

Compat™ 45

Non-Inhibiting Urethane Rubber



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PRODUCT OVERVIEW

Compat™ 45 urethane is a unique urethane rubber which will not inhibit the cure of most Smooth-On platinum or tin cure silicone rubbers. It features a low viscosity for easy mixing and pouring and cures with minimal bubble entrapment.

Mix ratio is 1A:1B by volume (85A:100B by weight), pot life is 25 minutes and the rubber cures with an ultimate Shore hardness of Shore 45A. Cured rubber is dimensionally stable (low shrinkage), offers good wear resistance excellent library life. **Compat™ 45** can be used for a variety of applications including making molds to cast silicone prop body parts, animatronic skins and medical trainers, as well as for making rubber masters which can be molded using platinum or tin silicone without inhibition concerns.

Important; Do not use Ecoflex™ Gel, Ecoflex™ 00-10, Ecoflex™ Near Clear, Encapso-K, Rubber Glass™, Solaris™ or Sorta-Clear™ 12 or 37 with this product. They are not compatible and inhibition will result.

TECHNICAL OVERVIEW

Mix Ratio: 1A:1B by volume 85A:100B by weight

Mixed Viscosity (cps): 2600 (ASTM D-2393)

Specific Gravity (g/cc): 1.12 (ASTM D-1475)

Specific Volume (cu. in. /lb.): 24.7

Pot Life: 25 min. (73°F/23°C) (ASTM D-2471)

Cure time: 16 hrs. (73°F/23°C)

Color: Brown

Shore A Hardness: 45 (ASTM D-2240)

Tensile Strength (psi): 629 (ASTM D-412)

100% Modulus (psi): 137 (ASTM D-412)

Elongation @ Break: 772% (ASTM D-412)

Die C Tear Strength (pli): 101 (ASTM D-624)

Shrinkage (in./in.): <0.001 (ASTM D-2566)

All values measured after 7 days at 73°F/23°C

PROCESSING RECOMMENDATIONS

START BY PREPARING YOUR MODEL...

Preparation - Store and use at room temperature (73°F/23°C). These products have a limited shelf life and should be used as soon as possible. Use in a low humidity environment (below 50% RH). Mixing containers should have straight sides and a flat bottom. Mixing sticks should be flat and stiff with defined edges for scraping the sides and bottom of your mixing container. Good ventilation (room size) is essential. Wear safety glasses, long sleeves and rubber gloves to minimize contamination risk.

Some Materials Must Be Sealed - Models with porous surfaces (gypsum plasters, concrete, wood, stone, etc.) must be sealed prior to applying a release agent. **Sonite™ Wax** (available from Smooth-On distributors) is a proven sealer for porous surfaces.

Non-Porous Surfaces - Metal, glass, hard plastics, sulfur free clays, etc. require only a release agent.

Applying a Release Agent - Use a release agent made specifically for mold making.

IMPORTANT: If casting platinum silicone into Compat™ 45, only use Ease Release™ 200 when making your mold, DO NOT use Universal Mold Release™. A liberal coat of release agent should be applied onto all surfaces that will contact the rubber.

IMPORTANT: 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 30 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.

MEASURING & MIXING... Liquid urethanes are moisture sensitive and will absorb atmospheric moisture. Mixing tools and containers should be clean and made of metal or plastic. Materials should be stored and used in a warm environment (73°F/23°C).

IMPORTANT: Pre Mix the Part B before using. After dispensing equal amounts of Parts A and B by volume into mixing container, mix thoroughly for at least 3 minutes making sure that you scrape the sides and bottom of the mixing container several times.

IMPORTANT: Shelf life of product is reduced after opening. Remaining product should be used as soon as possible. Immediately replacing the lids on both containers after dispensing product will help 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 urethane products.

Safety First!

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.

KEEP OUT OF REACH OF CHILDREN.

Be careful.

Part A is an 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.

a soap solution for better plaster flow and easy release. **Aquacon™ Water Based Release Agent** (available from Smooth-On distributors) is recommended for releasing abrasive materials like **concrete**.

Performance & Storage - Fully cured rubber is tough, durable and will perform if properly used and stored. Molds should be stored on a level surface at room temperature in a dry environment. Do not stack molds, expose them to moisture or UV light for prolonged periods.

After mixing parts A and B, vacuum degassing is recommended to eliminate any entrapped air in liquid rubber. Your vacuum pump must pull a minimum of 29 inches of mercury (or 1 Bar / 100 KPa). Leave enough room in container for material expansion. Vacuum material until it rises, breaks and falls. Vacuum for 1 minute after material falls.

If Mixing Large Quantities (16 lbs./7 kgs. or more) at one time, use a mechanical mixer (i.e. Squirrel Mixer or equal) for 3 minutes followed by careful hand mixing for one minute as directed above. Then, pour entire quantity into a new, clean mixing container and do it all over again.

POURING, CURING & PERFORMANCE...

For best results, pour your mixture in a single spot at the lowest point of the containment field. Let the rubber seek its level up and over the model. **A uniform flow will help minimize entrapped air.** The liquid rubber should level off at least 1/2" (1.3 cm) over the highest point of the model surface.

Thickening Compat™ 45 for Brush On Applications - To thicken Compat™ 45 for brush on applications, **only use URE-FIL™ 11 filler.** Recommended starting proportion: Mix 1 part URE-FIL™ 11 with 1A:1B of Compat™ 45. Add more in small amounts if necessary.

DO NOT USE URE-FIL™ 9 (CAB-O-SIL) WITH COMPAT™ 45.

Curing - Allow rubber to cure a minimum of 24 hours at room temperature (73°F/23°C) before using. Cure time can be reduced with mild heat. Do not cure rubber where temperature is less than 65°F/18°C.

IMPORTANT - Do not add Kick-iT!™ cure accelerator to Compat™ 45, this will cause cured urethane to inhibit silicone.

Post Curing - Optional . . . Following a 24 hour cure, heating the rubber to 150°F (65°C) for 4 to 8 hours will increase physical properties and performance.

Using The Mold - If using as a mold material, a release agent should be applied to the mold before each casting. The type of release agent to use depends on the material being cast. The proper release agent for **wax, liquid rubber or thermosetting materials** (i.e. Smooth-On liquid plastics) is a spray release made specifically for mold making (available from Smooth-On or your distributor. Prior to casting **gypsum plaster materials**, sponge the mold with



Call Us Anytime With Questions About Your Application

Toll-free: **(800) 381-1733** Fax: **(610) 252-6200**

The new www.smooth-on.com is loaded with information about mold making, casting and more.