

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 ⁵ |
| Elongation (%) | ASTM D638 | 11 |
| Flexural Strength (psi) | ASTM D790 | 12,200 |
| Flexural Modulus (psi) | ASTM D790 | 3 x 10 ⁵ |
| 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 |
|---------------------|----------|----------|----------------------|
| Gallon Kits | 8 lbs. | 4.4 lbs. | 321 |
| 5-Gallon Kits | 40 lbs. | 22 lbs. | 1,606 |
| 55-Gallon Drum Kits | 400 lbs. | 220 lbs. | 16,058 |

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 mercuric neodecanoate (Mercury compounds), 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.



Handling Guide



TC-857 Part A SDS



TC-857 Part B SDS