



TC-680 A/B

80 SHORE A POLYURETHANE ELASTOMER

TC-680 A/B is a two-component polyurethane elastomer compound specifically designed for casting applications. This product is a safe, easy-to-handle, room temperature mixing and curing system that contains no TDI, MDA, or MOCA. The low shrinkage, superior toughness, and excellent detail reproduction of TC-680 A/B makes this system ideal for general purpose castings and quality tooling operations.

PHYSICAL PROPERTIES	TEST METHOD	TEST RESULTS
Hardness, Shore A	ASTM D2240	80 ± 5
Density (g/cc)	ASTM D792	1.04
Cubic Inches per Pound	N/A	25.9
Color/Appearance	Visual	Pale Green/Clear
Tensile Strength (psi)	ASTM D412	1,475
Tensile Modulus (psi)	ASTM D412	4,380
Elongation (%)	ASTM D412	715
Tear Strength (pli)	ASTM D624	225
Shrinkage (in/in) linear	12"x ½" x ½"	0.006
Water Immersion (%) 24-hour weight gain	N/A	3.7
Insulation Resistance (ohms)	ASTM D257	3 x 10 ¹²
Surface Resistivity (ohm-cm)	ASTM D257	5 x 10 ¹⁵
Dielectric Constant, 10 ³ Hz	ASTM D150	3.9
Dissipation Factor, 10 ³ Hz	ASTM D150	0.01

HANDLING PROPERTIES	Part A	Part B
Mix Ratio by weight	100	50
Mix Ratio by volume	100	49
Specific Gravity @ 77°F (25°C)	1.06	1.09
Color	Colorless	Amber
Viscosity (cps) @ 77°F (25°C) Brookfield	6,000	60
Mixed Viscosity (cps) @ 77°F (25°C) Brookfield	2,100	
Work Time, 100g mass @ 77°F (25°C)	20 minutes	
Gel Time	25 minutes	
Demold Time @ 77°F (25°C)	4 – 6 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 160 °F (71). Do not exceed curing temperatures of 200°F (93°C).

NOTE:

The cure may be inhibited if cast against a tin catalyzed silicone RTV.

STORAGE AND HANDLING:

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 lbs.	311
5-Gallon Kits	40 lbs.	20 lbs.	1,554

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.

NOTE:

Refer to the Safety Data Sheet before using this product. For processing tips and guides, please visit: learn.bjbmaterals.com to discover additional information.

⚠WARNING: This product can expose you to chemicals including Butyl benzyl phthalate and Phenyl mercury neodecanoate, 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.