



# SP-200 A/B

## 78 SHORE D SPRAY APPLIED POLYURETHANE

### PRODUCT DESCRIPTION:

SP-200 A/B is a two component rigid polyurethane material designed to provide high strength, high impact, and good heat resistance for the fabrication of structural parts, composite type structures, and for coatings that serve many purposes.

During the spray application, coating thickness builds quickly due to the 97% solids composition of the system. Spray tests demonstrate that the SP-200 A/B will not foam or blister during or after application. SP-200 A/B bonds readily to itself during build-up and it shows excellent bonding results sprayed against other plastics, wood, and metals.

The SP-200 A/B has an extremely low V.O.C. content. The volatile organic compounds (V.O.C.) contained in the mixed A and B components total less than 40 grams per liter. This translates into a great advantage for compliance with health, safety, and environmental programs.

The SP-200 A/B has a set time (dry to the touch) of approximately 2 minutes. It demolds quickly, often within 10 to 15 minutes after spray-up is completed. Spraying SP-200 A/B requires two-component airless spray equipment that develops a high-pressure impingement mix/spray to obtain the best processing results. BJB offers the CPE-600 Spray System specifically set-up to spray this product. Call BJB's technical representatives to provide processing information.

### PRODUCT HIGHLIGHTS:

- ◆ Provides very rapid production of parts, composite structures, and molds.
- ◆ Provides excellent surface finishes built on polyurethane rigid foam and styrofoam.
- ◆ Superior adhesion to a wide variety of substrates, most notably rigid foams and wood.
- ◆ Excellent impact resistance coupled with high flexural strength.
- ◆ Provides very fine detail reproduction.
- ◆ Easy to sand and machine.
- ◆ 100% reaction, reducing potential for warpage or shrinkage.
- ◆ Convenient 1:1 by volume mix ratio.
- ◆ Non-mercury based catalyst system.

### PHYSICAL PROPERTIES:

Hardness, Shore D, ASTM D-2240.....	78 ± 2
Specific Gravity (g/cc) cured ASTM D-792 .....	1.06
Color/Appearance.....	Light Gray
Tensile Strength, (psi) ASTM D-638 .....	5075
Elongation (%) ASTM D-638.....	16.5
Flexural Strength (psi) ASTM D-790.....	9,100
Flexural Modulus (psi) ASTM D-790.....	2.5 x 10 <sup>5</sup>
Heat Deflection Temperature:	
@ (66 psi) ASTM D-648.....	192° F (89° C)
@ (264 psi) ASTM D-648.....	180° F (82° C)
Izod Impact, (ft. lb./in.) ASTM D-256.....	0.91

(Note: Physical properties obtained from test specimens post cured per recommended procedure.)

### HANDLING PROPERTIES:

Mix Ratio (by weight):

Part A .....	100 parts by weight
Part B .....	90 parts by weight

Mix Ratio (by volume):

Part A .....	100 parts by volume
Part B .....	100 parts by volume

**HANDLING PROPERTIES (continued):**

Specific Gravity (g/cc):

Part A .....	1.19
Part B .....	1.04

Viscosity, (cps) Brookfield:

Part A @ 77° F (25° C).....	550
Part B @ 77° F / 110° F (25° C/43° C).....	1350 / 350
Mixed @ 77° F / 110° F (25° C/43° C).....	900/400

Color:

Part A .....	Clear Pale Yellow
Part B .....	Light Gray

Gel Time @ spray temperature ["A" side and "B" side @ 140° F (60°C)]..... 30 seconds

Demold Time, ( 1/8" thick)..... 15 - 20 minutes

**NOTE:**

Spray time to build up a 1/8" thickness on a 4 square foot panel = 1 minute, 15 seconds time. The weight of the SP-200 applied 1/8" thick on a 4 square foot panel = 2.6 lbs. This panel was sprayed up using BJB's model CPE-600 Spray Equipment. The spray pressure was approximately 2500 p.s.i. Line heaters and heated hoses were set to maintain 140°F (60°C) material temperature for both A and B components. Feed tank temperature on the "A" side was 140°F (60°C) and the "B" side was 150°F (66°C). Both A and B materials were at approximately 120°F (49°C) at the gunhead.

**It is important to remix part B thoroughly before use, making sure the material is within a temperature range of 75°-85°F (24° - 29°C). Continue mixing until the material is uniform in appearance.**

**CURING:**

SP-200 A/B will fully cure at ambient temperatures in 2-3 days. However, some physical properties will be slightly lower than published. Heat resistance (HDT) will be maximized if parts are post-cured within 24 hours after application (see below).

**POST-CURING RECOMMENDED PROCEDURE:**

After demolding, allow parts to further cure at room temperature for 2 to 4 hours. It is recommended that parts be post-cured at 120°-130° F (49°-54° C) for 2 - 4 hours, followed by 4 - 6 hours at 180° ± 10° F (82° ± 6° C). Support may be needed for certain configurations during this process.

**STORAGE:**

Store in a cool 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. Electric band heaters for material feed containers may be required during cold weather periods.

**PACKAGING:**

5 Gallon kits .....	40 lbs. A, 36 lbs. B
Drum kits.....	400 lbs. A, 360 lbs. B

**SAFETY PRECAUTIONS:**

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. Use in well-ventilated areas. Avoid breathing vapors. If exposures cannot be kept at a minimum, a respirator may be necessary in addition to ventilation. The use of a positive pressure air supplied respirator is mandatory when airborne isocyanate concentrations are "not known" or exceeds OSHA'S TWA of 0.005 ppm. Air purifying, organic cartridge type respirators are not generally recommended to use when handling this material without implementation of an end of life service program. Observe OSHA regulations for respirator use (29 CFR 1910.134). Employers are responsible for selecting the correct respirator for each situation.

**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 emergency personnel. Never give anything by mouth to an unconscious person.

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

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."