

**TC-857 A/B  
RIGID 84 SHORE D  
POLYURETHANE CASTING SYSTEM**

TC-857 A/B is a rigid 84 Shore D polyurethane system that exhibits exceptional physical properties. It is a high performance material that features high heat deflection capability and low shrinkage. TC-857 is a clear casting material that allows for unrestricted tinting and precise color matching. This product is ideal for producing intrinsically colored parts requiring a non-painted finish. This system can be easily processed by hand or with meter-mix-dispense, pressure or vacuum cast equipment.

- Exhibits high heat distortion temperature
- Odorless, clear; easy to tint or color
- Exceptional clarity
- Excellent impact resistance
- Excellent for hand, vacuum or pressure casting

PHYSICAL PROPERTIES	TEST METHOD	TEST RESULTS
Hardness, Shore D	ASTM D2240	84 ± 2
Density (g/cc)	ASTM D792	1.12
Cubic Inches per Pound	N/A	25.9
Color/Appearance	Visual	Pale Yellow/Clear
Tensile Strength (psi)	ASTM D638	9,100
Tensile Modulus (psi)	ASTM D638	2.9 x 10 <sup>5</sup>
Elongation (%)	ASTM D638	11
Flexural Strength (psi)	ASTM D790	12,200
Flexural Modulus (psi)	ASTM D790	3 x 10 <sup>5</sup>
Shrinkage (in/in) linear	12" x 1/2" x 1/2"	0.004
Izod Impact, notched (ft-lb/in)	ASTM D256	0.93
Heat Deflection Temperature @ 66 psi	ASTM D648	215 ± 5°F (102 ± 3°C)
Heat Deflection Temperature @ 264 psi	ASTM D648	210 ± 5°F (99 ± 3°C)

**Note:** Reported physical properties based on elevated temperature cured test specimens.

HANDLING PROPERTIES	Part A	Part B
Mix Ratio by weight	100	55
Mix Ratio by volume	100	56
Specific Gravity @ 77°F (25°C)	1.08	1.06
Color	Colorless	Pale Yellow
Viscosity (cps) @ 77°F (25°C) Brookfield	600	2,800 @ 77°F (25°C) 750 @ 90°F (32°C)
Mixed Viscosity (cps) @ 77°F (25°C) Brookfield	1,200	
Work Time, 100g mass @ 77°F (25°C)	5 – 7 minutes	
Gel Time	5.5 – 7.5 minutes	
Demold Time @ 77°F (25°C)	3 – 4 hours	

Properties above are typical and not for specifications.

**CURE SCHEDULE/HEAT CURING:**

Most of the physical properties can be achieved in 5-7 days at 77°F (25°C). You may use your own post-cure schedule but the physical properties may vary from BJB’s cure schedule of 1-3 hours at 77°F (25°C) followed by 16 hours at 180 °F (82°C). Do not exceed curing temperatures of 200°F (93°C). Support of the part may be required to prevent part deformation during the heat curing process.

**PROCESSING NOTES:**

For best results, precondition both “A” component 77°F (25°C) and the “B” component to 90°F (32°C) prior to mixing. Preconditioning of the “B” will lower the viscosity with slight work time lost. Warming the mold to 90 -100°F (32-38°C) will help with faster demold times. TC-857 “A” and “B” component may require vacuum de-airing prior to combining. Evacuation of the mixed components is mandatory in order to achieve best results. If further information is required, please contact BJB’s technical staff for assistance.

**STORAGE:**

Store at ambient temperatures, 65-80°F (18-27°C). Unopened containers will have a shelf life of 6 months from date of shipment when properly stored at recommended temperatures. Purge opened containers with dry nitrogen before re-sealing.

PACKAGING	Part A	Part B	Cubic Inches per Kit
Quart Kits	2 lbs.	1.1 lbs.	80
Gallon Kits	8 lbs.	4.4 lbs.	321
5-Gallon Kits	40 lbs.	22 lbs.	1,606

**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 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.**

**⚠WARNING:** This product can expose you to chemicals including Phenyl mercury acetate (Mercury compounds) and Naphthalene, which are known to the State of California to cause cancer and birth defects or other reproductive harm. For more information, go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).



Handling Guide

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."