



EZ~Mix® 40

Brushable Urethane Rubber Compound Technical Bulletin

PRODUCT OVERVIEW

EZ~MIX® 40 is a brushable polyurethane rubber mold compound that mixes and applies easily. Two liquids (Part A and Part B) are measured and combined in equal amounts by volume (no scale is necessary). After a few minutes of mixing, EZ~Mix® 40 is ready to be applied to a vertical surface with a brush. After a suitable thickness is attained (multiple layers), EZ~Mix® 40 cures overnight with negligible shrinkage to a flexible, durable mold rubber.

Following the application of a support shell, a rubber mold made with EZ~Mix® 40 is suitable for casting a variety of materials including wax, gypsum, urethane/epoxy resins, concrete, cement, etc.

TECHNICAL OVERVIEW

Key Values: ~Mixing Ratio: One to One by volume ~Shore A Hardness: 40
~Pot Life: 18 minutes at room temperature ~Cure Time/Demold: 16 hrs. ~Color: Grey

Properties	Viscosity	G/CC	Cu.In./Lb.	Mix Ratio
Part A	2400 cps			1:1 by volume
Part B	600			or 105A:100B by weight
Mixed A+B	varies	1.025	27	
Shore A Hardness . . .25A after 1 day, 40A after 36 hours at room temp.			Shrinkage Negligible	

Preparation

Preparation . . . Store and use at room temperature (72°F/23°C). Urethanes have a limited shelf life and should be used as soon as possible. Environmental humidity should be as low as possible. Good ventilation (room size) is essential. Wear safety glasses, long sleeves and rubber gloves to minimize contamination risk.

Some Materials Must Be Sealed . . . To prevent adhesion between the rubber and model surface, models made of porous materials (gypsum plasters, concrete, wood, stone, etc.) must be sealed prior to applying a release agent. **Superseal®** or **One Step®** (available from Smooth-On) are fast drying sealers suitable for sealing **porous** surfaces without interfering with surface detail. A **high quality spray shellac is suitable** for sealing modeling clays that contain sulfur or moisture (water based). Non-Porous models made of metal, glass, acrylic, pvc, other hard plastics and sulfur-free clays require only a release agent which should be allowed to dry before applying the rubber. **In all cases**, the sealing agent should be applied and allowed to completely dry prior to applying a release agent.

Applying A Release Agent . . Polyurethanes are adhesive. A release agent is required to facilitate demolding. You can purchase a suitable release agent (such as Universal® Mold Release) from Smooth-On or from your local Smooth-On Distributor. **~IMPORTANT:** Apply release agent to all surfaces that will contact the rubber. To ensure thorough coverage, lightly brush the release agent with a soft brush over all surfaces of the model. Follow with a light mist coating and let the release agent dry for 15 minutes.

Because no two applications are quite the same, a small test application to determine suitability for your project is recommended if performance of this material is in question.

IMPORTANT: Liquid urethanes are **moisture sensitive** and will absorb atmospheric moisture. Shelf life of product is drastically reduced after opening. Immediately replacing the lids on both containers after dispensing product will prolong the shelf life of the unused product. **XTEND-IT Dry Gas Blanket** (available from Smooth-On) will significantly prolong the shelf life of unused liquid urethanes.

Measuring, Mixing and Applying EZ-Mix 40 . . .

Measuring the components of EZ-Mix® 40 requires two containers. The first will be used for measuring out equal amounts of Part A and Part B. The second should be large enough to contain equal amounts of both components and allow thorough mixing without spillage. Mixing tools and containers should be clean and made of metal, glass or plastic.

Mixing . . . After dispensing equal amounts of Parts A and B into mixing container, **mix thoroughly for 3 minutes** making sure that you **scrape the sides and bottom of the mixing container several times**. **Pour all contents into new, clean mixing container and mix for 2 minutes**.

Applying The Rubber . . . This product must be applied in layers. Mold makers generally find that four layers (minimum 3/8") thickness is suitable for a working mold. Using a stiff brush, the first coat of rubber should be applied in a **thin layer** to capture intricate detail. Use dabbing strokes, especially around undercuts, to reduce entrapped air. Subsequent coats will add strength to the mold. Let the first coat dry for 60 minutes at room temperature until it becomes "tacky" before adding the next coat. Repeat until the necessary thickness is achieved. Do not allow rubber to fully cure between layers, as delaminating may result. **Note:** Although not necessary, **adding a small amount of SO-Strong® liquid color pigment** to every other mix of rubber will help you distinguish one layer from the next. This will ensure that you apply a thorough coating each time and help build uniform layers.

Curing . . . Allow the mold to cure overnight (at least 16 hours) at room temperature (77 F/25 C). Do not cure rubber where temperature is less than 65 F/18 C. Post curing the rubber after rubber has cured at room temp. (applying heat – 150°F/60°C for 4 – 6 hours) will increase physical properties and performance significantly.

Apply Support Shell . . . After layers of rubber fully cure (overnight) a support shell **must** be applied over the rubber mold. This will prevent the mold from distorting when casting into it. Visit www.smooth-on.com for support shell material options.

Demold . . . Once the support shell is cured, you can remove it and the rubber mold from the model's surface.

Casting Into The Mold . . . A release agent facilitates demolding and should be applied to the mold before each casting. The type of release agent to use depends on the material being cast. Universal® Mold Release is recommended for most applications and is available from Smooth-On or your local distributor. The mold should be sprayed with the release agent, brushed over all surface areas and allowed to dry before casting. To ensure thorough coverage, lightly brush the release agent with a soft brush over all surfaces of the model (especially areas of intricate detail). Apply a second thin mist coating and let dry for 15 minutes casting.

Mold Performance & Storage - Fully cured molds are tough, durable and will perform if properly used and stored. The physical life of the mold depends on how you use it (materials cast, frequency, etc.). Contact Smooth-On to discuss your particular application. Before storing, the mold should be cleaned with a soap solution and wiped fully dry. Do not stack molds, expose them to moisture or UV light.

The Material Safety Data Sheet (MSDS) for this or any Smooth-On product should be read prior to use and is available upon request from Smooth-On. All Smooth-On products are safe to use if directions are read and followed carefully.

Be careful. Part A is a TDI prepolymer. Vapors, which can be significant if material is heated or sprayed, cause lung damage and sensitization. Use only with adequate ventilation. Contact with skin and eyes may cause severe irritation. Flush eyes with water for 15 minutes and seek immediate medical attention. Remove from skin with waterless hand cleaner followed by soap and water. Prepolymers contain trace amounts of TDI which, if ingested, must be considered a potential carcinogen. Refer to MSDS. Part B is irritating to the eyes and skin. If contaminated, flush eyes with water for 15 minutes and seek immediate medical attention. Remove from skin with soap and water. When mixing with Part A follow precautions for handling isocyanates.

Important: The information contained in this bulletin is considered accurate. However, no warranty is expressed or implied regarding the accuracy of the data, the results to be obtained from the use thereof, or that any such use will not infringe upon a patent. User shall determine the suitability of the product for the intended application and assume all risk and liability whatsoever in connection therewith.

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