



FORMULA #20-136

Epoxy Casting Compound

PRODUCT OVERVIEW

Formula #20-136 is a premium quality epoxy casting compound suitable for a variety of industrial casting and bonding applications. Most commonly cured with Smooth-On Sonite 16 Hardener (heat cure cycle required), #20-136 features a relatively low viscosity that ensures minimal bubble entrapment. Castings cure with negligible shrinkage and are very hard, very strong and heat resistant. #20-136 is ideal for making vacuum form molds, foundry patterns, forming dies & fixtures, hard rollers, industrial parts and high impact tools. #20-136 is also suitable for encapsulation applications or for use as a high temperature epoxy for bonding a variety of surfaces (resists temperatures up to 350 F/177 C if post cure schedule is used).

TECHNICAL OVERVIEW - Cured With Sonite 16 Hardener.

Key Values: ~**Mixing Ratio:** 100 Parts #20-136 to 15.5 Parts Sonite 16 by weight ~**Durometer:** Barcol 55
~ **Pot Life:** 3 hours ~**Cure Cycle:** 2 hours at 80 C followed by 3 hours at 150 C. ~**Color:** Beige

Properties	Viscosity	G/CC	Cu. In./Lb.	Tensile Strength	Compressive Strength	Shrinkage	Mix Ratio
#20-136	-	-	-	-	-	-	100 pbw
Sonite 16	-	-	-	-	-	-	15.5 pbw
Mixed	12,000 cps	1.15	20.51	4500 psi	13,000 psi	.006 in./in.	-

Hardness (Barcol 935): 55 **Tensile Elongation:** 0.65% **Tensile Modulus:** 332,000 psi **Tensile Shear:** 1000 psi
Flexural Strength: 11,000 psi **Flexural Modulus:** 254,000 psi **Heat Distortion Temp.:** 252 F/ 122 C. if cured at Room Temperature. 350F/177C if post cured according to heat curing schedule.

Preparation

Measuring

Mixing

Preparation...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 disposable vinyl gloves and eye protection when using.

Applying A Release Agent . . . A release agent (Universal Mold Release) is necessary to facilitate demolding when casting #20-136 into or over most surfaces. A liberal coat of release agent should be applied onto all surfaces that will contact #20-136. ~IMPORTANT: To ensure thorough coverage, lightly brush the release agent with a soft brush over all surfaces of the model. Let the release agent dry for 30 minutes before casting #20-136.

Measuring & Mixing . . . The proper mixing ratio is 100 Parts of #20-136 resin to 15.5 Parts Sonite 16 hardener by weight. You must use an accurate scale (gram scale or triple beam balance scale) to weigh these components properly. Do not attempt to measure components by volume.

Mixing tools and containers should be clean and dry. Mixing should be done in a well ventilated area. Wear safety glasses, long sleeves and rubber gloves to minimize contamination risk. Combine #20-136 with the appropriate amount of Sonite 16 hardener. Mix thoroughly for 3 minutes making sure that you scrape the bottom and sides of the container several times.

Pouring

If casting #20-136 into a rubber mold, pour mixture in a single spot at the lowest point of the mold. Let the mixture seek its level. A uniform flow will help minimize entrapped air.
If making vacuum forming molds, it is best to use piano wire (15/1000 inch gauge) to make vacuum holes.

Heat Curing

For best results, #20-136 should be heat cured in an oven. Cure at 175 F / 80 C for two hours, followed by three hours at 300 F / 150 C. Allow material to cool to room temperature.

Performance

Cured castings of #20-136 are rigid, strong and durable. They can be machined, drilled, tapped, painted or bonded to other surfaces (mold release must be removed prior to painting or bonding). #20-136 also resists heat solvents and dilute acids. Because no two applications are quite the same, a small scale test to determine suitability for the intended application is recommended. **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.**

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. Vapors, which can be significant if #20-136 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. Refer to MSDS. Sonite 16 is corrosive and causes severe eye and skin burns. Vapors irritate the respiratory tract. Sensitization may occur through contact or inhalation. Use with adequate ventilation. Remove from skin with soap and water. If contaminated, flush eyes with water for 15 minutes and seek immediate medical attention.

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.

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