# TC-857 A/B

## RIGID 84 SHORE D POLYURETHANE CASTING SYSTEM

**PRODUCT DESCRIPTION**:

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, virtually colorless 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.

**PRODUCT HIGHLIGHTS**:

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

**PHYSICAL PROPERTIES**:

| | |
|---|---|
| Hardness, Shore D ASTM D-2240 | 84 ± 2 |
| Specific Gravity, (g/cc) cured ASTM D-792 | 1.12 |
| Cubic Inches Per Pound | 25.9 |
| Color/Appearance | Clear/Slight Color |
| Tensile Strength, (psi) ASTM D-638 | 9,100 |
| Tensile Modulus, (psi) ASTM D-638 | $2.9 \times 10^5$ |
| Elongation, (%) ASTM D-638 | 11 |
| Flexural Strength, (psi) ASTM D-790 | 12,200 |
| Flexural Modulus, (psi) ASTM D-790 | $3 \times 10^5$ |
| Shrinkage, (in./in.) linear (12" x ½" x ½") | 0.004 |
| Izod Impact, (ft.-lb./in.) ASTM D-256 | 0.93 |
| Heat Deflection Temperature ASTM D-648: | |
| @ 66 psi | 215° ± 5°F (102°± 3°C) |
| @ 264 psi | 210° ± 5°F (99°± 3°C) |

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

**HANDLING PROPERTIES**:

| | |
|---|---|
| Mix Ratio (by weight): | |
| Part A | 100 parts by weight |
| Part B | 55 parts by weight |
| Mix Ratio (by volume): | |
| Part A | 100 parts by volume |
| Part B | 56 parts by volume |
| Specific Gravity, (g/cc): | |
| Part A | 1.08 |
| Part B | 1.06 |

**HANDLING PROPERTIES (continued)**:


For more information call BJB Enterprises, Inc. (714) 734-8450 Fax (714) 734-8929

Viscosity, (cps) Brookfield:

| | |
|---|---|
| Part A @ 77°F (25°C) | 600 |
| Part B @ 77°F (25°C) / 90°F (32°C) | 2,800/750 |
| Mixed | 1,200 |
| Color: | |
| Part A | Clear/Colorless |
| Part B | Clear/Colorless |
| Work Time, 100-gram mass @ 77°F (25°C) | 5 minutes |
| Gel Time | 5.5 minutes |
| Demold Time @ 77°F (25°C) | 3-4 hours |
| Cure Schedule | For maximum physical properties the material should be post cured (see "HEAT CURING"). |

**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.

**HEAT CURING**:

Enhanced physical properties can be achieved by post-curing TC-857 A/B parts for a period of 2 - 4 hours at a minimum of 150°F (66°C) and to a maximum of 180°F (82°C). Eight hours at 180°F (82°C) will provide a final heat distortion temperature @ 66 psi of 215°F (102°C). Parts generally should be supported during post-cures.

**STORAGE**:

Store at ambient temperature in a dry place. Unopened containers will have a shelf life of 6 months from date of shipment when properly stored at room temperatures. **Purge opened containers with dry nitrogen before re-sealing.**

**PACKAGING**:

| | |
|---|---|
| Gallon Kits | 8 lbs. A, 4.4 lbs. B |
| 5 Gallon Kits | 40 lbs. A, 22 lbs. B |
| 55-Gallon Drum Kits | 400 lbs. A, 220 lbs. B |

**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.**


For more information call BJB Enterprises, Inc. (714) 734-8450 Fax (714) 734-8929