

TC-870 FR A/B
RIGID 70 SHORE D POLYURETHANE CASTING SYSTEM
FIRE RETARDANT



TC-870 FR A/B is a RoHS compliant, fire retardant, polyurethane system that produces a tough 70 shore D material. This system has high impact strength and a remarkable heat deflection temperature for a 70 Shore D fire retardant material. The TC-870 FR A/B may in some applications be post cured without having to use fixtures.

- UL 94V-0 Listed, flammability rating at 0.125" thickness (File# E174527)
- RoHS/REACH compliant
- 9-10 minute work time
- High heat resistance
- High impact

PHYSICAL PROPERTIES	TEST METHOD	RESULTS
Hardness, Shore D	ASTM D2240-04e1	70 ± 2
Density (g/cc)	ASTM D792-00	1.25
Cubic Inches per Pound	N/A	23.1
Color/Appearance	Visual	Clear Pale Amber
Tensile Strength (psi)	ASTM D638-03	3,415
Tensile Modulus (psi)	ASTM D638-03	7.34 x 10 ⁴
Elongation (%)	ASTM D638-03	20.4
Flexural Strength (psi)	ASTM D790-03	3,685
Flexural Modulus (psi)	ASTM D790-03	9.34 x 10 ⁴
Shrinkage (in/in) linear	12"x1/2"x1/2"	0.0082
Izod Impact, notched (ft-lb/in)	ASTM D256-05	2.1
Heat Deflection Temperature @ 66 psi	ASTM D648-04	195°F (90.6°C)
Dielectric Constant, 1 MHz	ASTM D150-87	4.617
Dissipation Factor, 1 MHz	ASTM D150-87	0.046

Note: Reported physical properties are based on test specimens cured at an elevated temperature, 180°F (82°C).

HANDLING PROPERTIES	Part A	Part B
Mix Ratio by weight	100	52
Mix Ratio by volume	100	50
Specific Gravity @ 77°F (25°C)	1.18	1.24
Color	Pale Amber	Amber
Viscosity (cps) @ 77°F (25°C) Brookfield	1,800	200
Mixed Viscosity (cps) @ 77°F (25°C) Brookfield	1,000	
Work Time, 100g mass @ 77°F (25°C)	9 – 10 minutes	
Gel Time	12 – 13 minutes	
Demold Time @ 77°F (25°C)	3 – 4 hours	
Demold Time @ 150°F (65.6°C)	60 minutes	

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.

NOTE #1:

Important: Shake or re-blend both ‘A’ and ‘B’ components separately prior to weighing and combining. It is advisable whenever possible to evacuate entrapped air prior to casting this system. The use of a de-airing agent can speed up the process. BJB's AF-4 antifoam works best as the de-airing agent. In conjunction with these support products BJB offers pigments in a wide variety of colors and stainless steel mixers called "Jiffy Mixers." If help is required call BJB for assistance. For additional information on the use of this product, refer to BJB Guidelines for Handling Polyurethane Products.

NOTE #2:

The natural color of TC-870 FR A/B is clear pale amber. When the cured material is exposed to direct sunlight or strong UV light, the material will turn to an amber/orange color within approximately 2 hours.

ACCESSORIES:

BJB offers silicone RTV mold making materials along with a wide range of accessory items. These include de-airing agents, pigments, mold releases, and Jiffy® Mixers. Visit BJB’s website at www.bjbenterprises.com or consult a BJB representative for more information.

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.	1.04 lbs.	70
Gallon Kits	8 lbs.	4.2 lbs.	282
5-Gallon Kits	40 lbs.	20.8 lbs.	1,405
55-Gallon Drum Kits	400 lbs.	208 lbs.	14,045

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.

⚠WARNING: This product can expose you to chemicals including Toluene diisocyanate and Naphthalene, which are known to the State of California to cause cancer. For more information, go to www.P65Warnings.ca.gov.

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



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."