

Ecoflex™ 00-53 AF

Anti-Fungal, Super-Soft Silicone Rubber



www.smooth-on.com

PRODUCT OVERVIEW

Ecoflex™ 00-53 AF is an anti-fungal silicone rubber that resists the growth of fungi. Parts A and B are mixed 1:1 by weight or volume, pot life is about 18 minutes and rubber cures in about 3 hours at room temperature with negligible shrinkage. Low viscosity ensures easy mixing and pouring.

Rubber cures without a “tacky” surface, is very soft, very strong with high elongation. Ecoflex™ 00-53 AF is off-white translucent and can be color pigmented using Silc Pig™ silicone color pigments.

Ecoflex™ 00-53 AF is suitable for making a variety of skin-safe cushioning device configurations that resist fungi for orthopedic and orthotic applications.

TECHNICAL OVERVIEW

Mix Ratio: 1A:1B by volume	
Mixed Viscosity, cps: 8,000	(ASTM D-2393)
Specific Gravity, g/cc: 1.07	(ASTM D-1475)
Specific Volume, cu. in. /lb.: 26.0	(ASTM D-1475)
Pot Life: 18 minutes (73°F/23°C)	(ASTM D-2471)
Cure time: 3 hours (73°F/23°C)	
Color: Off-White Translucent	
Shore A Hardness: 00-50	(ASTM D-2240)
Tensile Strength, psi: 315	(ASTM D-412)
100% Modulus, psi: 12	(ASTM D-412)
Elongation @ Break: 980%	(ASTM D-412)
Die B Tear Strength, pli: 50	(ASTM D-624)
Shrinkage, in./in: < .001	(ASTM D-2566)
Useful Temp. Range: -65°F to 450°F (-19°C to 232°C)	

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

PROCESSING RECOMMENDATIONS

PREPARATION...

Safety - Use in a properly ventilated area (“room size” ventilation). Wear safety glasses, long sleeves and rubber gloves to minimize contamination risk. Wear vinyl gloves only. Latex gloves will inhibit the cure of the rubber.

Store and use material at room temperature (73°F/23°C). Warmer temperatures will drastically reduce working time and cure time. Storing material at warmer temperatures will also reduce the usable shelf life of unused material. These products have a limited shelf life and should be used as soon as possible. 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.

Cure Inhibition - Addition-cure silicone rubber may be inhibited by certain contaminants in or on the pattern to be molded resulting in tackiness at the pattern interface or a total lack of cure throughout the rubber. Latex, tin-cure silicone, sulfur clays, certain wood surfaces, newly cast polyester, epoxy, tin cure silicone rubber or urethane rubber may cause inhibition. If compatibility between the rubber and the surface is a concern, a small-scale test is recommended. Apply a small amount of rubber onto a non-critical area of the pattern. Inhibition has occurred if the rubber is gummy or uncured after the recommended cure time has passed.

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.

To prevent inhibition, one or more coatings of a clear acrylic lacquer applied to the model surface is usually effective. Allow any sealer to thoroughly dry before applying rubber. Note: Even with a sealer, platinum silicones will not work with modeling clays containing heavy amounts of sulfur. Do a small scale test for compatibility before using on your project.

Applying A Release Agent - Although not usually necessary, a release agent will make demolding easier when pouring into or over most surfaces. Ease Release™ 200 is a proven release agent for use with silicone rubber. Mann Ease Release™ products are available from Smooth-On or your Smooth-On distributor.

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. If there is any question about the effectiveness of a sealer/release agent combination, a small-scale test should be made on an identical surface for trial.

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. Use only with adequate ventilation. Contact with skin and eyes may cause 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.

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.

MEASURING & MIXING...

Stir Part A and Part B thoroughly before dispensing. After dispensing required amounts of Parts A and B into mixing container (1A:1B by volume or weight), **mix thoroughly for 3 minutes making sure that you scrape the sides and bottom of the mixing container several times.** After mixing parts A and B, vacuum degassing is recommended to eliminate any entrapped air. Vacuum material for 2-3 minutes (29 inches of mercury), making sure that you leave enough room in container for product volume expansion.

POURING, CURING & MOLD 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 ½" (1.3 cm) over the highest point of the model surface.

Curing / Post Curing - Allow rubber to cure as prescribed at room temperature (73°F/23°C) before demolding. Do not cure rubber where temperature is less than 65°F/18°C. **Optional:** Post curing the mold will aid in quickly attaining maximum physical and performance properties. After curing at room temperature, expose the rubber to 176°F/80°C for 2 hours and 212°F/100°C for one hour. Allow mold to cool to room temperature before using.

Thickening Ecoflex™ Silicones - THI-VEX™ is made especially for thickening Smooth-On's silicones for vertical surface application (making brush-on molds). Different viscosities can be attained by varying the amount of THI-VEX™. See the THI-VEX™ technical bulletin (available from Smooth-On or your Smooth-On distributor) for full details.

Thinning Ecoflex™ Silicones - Smooth-On's Silicone Thinner™ will lower the viscosity of Ecoflex™ silicones for easier pouring and vacuum degassing. **A disadvantage** is that ultimate tear and tensile are reduced in proportion to the amount of Silicone Thinner™ added. **It is not recommended to exceed 10% by weight of total system (A+B).** See the Silicone Thinner™ technical bulletin (available from Smooth-On or your Smooth-On distributor) for full details.



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.