

Por-A-Kast Flex

Applications

Por-A-Kast[®] Flex is used to make castings from rigid and flexible molds. This Por-A-Kast[®] Flex is often used as a substitute for wood in decorative trim moldings and architectural components.

Characteristics

Por-A-Kast[®] Flex is a two-part polyurethane casting system. This resin is mixed four-to-one by weight and cures at room temperature. Cured Por-A-Kast[®] Flex can be stained, painted, nailed, cut, sanded, and flexed. Please note that if you nail Por-A-Kast[®] Flex, you should pre-drill the nail holes.

Instructions for Use

Prepare Mold

Before you begin to cast in a polyurethane mold, you must prepare the mold by applying the appropriate release agent (we recommend Synlube 531). Apply release agent sparingly, while coating all internal surfaces of the mold. Too much release agent may cover the details of the mold. You should allow the release agent to flash off or dry approximately 10 minutes. If you want to use an in-mold paint, like CilCoat, you should apply it after the release agent dries.

Measure Curative & Prepolymer

Note: Por-A-Kast[®] Flex provides approximately 5–6 minutes for you to mix and pour before it begins to gel.

Make sure that the curative and prepolymer are room temperature before mixing them. (Please note that in cold weather it may take up to 24 hours for the two components of Por-A-Kast[®] Flex to reach room temperature).

Using two clean, dry, plastic containers and a scale, measure four parts of the curative (part A) into one container and one part of the prepolymer (part B) into the other container. For example, if you need 4 pounds of Por-A-Kast[®] Flex, measure 3.2 pounds of the curative in one container and 0.8 of the prepolymer in the other container.

Do not measure more resin than you can mix and pour within its 5–6 minute pot life. If you have a large mold that requires more resin than you can pour in 5–6 minutes, use a rotational casting method or pour the resin more than once (if you pour it more than once, you should do so immediately).

Be sure to seal the curative and prepolymer containers immediately after measuring to prevent air or humidity from affecting the material.

Mix Curative and Prepolymer

After you prepare the mold and measure the curative and prepolymer, you are ready to pour the curative and prepolymer into another clean, dry, plastic container. Combine the two ingredients for approximately 45 seconds, being careful to prevent air bubbles from forming. To mix small amounts of Por-A-Kast[®] Flex, use a plastic or metal spatula. For larger amounts, use a small hand drill with a jiffy mixer attachment.

Pour Casting

You should take your time to carefully pour the Por-A-Kast[®] Flex into the mold. The best way to pour a casting is to tilt the mold slightly and pour into one spot of the mold. Pour slowly so that any air bubbles that may have formed during mixing can break over the lip of the container as it pours out. You can squeeze the sides of a flexible mold to help release more air bubbles.

De-mold and Cure Casting

Once you have poured your casting, do not disturb the mold or de-mold the casting for 20–30 minutes. Although you may work with your cast in as little as 15 minutes after demolding, we recommend that you wait 1 hour for best results. You should store the piece flat for 5–7 days so it can reach its ultimate strength and hardness. After the casting has cured, you may stain, paint, nail, turn, drill, grind, and/or sand it. Please note that if you nail the cured resin, you should pre-drill the nail holes.



Properties

Curative (Part A) and Prepolymer (Part B)

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

Property	Curative (Part A)	Prepolymer (Part B)
Color	Light Tan	Amber
Mix Ratio by Weight	4	1
Shelf Life	6 Months	6 Months
Specific Gravity @ 77° F (25° C)	1.41	1.22
Viscosity @ 77° F (25° C), CPS	1500	50

Mixed Curative (Part A) and Prepolymer (Part B)

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

Property	Time	Temperature
Mix Time	45 Seconds	75° F (24° C)
Pot Life*	5–6 Minutes	75° F (24° C)
Gel Time*	8–10 Minutes	75° F (24° C)
Cure Time*	20–30 Minutes (Initial Cure) 5–7 Days (Complete Cure)	75° F (24° C)
Demold Time*	20–30 Minutes	75° F (24° C)
Post Cure Time*	5–7 Days (Stored Flat)	75° F (24° C)

*Pot life, gel time, cure time, and de-mold time vary depending on mass, mold temperature, and component temperature.

Cured Por-A-Kast® Flex

The following table lists the properties of Por-A-Kast® Flex after it has cured.

Property	Cured Product
Abrasion Resistance, Taber H-18 Wheel, 1000 Gram Weight, Gram Loss/1000 Revolutions	0.3046 grams
Color	Light Brown
Compression Set, Method B, 22 Hours @ 158° F (70° C)	15.7 %
Elongation, %	130
Rebound, Bashore, %	12
Shore Hardness	A90
Specific Gravity	1.36
Tear, Die C, PLI	296
Tear, Split, PLI	32
Ultimate Tensile, PSI	850

Storage and Handling

Keep the Por-A-Kast® Flex containers tightly closed when not in use and store at temperatures between 60–90° F (16–32° C). Do not expose the curative or prepolymer to moisture! If moisture contaminates the resin, it will not cure. If these storage requirements are met, Por-A-Kast® Flex carries a shelf life warranty of six months.

Be sure to read the *Material Safety Data Sheet* that comes with Por-A-Kast® Flex. When working with this resin, please observe the following safety precautions.

- Use only in well-ventilated areas.
- Wear chemically resistant rubber gloves, safety glasses, and an apron.
- Avoid prolonged or repeated contact with skin.
- In the case of skin contact, wipe affected area with isopropyl alcohol, followed by 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.

Por-A-Kast® Flex Product Bulletin

The conditions for your use and application of our products, technical assistance and information (whether verbal, written or by way of production evaluations), including any suggested formulations and recommendations, are beyond our control. Therefore, it is imperative that you test our products, technical assistance and information to determine to your own satisfaction whether they are suitable for your intended uses and applications. This application-specific analysis at least must include testing to determine suitability from a technical as well as health, safety, and environmental standpoint. Such testing has not necessarily been done by PUMA Polymers. All information is given without warranty or guarantee. It is expressly understood and agreed that customer assumes and hereby expressly releases PUMA Polymers from all liability, in tort, contract or otherwise, incurred in connection with the use of our products, technical assistance and information. Any statement or recommendation not contained herein is unauthorized and shall not bind PUMA Polymers. Nothing herein shall be construed as a recommendation to use any product in conflict with patents covering any material or its use. No license is implied or in fact granted under the claims of any patent. Update May 21, 2009.