638.....	8,150
Flexural Strength, (psi) ASTM D-790.....	11,100
Flexural Modulus, (psi) ASTM D-790	1.06 x 10 ⁶
Shrinkage, (in./in.) linear ASTM D-2566.....	0.002
Heat Deflection Temperature, (@ 264 psi) ASTM D-648.....	283°F (139°C)
Coefficient of Thermal Expansion, (in./in./°F) ASTM D-3386.....	1.9 x 10 ⁻⁵
Compressive Strength, (psi) ASTM D-695	27,800

HANDLING PROPERTIES:

Mix Ratio (by weight):

Part A	100 parts by weight
Part B	7 parts by weight
Mixed Viscosity, (cps) @ 77°F (25°C) ASTM D-2393.....	15,500
Work Time @ 77°F (25°C) (1 lb. mass).....	60 minutes
Gel Time	90 minutes
Demold Time @ 75° - 80°F (24° - 27°C).....	16 - 24 hours

POST-CURE:

All physical property results are based upon post-curing this system. The following procedure provides the best results. Allow the casting to cure at ambient temperature for 8-12 hours. Then cure as follows:

- 75°F (24°C) for 12 to 20 Hours
- 150°F (66°C) for 1.5 to 2 Hours
- 250°F (121°C) for 2 Hours
- 350°F (177°C) for 1 Hour

Turn off oven and allow to cool in the oven. This procedure provides further stabilization and eliminates possible thermal shocks for cavity tools that are temporarily clamped together for curing purposes.

PACKAGING:

Gallon Kit	10 lbs. A, 12 oz. B
5-Gallon Kit.....	50 lbs. A, 3.5 lbs. B

STORAGE:

Store at 55° - 90°F (13° - 32°C) in a dry location. Unopened containers will have a shelf life of 12 months from date of shipment when properly stored at room temperature. Keep containers tightly sealed after use.

SAFETY PRECAUTIONS:

Use in a well-ventilated area. Avoid contact with skin using protective gloves and protective clothing. Repeated or prolonged contact on the skin may cause an allergic reaction.

Eye protection is extremely important. Always use approved safety glasses or goggles when handling this product.

IF CONTACT OCCURS:

Skin: Immediately wash with soap and water. Remove contaminated clothing and launder before reuse. It is *not* recommended to remove resin from the skin with solvents. Solvents only increase contact and dry skin. Seek qualified medical attention if allergic reactions occur.

Eyes: Immediately flush with water for at least 15 minutes. Call a physician.

Ingestion: If swallowed, call a physician immediately. Remove stomach contents by gastric suction or induce vomiting only as directed by medical personnel. Never give anything by mouth to an unconscious person.

Refer to the Material Safety Data Sheet before using this product.

NON-WARRANTY "Except for a warranty that materials substantially comply with the data presented in Manufacturer's latest bulletin describing the product (the basis for this substantial compliance is to be determined by the standard quality control tests generally performed by Manufacturer), all materials are sold "AS IS" and without any warranty express or implied as to merchantability, fitness for a particular purpose, patent, trademark or copyright infringement, or as to any other matter. In no event shall Manufacturer's liability for damages exceed Manufacturer's sale price of the particular quantity with respect to which damages are claimed."