



POLYTEK® DEVELOPMENT CORP.
BCC PRODUCTS, INC.

Product Technical Datasheet BC-8340 Urethane Elastomer

Applications

BC-8340 is used to make molds of detailed masters that contain moderate undercuts. Some of the most common uses are concrete formliners and to make molds for point-of-purchase displays, rapid prototypes, special effects, taxidermy, and sculpture reproductions.

Characteristics

BC-8340 is a two-part polyurethane molding system. BC-8340 is mixed one-to-one by volume (or 100 Iso Side A to 95 Curative Side B by weight) and cures at room temperature. BC-8340 contains no fillers and cures to a firm (Shore A40 \pm 4), medium amber rubber.

Instructions for Use

Prepare Master and Mold Housing

First, clean and dry your master thoroughly. If the master has a porous surface (clay, concrete, plaster, etc.) or is made of sulfur-based clay, you must seal it. You can use polyurethane varnish, polyurethane sealant, or paste wax to seal your master. Next, anchor your master and seal the base so that BC-8340 does not leak under your master. A hot glue gun works to anchor and seal the base at the same time. Also, you should seal all of your mold housing connections with sulfur-free clay or hot glue. Then, apply an appropriate release agent to the master and interior of the mold housing. A silicone-based release is recommended, but always test before use. Apply release agent sparingly, while coating all surfaces of the master. Too much release agent may cover the details of the master or pool in low spots. You should allow the release agent to dry thoroughly before pouring your mold.

Measure Iso Side A and Curative Side B

Note: BC-8340 provides approximately 15-20 minutes for you to mix and pour the mold before it begins to gel.

Make sure that Iso and Curative are at room temperature before mixing them. Please note that in cold weather it may take up to 24 hours for the Iso and Curative to reach room temperature. Using two clean, dry, plastic containers of equal size, measure equal volumes of the Iso Side A and Curative Side B.

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Mix Iso and Curative

After you prepare the master and mold housing and measure the Iso and Curative, you are ready to pour the Iso and Curative into another clean, dry, plastic container. Scrape the Iso and Curative containers to move all of the material into the mixing container. Combine the two ingredients for several minutes until no color striations are visible. Be sure to scrape the sides and bottom of the mixing container while mixing the two ingredients. You must mix the Iso and Curative completely so that BC-8340 will cure correctly. If air bubbles form during mixing, you should vacuum degas the mixture for several minutes to remove them.

Pour Mold

To ensure that no air bubbles form over the details of your master, you can brush a thin base coat onto the master and then pour the rest of the mixed BC-8340. The best way to pour a mold is to tilt your mold slightly and pour into one spot at the corner of the mold, allowing the material to cover your master slowly like the flow of lava. When you have finished pouring the mold, you may lightly spray release agent on the top of BC-8340 to break any air bubbles that have risen to the surface.

Demold and Cure Mold

Once you have poured your mold, allow the mold to cure 16 hours before demolding. To prolong the life of the mold, allow it to cure for 3–4 days before use.

Properties:

The following table lists the properties of the curative and prepolymer of BC-8340 before they have been mixed.

Property	Iso Side A	Curative Side B
Color	Clear Amber to Clear Brown	Clear Amber to Clear Brown
Mix Ratio by Weight	100	95
Mix Ratio by Volume	1	1
Shelf Life	6 Months	6 Months
Specific Gravity @ 75° F (24° C)	1.046	0.992
Density @75°F (24°C)	8.721 lb/gallon	8.270 lb/gallon
Viscosity @ 75° F (24° C), CPS	1100	350

Mixed Iso (Part A) Curative (Part B)

The following is a list of the properties of BC-8340 after the curative and prepolymer have been mixed.

Property	Time	Temperature
Mix Time*	1–2 Minutes	75° F (24° C)
Pot Life*	13-15 Minutes	75° F (24° C)
Gel Time*	15-25 Minutes	75° F (24° C)
Cure Time*	24 Hours	75° F (24° C)
Demold Time*	16 Hours	75° F (24° C)

*Mix time, pot life, gel time, cure time, and demold time vary depending on mass and component temperature.

Cured BC-8340

The following table explains the properties of BC-8340 after it has cured.

Property	Cured Product
Color	Medium Amber
Elongation, %	500
Rebound, Bashore, %	60
Reversion Temperature	270° F (132° C)
Shore Hardness	A40 ± 4
Specific Gravity	1.03
Tear, Die C, PLI	120
Tear, Split, PLI	30
Ultimate Tensile, PSI	650

Storage and Handling

Keep the BC-8340 Side A and Side B containers tightly closed when not in use and store at temperatures between 70–80° F (21–26° C). Do not expose the Iso or Curative to moisture! If moisture contaminates BC-8340 components, it will not cure properly. If these storage requirements are met, BC-8340 carries a shelf life warranty of six months.

Be sure to read the *Material Safety Data Sheets* that come with BC-8340.

When working with this material please observe the following safety precautions.

- Wear safety glasses, chemical-resistant rubber or plastic gloves and an apron.
- Avoid contact with skin.

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- In the case of skin contact, wipe affected area with isopropyl alcohol, followed by thorough washing with soap and water.
- In the case of eye contact, flush eyes with water for 15 minutes and consult a physician.
- If swallowed, drink one to two glasses of water and seek medical attention immediately.

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