

# Smooth-Sil™ 933 Flame Out™

1A:1B Mix Flame Rated Silicone Rubber



www.smooth-on.com



## PRODUCT OVERVIEW

**Smooth-Sil™ 933 Flame Out** is a Shore 33A platinum silicone that is mixed 1A:1B by volume or weight. Rubber cures at room temperature (73°F/23°C) with negligible shrinkage. Vacuum degassing is recommended to minimize air bubbles in cured rubber. Cured material is rated to UL 94 V-0

**Smooth-Sil™ 933** cures in 6 hours to a soft, strong rubber that is tear resistant and exhibits very low long term shrinkage. An infinite number of color effects can be achieved by adding Silc Pig™ silicone pigments. Applications include electrical potting for flame resistant enclosures, creating gaskets for medical devices and electrical appliances and other applications where a flame resistant, flexible silicone seal is required.

**Note:** This product **will not** cure against surfaces containing sulfur, even when sealed.

## TECHNICAL OVERVIEW

Mix Ratio: 1A : 1B by weight or volume

Mixed Viscosity, cps: 40,000 (ASTM D-2393)

Specific Gravity, g/cc: 1.42 (ASTM D-1475)

Specific Volume, cu. in./lb.: 19.5 (ASTM D-1475)

Pot Life: 45 minutes (73°F/23°C) (ASTM D-2471)

Cure time: 6 hours (73°F/23°C)

Color: White

Shore A Hardness: 33 (ASTM D-2240)

Tensile Strength, psi: 222 (ASTM D-412)

100% Modulus, psi: 71 (ASTM D-412)

Elongation @ Break: 433% (ASTM D-412)

Die B Tear Strength, pli: 50 (ASTM D-624)

Shrinkage, in./in.: <.001 (est.)

\* 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.

**Cure Inhibition** - Addition cured silicone rubber may be inhibited by certain contaminants resulting in tackiness at the pattern interface or a total lack of cure throughout the rubber. Latex, 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. 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 surface is usually effective. Allow any sealer to thoroughly dry before applying rubber.

**Even with a sealer, Smooth-Sil™ 933 will not cure against surfaces containing sulfur. If you are not sure if your clay contains sulfur, do a small compatibility test before using for an important project.**

**Applying A Release Agent** - Although not usually necessary, a release agent will make demolding easier when casting onto most surfaces.

Ease Release™ 200 is a proven release agent for releasing silicone from silicone or other surfaces. Mann Ease Release™ products are available from Smooth-On or your Smooth-On distributor. **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...** Before you begin, pre-mix Part A and Part B separately. After dispensing required amounts of Parts A and B into mixing container (1A:1B by volume or weight), **mix thoroughly** making sure that you **scrape the sides and bottom of the mixing container several times.**

## 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** - Avoid contact with eyes. Silicone polymers are generally non-irritating to the eyes however a slight transient irritation is possible. Flush eyes with water for 15 minutes and seek medical attention. Remove from skin with waterless hand cleaner followed by soap and water. Children should not use this product without adult supervision.

**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.

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.

## POURING, CURING & PERFORMANCE...

**Pouring** - For best results, pour your mixture in a single spot at the lowest point of the containment field. Let the rubber seek its own level. **A uniform flow will help minimize entrapped air.**

**Curing** - Allow rubber to cure for 6 hours at room temperature (73°F/23°C) before demolding. **Heat Curing** - Time to demold can be reduced with mild heat. **Example:** After pouring **Smooth-Sil™ 933** at room temperature, place the mold in a hot box or industrial oven at 150°F (60°C). This may reduce the demold time substantially. **Note** - time will vary depending on mold thickness.



**Call Us Anytime With Questions About Your Application.**

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

The new [www.smooth-on.com](http://www.smooth-on.com) is loaded with information about mold making, casting and more.