



Dragon Skin™

Addition Cure Silicone Rubber Compounds

PRODUCT OVERVIEW

Dragon Skin_m and Dragon Skin_m Q are high performance platinum cure silicone rubbers that can be mixed 1A:1B by weight or volume and cures at room temperature with negligible shrinkage to a Shore 10A. Cured Dragon Skin_m is very soft, very strong and very “stretchy”. It will stretch many times its original size without tearing and will rebound to its original form without distortion.

Dragon Skin_m is suitable for many special effects applications, especially animatronics where repetitive motion is required. It is water white translucent and will accept pigments for creating color effects or for creating a paint that can be painted on to an existing Dragon Skin_m (or other) silicone surface. Because of the superior physical properties and softness of Dragon Skin_m, it is also used for orthopedic & cushioning applications. **Dragon Skin_m** has a pot life of 20 minutes and a demold time of 5 hours.

In A Hurry? Dragon Skin_m Q (Q = Quick) has a pot life of 8 minutes and a demold time of 75 minutes.

TECHNICAL OVERVIEW

Key Values: ~Mixing Ratio: 1A to 1B by weight or volume ~Shore A Hardness: 10
~Color: Translucent Clear

Properties	Viscosity	G/CC	Cu. In./Lb.	Tensile Strength	Mix Ratio
Part A	-	-	-	-	100 pbw/pbv
Part B	-	-	-	-	100 pbw/pbv
Mixed	23,000 cps	1.07	25.8	475 psi	-

<u>Dragon Skin</u>	<u>Dragon Skin Q</u>	~Elongation At Break . . .	~100 % Modulus . . .
~ Pot Life*: 20 minutes	8 minutes	1000%	22 psi
~Demold*: 5 hours	75 minutes	~Die B Tear Strength . . . 102 pli	~Shrinkage . . . Negligible

* at room temperature: 75°F / 23° C

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 & Use At Room Temperature (72°F / 22°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.

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 mold. Latex, sulfur clays, certain wood surfaces, newly cast polyester, epoxy 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. **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 casting into or over most surfaces. Ease Release 200_m is a proven release agent for making molds with silicone rubber. Mann Ease Release_m 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. Also, you can call **Smooth-On for technical assistance at (800) 762-0744.**

Measuring & Mixing . . .

Materials should be stored and used in a warm environment (72° F / 22° C). This product has a limited shelf life and should be used as soon as possible. Wear safety glasses, long sleeves and rubber gloves to minimize contamination risk. Before you begin, pre-mix Part B (base) thoroughly. 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 1/2" (1.3 cm) over the highest point of the model surface.

Curing . . . Allow rubber to cure as prescribed at room temperature (75°F/23°C) before demolding. Full physical properties are attained after 24 hours cure at room temperature. Do not cure rubber where temperature is less than 65°F /18°C. Allow mold to cool to room temperature before using.

If Using As A Mold . . . When first cast, silicone rubber molds exhibit natural release characteristics. Depending on what is being cast into the mold, mold lubricity may be depleted over time and parts will begin to stick. No release agent is necessary when casting wax or gypsum. Applying a release agent such as Ease Release 200 (available from Smooth-On) prior to casting polyurethane, polyester and epoxy resins is recommended to prevent mold degradation.

Thickening With Thi-Vex™ Thickening Agent . . . A very small amount of Thi-vex will thicken the rubber brushable for vertical surface application. 0.25% - 0.5% Thi-vex (% of the total weight of the mixture, A+B) is all that is necessary.

Example: 100 Parts A + 100 Parts B (mix thoroughly) + 0.5 Parts by weight = brushable, some sag
100 Parts A + 100 Parts B (mix thoroughly) + 1.0 Part by weight = thick brushable, no sag

Thinning Dragon Skin – Smooth-On's 'Silicone Thinner' will lower the viscosity of Dragon Skin for easier pouring and vacuum degassing.

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

Smooth-On offers a complete line of Liquid Rubber, Liquid Plastic and Release Agent products for hundreds of industrial and art related applications. Chances are there is a distributor in your area to offer local support.

Toll-free: (800) 762-0744

Fax: (610) 252-6200

Website: www.smooth-on.com