VytaFlex™ Series
Liquid Urethane Rubbers

PRODUCT OVERVIEW

Using Smooth-On's exclusive "V-Polymer™" technology, **VytaFlex™** urethane rubbers offer superior physical and performance properties for casting concrete. **VytaFlex™** urethanes are available in 10A, 20A, 30A, 40A, 45A, 50A and 60A Shore hardnesses and feature convenient one-to-one by volume mix ratios.

Vacuum degassing is not necessary and **VytaFlex™** rubbers cure with negligible shrinkage to a durable rubber that will last in production.

VytaFlex™ mold rubbers work especially well for casting pigmented / colored concrete. Molds made with **VytaFlex™ Series** urethanes will render accurate and uniform colored castings.

TECHNICAL OVERVIEW

	A:B Mix Ratio by Volume	A:B Mix Ratio by Weight	Mixed Viscosity (ASTM D-2393)	Specific Gravity (g/cc) (ASTM D-1475)	Specific Volume (cu. in./lb.)	Color	Shore A Hardness (ASTM D-2240)	Tensile Strength (ASTM D-412)	100% Modulus (ASTM D-412)	Elongation at Break % (ASTM D-412)	Die C Tear Strength (ASTM D-624)
VytaFlex™ 10	1:1 pbv	1:1 pbw	3,100 cps	1.00	27.9	Off-White	10A	200 psi	25	1,000%	38 pli
VytaFlex™ 20	1:1 pbv	1:1 pbw	1,000 cps	1.00	27.7	Clear Amber	20A	200 psi	50	1,000%	60 pli
VytaFlex™ 30	1:1 pbv	1:1 pbw	1,800 cps	1.02	27.3	Off-White	30A	500 psi	65	1,000%	78 pli
VytaFlex™ 40	1:1 pbv	1:1 pbw	2,000 cps	1.03	26.9	Off-White	40A	522 psi	100	660%	82 pli
VytaFlex™ 45	1:1 pbv	1:1 pbw	2,000 cps	1.04	26.4	Off-White	45A	886 psi	116	900%	100 pli
VytaFlex™ 50	1:1 pbv	1:1 pbw	2,000 cps	1.04	26.7	Off-White	50A	588 psi	215	400%	102 pli
VytaFlex™ 60	1:1 pbv	1:1 pbw	2,000 cps	1.04	26.6	Off-White	60A	880 psi	300	480%	136 pli

*Pot Life:
 VytaFlex™ 10, 20, 30, 40, 45: 30 minutes
 VytaFlex™ 50, 60: 60 minutes
 Shrinkage: < .001 in./in.

*Cure Time:
 VytaFlex™ 20, 30, 40, 45, 50, 60: Overnight/16 hours
 VytaFlex™ 10: 24 hours

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

PROCESSING RECOMMENDATIONS - FOR COMMERCIAL/INDUSTRIAL USE ONLY

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 - Urethanes are adhesive. 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™ (available from Smooth-On) or One Step™ are fast drying sealers suitable for sealing porous surfaces without interfering with surface detail. Sonite Wax™ or high-grade shellac is suitable for rough contours. A high quality shellac is suitable for sealing modeling clays that contain sulfur or moisture (water based). Thermoplastics (polystyrene) must also be sealed with shellac or PVA. In all cases, the sealing agent should be applied and allowed to completely dry prior to applying a release agent.

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

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.

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.

Applying A Release Agent - A release agent is necessary to facilitate demolding when casting into or over most surfaces. Use a release agent made specifically for mold making (Universal™ Mold Release available from Smooth-On). 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: Stir Part B thoroughly before dispensing. After dispensing equal amounts of Parts A and B 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.

If Mixing Large Quantities (16 lbs./7 kgs. or more) at one time, use a mechanical mixer (i.e. Turbine 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.

Although this product is formulated to minimize air bubbles in your the cured rubber, vacuum degassing prior to pouring rubber will further reduce entrapped air.

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.

Curing - Allow rubber to cure a minimum of 16 – 24 hours at room temperature (73°F/23°C) before demolding. VytaFlex™ 10 should cure for at least 24 hours before demolding. Cure time can be reduced with mild heat or by adding Smooth-On "Kick-iT!™" Cure Accelerator. Do not cure rubber where temperature is less than 65°F/18°C.

Post Curing - Optional . . . Following an overnight 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. In & Out™ II (oil based) or AquaCon™ (water based) are recommended for releasing concrete castings. Both are economical concentrates and are available from Smooth-On.

Performance & Storage - Fully cured rubber is tough, durable and will perform if properly used and stored. The physical life of the rubber depends on how you use it.

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Call Us Anytime With Questions About Your Application.

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

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

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