



# Smooth-Cast<sup>™</sup> Semi-Rigids

Semi-Rigid Urethane Casting Resins

## PRODUCT OVERVIEW

The Smooth-Cast<sup>™</sup> line of low-cost semi-rigid urethane casting resins cure quickly to semi-rigid plastics that offer excellent impact resistance. These plastics are easy-to-use (mix ratio is 1A:1B by volume) and have low viscosities for minimal bubble entrapment. Vibrant colors are possible by adding SO-Strong color tints.

Shore Hardness Available:                    45D                    60D    61D                    70D (for comparison)

Softer, Semi-Rigid
Some Flexibility
Rigid, Not Flexible

These semi-rigid plastics are virtually unbreakable and will really take a beating. They also offer exceptional abrasion resistance. It is good for making high-impact resistance tools, prototypes, abrasion resistant parts, foundry patterns, roller facings, vibration pads, fast concrete stamping pads, etc.

## TECHNICAL OVERVIEW

Product	Value	Mix Ratio (pbv)	Color	Shore Hardness	Pot Life	Demold Time	Mixed Viscosity	G/CC	Cu. In./Lb.	Ultimate Tensile	Tear (Die C)	Elong. at break	Shrink in./in.
SC 45D		1A:1B	Amber	45D	5 min.	20 min.	500 cps	1.08	26	1,500	150 pli	100%	.002
SC 60D		1A:1B	Amber	60D	5 min	20 min.	1500 cps	1.05	26.4	2,200	220 pli	30%	.015
SC 61D		1A:1B	Amber	61D	7 min	60 min.	300 cps	1.08	26	1,800	220 pli	20%	.010

## Preparation

## Mixing

**Preparation . . .** Materials should be stored and used in a warm environment (72° F / 22° C). These products have a limited shelf life and should be used as soon as possible. Your mixing tools and containers should be clean and made of metal, glass or plastic. To minimize the introduction of harmful moisture to your mix or unused product, do not use wooden utensils or paper containers. As with most two-component urethane products, mixing should be done in a well-ventilated area. Wearing latex gloves and long sleeve garments will help minimize skin contact. **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.**

**Applying A Release Agent . . .** If you are unsure about surface compatibility, a trial casting on a surface finish similar to the final mold or model should be made to avoid damage to the working surface. Polyurethane, latex or metal molds should be dry and require a coat of suitable release agent. Universal Mold Release (available from Smooth-On) is ideal for this purpose. A liberal coat of release agent should be applied to all surfaces that will contact the plastic. To ensure thorough coverage, lightly brush the release agent with a soft brush over all surfaces. Follow with a light mist coating and let the release agent dry for 15 minutes.

**Before Mixing . . . Part B (blue label) must be PRE-MIXED. Stir Well.**

**Mixing . . .** The components (Parts A and B) should be at room temperature (77 F / 25 C). Combine equal amounts of Parts A & B by volume in a mixing container. Make sure that you scrape the bottom and sides of your container several times. SC 60D is a very fast setting material. Do not delay between mixing and pouring. Also, the higher the mass concentration, the faster the material gels and cures.

**IMPORTANT:** Shelf life of product is drastically reduced after opening. Remaining product should be used as soon as possible. **XTEND-IT Dry Gas Blanket** (available from Smooth-On) will significantly prolong the shelf life (up to 4 times longer) of unused liquid urethane products.

## **POURING**

**Pouring . . .** For best results, pour your mixture in a single spot at the lowest point of the mold or container and let the mixture seek its level. If encapsulating an object, do not pour the mixture directly over the object. Let the mixture seek its own level around and over the object. This will help minimize air entrapment.

**Performance . . .** Cured castings are semi-rigid, impact resistant and exhibit negligible shrinkage. They also resist moisture, moderate heat, solvents and dilute acids. Mold release must be removed prior to painting or bonding the cured piece. Because no two applications are quite the same, a small test application to determine suitability is recommended if performance of this material is in question.

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**Be Careful . . .** Part A (Yellow Label) contains methylene diisocyanate. Vapors, which can be significant if prepolymer 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 soap and water. Part B (Blue Label) is irritating to the eyes and skin. Avoid prolonged or repeated skin contact. 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.

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Prototype Rubber Models  
Rubber Mechanical Parts

Special Effects  
Art Bronze Wax Molds  
Vertical Surface "Brush-On" Molds  
Architectural Restoration Molds

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## Mixing

**Preparation . . .** Materials should be stored and used in a warm environment (72° F / 22° C). These products have a limited shelf life and should be used as soon as possible. Your mixing tools and containers should be clean and made of metal, glass or plastic. To minimize the introduction of harmful moisture to your mix or unused product, do not use wooden utensils or paper containers. As with most two-component urethane products, mixing should be done in a well-ventilated area. Wearing latex gloves and long sleeve garments will help minimize skin contact. **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.**

**Applying A Release Agent . . .** If you are unsure about surface compatibility, a trial casting on a surface finish similar to the final mold or model should be made to avoid damage to the working surface. Polyurethane, latex or metal molds should be dry and require a coat of suitable release agent. Universal Mold Release (available from Smooth-On) is ideal for this purpose. A liberal coat of release agent should be applied to all surfaces that will contact the plastic. To ensure thorough coverage, lightly brush the release agent with a soft brush over all surfaces. Follow with a light mist coating and let the release agent dry for 15 minutes.

**Before Mixing . . . Part B (blue label) must be PRE-MIXED. Stir Well.**

**Mixing . . .** The components (Parts A and B) should be at room temperature (77 F / 25 C). Combine equal amounts of Parts A & B by volume in a mixing container. Make sure that you scrape the bottom and sides of your container several times. SC 60D is a very fast setting material. Do not delay between mixing and pouring. Also, the higher the mass concentration, the faster the material gels and cures.

**IMPORTANT:** Shelf life of product is drastically reduced after opening. Remaining product should be used as soon as possible. **XTEND-IT Dry Gas Blanket** (available from Smooth-On) will significantly prolong the shelf life (up to 4 times longer) of unused liquid urethane products.

## **POURING**

**Pouring . . .** For best results, pour your mixture in a single spot at the lowest point of the mold or container and let the mixture seek its level. If encapsulating an object, do not pour the mixture directly over the object. Let the mixture seek its own level around and over the object. This will help minimize air entrapment.

**Performance . . .** Cured castings are semi-rigid, impact resistant and exhibit negligible shrinkage. They also resist moisture, moderate heat, solvents and dilute acids. Mold release must be removed prior to painting or bonding the cured piece. Because no two applications are quite the same, a small test application to determine suitability is recommended if performance of this material is in question.

**SAFETY FIRST!**

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The Material Safety Data Sheet for this or any Smooth-On product should be read before using and is available upon request. All Smooth-On products are safe to use if directions are read and followed carefully.

**Be Careful . . .** Part A (Yellow Label) contains methylene diisocyanate. Vapors, which can be significant if prepolymer 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 soap and water. Part B (Blue Label) is irritating to the eyes and skin. Avoid prolonged or repeated skin contact. 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 a patent. User shall determine the suitability of the product for his/her intended application and assume all risk and liability whatsoever in connection therewith.

## **TECHNICAL HELP IS AVAILABLE - TOLL FREE!**

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***There's A lot To See & Learn At: [www.smooth-on.com](http://www.smooth-on.com)***

*Office Hours and Technical Assistance: 8:00 a.m. to 5:00 p.m. eastern standard time.*

## ***There's So Much More You Can Do . . .***

**SMOOTH-ON** offers a complete line of ***Urethane And Silicone rubber*** products that are ideal for literally ***hundreds*** of industrial and art-related applications including:

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Prototype Rubber Models  
Rubber Mechanical Parts

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Art Bronze Wax Molds  
Vertical Surface "Brush-On" Molds  
Architectural Restoration Molds

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