Specialty Resin & Chemical LLC

Superior Casting Resins and RTV Silicone Rubber

Specialty Resin manufactures a full line of volatile free polyurethane casting systems. We are committed to formulating safer, user friendly products with superior physical properties. SRC polyurethane products contain no TDI, phthalates, or volatile organic compounds. Product uses include: Making molds, Models, Patterns, Prototypes, Props, Replicas, Jewelry, Miniatures, Production Parts, Gaskets, Figurines, etc. We also supply RTV Silicone Rubber, release agents, pigments, and many other specialty chemicals for resin casting.

Specialty Resin & Chemical is family owned and operated. We are proud to manufacture and supply American made products. You are assured of prompt and accurate order fulfillment and the highest level of service possible. We are dedicated to providing our customers user friendly products with superior physical properties. Providing superior products and meeting the demands of our customers is a part of Specialty Resins commitment to excellence.

SRC is always working to develop new products for the future. If you have any questions, comments or new product suggestions please feel free to contact us. Your input is extremely important to our business.

Shop online at: www.specialtyresin.com

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Important: It is most important that both resin and hardener are thoroughly mixed together. Products should be stored at 70-80 F prior to use. Products may not cure properly if mixing instructions are not carefully followed. The workplace environment contributes to high quality work and safety. A dust free and well ventilated mixing and casting area are fundamental. Always take precautions and wear recommended safety equipment (rubber gloves, protective eye-wear, and apron. Have all equipment and tools ready and positioned for use. Suggested tools include: Mixing cups, stir sticks, rags, drop cloth, masking tape, foam brushes, duct tape, resin, propane torch or heat gun, scale, level, and lacquer thinner (for clean-up).

Polyurethane Casting Instructions:

Wax and Polish Pattern/Mold: If your mold is made out of anything other than silicone rubber apply mold release to the inside of the mold. Mold release will protect your mold and prevent adhesion. Guarantee a good release by applying a hard wax and a high temperature release agent. First use a wax/sealer, buff, then apply thin coats of release agent. Using two dissimilar materials is good release insurance. Gently wipe out or blow out any excess release.

Completely Mix Individual & Combined Mold Compounds: First shake or agitate the bottles of both "A" and "B" components and let stand allowing bubbles to dissipate. Measure out equal parts of resin in two separate plastic cups. Mix the two chemicals together into a third plastic cup using a plastic or metal stick for stirring. Be thorough and work quickly. Mix approximately for 15-20 seconds using a rhythmic down, around, and up motion.

Pouring The Material: Target the pouring stream to the mold's lowest corner having the least detail. You can also pour the material through a cone-shaped screen-wire sieve; this helps filter trapped air. If you move the stream about, always let the material flood ahead of your pour stream. Don't delay pouring the material and never scrape out the last few ounces from the mixing container, this could dislodge unmixed material from the walls and ruin the casting.

Polymerization: The curing stage is the wrong time to be impatient. Set a timer to avoid prematurely removing the casting. Regardless of the urgency, de-mold when the manufacturer specifies. Smaller castings may take longer to cure so check the mixing cup to be sure the material has cured before de-molding.

De-mold With Care: If the copied piece has no negative draft, all porosity was sealed, and the releasing agents were properly applied, then de-molding will be simple. If possible, use compressed air, it quickly breaks the vacuum bond between the mold and the part. Concentrate the force of air where the mold and casting meet. If using a flexible mold, simply flex the mold and the part should come out.

Silicone Casting Instructions:

Shake the catalyst/activator container well before use. Weigh the proper amount of base and activator into a clean mixing container. Mix the base and catalyst together by stirring with a stiff, flat ended metal spatula until a uniform color is obtained. Scrape the container walls and bottom well and remix to insure a thorough mix. The container should not be filled more than 1/3 the container depth to allow sufficient room for expansion during the de-aeration procedure.

Place the container into a vacuum chamber and evacuate the entrapped air from the mixture using a vacuum pump capable of achieving 29 inches of mercury vacuum. The mixture will rise, crest and then collapse in the container. Interruption of the vacuum may be necessary to prevent overflowing the container. Keep the mixture under full vacuum for 2-3 minutes after the material has receded in the container. Bleed air slowly into vacuum chamber. When the chamber is at atmospheric equilibrium, remove the cover and take out. If you do not have vacuum equipment it is recommended to pour a thin coating of silicone over the pattern and allow to cure, then make a second pour. Without the use of a vacuum chamber you will want to pour the silicone approximately 4-6’ above the pattern and in a very thin stream to allow mixed in air to break and escape.

Pour the de-aired material slowly in a steady stream from one end of the mold box so that the material flows evenly over the pattern. This should minimize entrapment of air bubbles under the flowing material. A mold release (petroleum jelly) may be applied on the pattern first to improve release. Petroleum jelly also works well as a release agent for preventing silicone from sticking to silicone when making two part molds. Allow the rubber to cure at 75±5°F (24°C) for the recommended time before removing the pattern. Heat acceleration is not recommended with Cast-a-Mold silicone rubber. For best results, allow the mold to cure an additional 24 hours before using it in production.

Coating Tables and Bar Tops with Epox-It 80

Place a drop cloth underneath table or work area. Position the table and check for levelness. Wipe the table top off with a damp rag and allow to dry. If you do not want the epoxy to flow over the edges, you can create a barrier with duct tape or painters tape. Press the tape against the entire edge of the table, making sure the tape is sticking 1" above the surface. Fold the tape over so that it adheres to itself, leaving no glue or adhesive showing. This will assure that the adhesive will not come in contact with the epoxy resin when poured. It is recommended to seal porous surfaces, such as wood, with a thin coating of Epox-It 80 using a squeegee or foam brush. Allow to cure for 6 hours. If your surface is not porous, or has been sealed, you can skip this step.

Place the objects you wish to trap in the resin on the table top. Keep in mind that pouring the resin may move objects. You should affix light objects, like photos, with a glue stick. While glue is wet, use a roller to push air bubbles out from underneath the print. A glue gun can be used for heavier objects, such as coins. We recommend sealing thin paper objects with a clear drying glue, such as Mod Podge, or similar product. This prevents the epoxy from penetrating the paper.

Carefully measure out equal parts of resin by volume. Mix vigorously for 3 minutes until no swirls are seen. Make sure to scrape the sides and bottom of your container thoroughly and continue mixing. Let the epoxy mixture sit for 2-3 minutes. This allows air bubbles to dissipate before pouring. Mix an adequate amount to create a thin coating. Do no exceed a maximum thickness of 1/4”. You may want to pour several layers of epoxy. Wait for each layer to gel, approximately 6 hours prior to the next coat. Subsequent coats, beyond 48 hours, require a slight abrading of the surface. After sanding, clean and wipe with a solvent removing any dust or dirt. Note: Larger pours may require mixing 5-8 minutes. This assures a good mixture. It is recommended to not mix more than 1 gallon at a time.

Slowly, pour a thin stream of the resin mixture on your table top creating a thin layer. Fill any indents or flaws on the table surface with the mixture. Use a foam brush to guide the resin into indentations. Continue pouring until the entire table top is coated. After a few minutes, air bubbles may rise to the surface. Use a propane torch (low flame), or heat gun, to assist the air bubbles in rising out. Hold the torch/heat gun approximately 8 inches from surface. Use a gentle sweeping motion across the surface until bubbles are gone. The torch/heat gun should never be held in one place for too long, as this can permanently damage the surface and coating. Allow resin to dry for 6 hours before making a second pour.

When making a second pour, use clean containers, mixing utensils, and a new batch of epoxy resin. Follow the previous steps. Pour the resin mixture slowly onto the surface until the entire table top is coated. Apply additional coats as desired. Allow adequate curing time between coats. Let cure for 24 hours. It is recommended to allow the table top to harden for 5 days before placing objects on it.

Coverage

16oz coats approximately 3 sq. feet @ 1/16” thick 32oz coats approximately 6 sq. feet @ 1/16” thick 64oz coats approximately 12 sq. feet @ 1/16” thick
1 gallon coats approximately 24sq feet @ 1/16” thick 2 gallon coats approximately 48 sq. feet @ 1/16” thick

Polyurethane & Epoxy Casting Resins

MODEL-PRO **Mix Ratio:** 1:1 by wt./vol. **Pot Life:** 2 min. **De-mold:** 15 min. **Heat Deflect:** 300f **Hardness:** 75-D **Viscosity:** 80 cps

Model-Pro is a two component polyurethane casting resin which exhibits good impact resistance and strength. It has a low viscosity making it extremely easy to mix. It contains zero solvents making it virtually odorless and user friendly. Product uses include: Casting models, prototypes, figurines, reproductions, etc. This is ideal resin for model makers, hobbyists, crafters, and taxidermists. Model-Pro turns from liquid to solid in 15 minutes and works excellent in silicone molds. Model-Pro comes in off-white or black.

MODEL-PRO SLOW **Mix Ratio:**1:1 by wt./vol. **Pot Life:** 6 or 12 min **De-mold:**1 or 2 hour **Heat Deflect:** 180f **Hardness:** 75D **Viscosity:**100 cps

Model-Pro Slow a two component polyurethane casting resin which has a longer working time. Model-Pro Slow comes in either a 6 minute or 12 minute working time. This is an ideal resin for larger castings that require more time. Model-Pro Slow contains zero solvents making it virtually odorless and user friendly. Product uses include: Casting models, prototypes, figurines, making plastic reproductions, etc. This is an ideal casting resin for model makers, hobbyists, crafters, and taxidermists. Model-Pro turns from liquid to solid in 15 minutes and works excellent in silicone molds. Model-Pro Slow comes in off-white or black.

COLOR-PRO **Mix Ratio:** 1:1 by wt./vol. **Pot Life:** 2.5 min **De-mold:** 15 min **Heat Deflect:** 180f **Hardness:** 75D **Viscosity:** 150 cps

Color-Pro is a two component polyurethane casting resin which is semi-clear when cured, which makes adding pigments and dyes extremely easy. Color-Pro was designed to make bold colorful castings of models, prototypes, figurines, reproductions, etc. Color-Pro has low viscosity, good impact resistance, and strength. It contains zero solvents making it virtually odorless and user friendly. Product uses include: Casting models, prototypes, figurines, making reproductions, etc. This is ideal resin for model makers, hobbyists, crafters, and taxidermists. Color-Pro turns from liquid to solid in 15 minutes and works excellent in silicone molds.

FABRI-CAST 50 **Mix Ratio:** 1:1 by wt./vol. **Pot Life:** 2 min. **De-mold:** 15 min. **Heat Deflect:** 180f **Hardness:** 75-D **Viscosity:** 50 cps

Fabri-Cast 50 is a two component polyurethane casting resin which exhibits good impact resistance and strength. It has an ultra-low viscosity (50 cpds) making it extremely easy to mix and excellent air release properties. Fabri-Cast 50 when cured is a bright white and virtually bubble free. It contains zero solvents making it virtually odorless and user friendly. Product uses include: Casting models, prototypes, figurines, making reproductions, etc. This is ideal resin for model makers, hobbyists, crafters, and taxidermists. Fabri-Cast 50 turns from liquid to solid in 15 minutes and works excellent in silicone molds.

TOUGH-CAST 65D **Mix Ratio:** 1:1 by wt./vol. **Pot Life:** 2 min. **De-mold:** 15 min. **Heat Deflect.:** 180f **Hardness:** 65D **Viscosity:** 500 cps

Tough-Cast is a two component polyurethane casting resin which exhibits excellent impact resistance and strength. Tough-Cast has the look and feel of thermoplastic. It is designed for making prototype and limited run production parts. Tough-Cast contains zero solvents making it virtually odorless and user friendly. Product uses include: Casting models, prototypes, durable end use plastic parts, reproductions, etc. Tough-Cast turns from liquid to solid in 15 minutes and works excellent in silicone molds.

FLEX-IT 00 **Mix Ratio:** 1:1 by wt./vol. **Pot Life:** 30 min. **De-mold:** 24 Hour **Heat Deflect.:** 170f **Hardness:** 25-00 **Viscosity:** 500 cps.

Flex-It 00 is an extremely soft polyurethane resin used for casting cushioning, medical training replicas, shoe inserts, etc. It has excellent tear strength, elongation, tensile strength, and chemical resistance. (Hardness is comparable to human skin)

FLEX-IT 10 **Mix Ratio:** 1:1 by wt./vol. **Pot Life:** 30 min. **De-mold:** 24 Hour **Heat Deflect.:** 170f **Hardness:** 10-A **Viscosity:** 500 cps.

Flex-It 10 is a very flexible urethane resin used for casting flexible molds, seals, gaskets, models, prototypes, parts, etc. It has excellent tear strength, elongation, tensile strength, and chemical resistance. (Hardness is slightly softer than a rubber band)

FLEX-IT 40 **Mix Ratio:** 1:1 by wt./vol. **Pot Life:** 15 min. **De-mold:** 5 Hour **Heat Deflect.:** 170f **Hardness:** 40-A **Viscosity:** 600 cps.

Flex-It 40 is a flexible urethane resin used for casting flexible molds, seals, gaskets, models, prototypes, parts, etc. It has excellent tear strength, elongation, tensile strength, and chemical resistance. (Hardness is comparable to a pencil eraser)

FLEX-IT 70 **Mix Ratio:** 1:1 by wt./vol. **Pot Life:** 6 min. **De-mold:** 2 Hour **Heat Deflect.:** 170f **Hardness:** 70-A **Viscosity: 7**00 cps.

Flex-It 70 is a flexible urethane resin used for casting flexible molds, seals, gaskets, models, prototypes, parts, etc.. It has excellent tear strength, elongation, tensile strength, and chemical resistance. (Hardness is comparable to a car tire)

FLEX-IT 90 **Mix Ratio:** 1:1 by vol. **Pot Life:** 3 min. **De-mold:** 1.5 Hour **Heat Deflect:** 170f **Hardness:** 90A **Viscosity: 7**00 cps.

Flex-It 90 is a semi-rigid urethane resin used for casting abrasion resistant molds, seals, gaskets, models, prototypes, parts, rollers, etc. It is semi-rigid in mass castings and flexible in thin cross-sections. FLEX-IT 90 has excellent abrasion resistance, tear strength, tensile strength, and chemical resistance. (Hardness is comparable to tupperware)

EPOX-IT 80 **Mix Ratio:** 1:1 by vol. **Pot Life:** 45 min. **De-mold:** 24 Hour **Heat Deflect.:** 200f **Hardness:** 80D **Viscosity:** 2600 cps.

Epox-It 80 is a multi-purpose high gloss clear epoxy resin. It has an easy to use 1:1 mix ratio that can be hand mixed or used with automated dispensing equipment. Product uses include: coating bar tops, coating counters, encapsulation, fiberglass laminating, making clear models, prototypes, jewelry, figurines, etc. This is ideal resin for professional contractors, boat builders, DIY homeowners, model makers, hobbyists, crafters, and taxidermists. Note: Epox-It 80 will yellow in direct sunlight over time, but it does resist yellowing better than most other epoxies. The fact is that all epoxy resins will yellow over time in direct sunlight some are better than others. Direct sunlight should be avoided to prolong the clarity of the resin.

RTV Silicone Rubber

CAST-A-MOLD 25T Mix Ratio: 10:1 by wt.. **Pot Life:** 1 hour **De-mold Time:** 16 Hour **Heat Deflection.:** 300f **Tensile Strength psi:** 580 **Elongation % :** 380 **Tear Resistance ppi:** 150 **Color:** Green **Hardness:** A-25 **Viscosity:** 30,000 cps.

Cast-A-Mold 25T is a general purpose RTV silicone elastomer which exhibits excellent tear strength, long library life, and accurate detail reproduction. Cast-A-Mold 25T is a condensation cured silicone (tin catalyzed) It is used to make rubber molds that can be used to cast polyurethanes, epoxy's, polyester's, cement, concrete, soap, wax, plaster, etc.. It is easy to mix and de-air, and will cure at room temperature over virtually any surface. Cast-A-Mold 25T is extremely useful for applications where superior physical properties are required.

CAST-A-MOLD 30TF Mix Ratio: 10:1 by wt. **Pot Life:** 15 min. **De-mold Time:** 8 Hour **Heat Deflection.:** 300f **Tensile Strength psi:** 580 **Elongation % :** 370 **Tear Resistance ppi:** 115 **Color:** Blue **Hardness:** A-30 **Viscosity:** 30,000 cps.

Cast-A-Mold 30TF is faster and slightly harder than the Cast-A-Mold 25T. It is a general purpose RTV silicone elastomer which exhibits excellent tear strength, long library life, and accurate detail reproduction. Cast-A-Mold 30TF is a condensation cured silicone (tin catalyzed) It is used to make rubber molds that can be used to cast polyurethanes, epoxy's, polyester's, cement, concrete, soap, wax, plaster, etc.. It is easy to mix and de-air, and will cure at room temperature over virtually any surface. Cast-A-Mold 30TF is extremely useful for applications where superior physical properties are required.

MOLD-DOUGH 25P Mix Ratio: 1:1 by vol. **Pot Life:** 4 min. **De-mold Time:** 30 min. **Heat Deflection:** 400f **Tensile Strength psi:** >120 **Elongation % :** >270 **Tear Resistance ppi:** >30 **Color:** Pink **Hardness:** 25 A **Viscosity:** Putty

Mold-Dough 25P is a two component silicone putty that is easy to use, odorless, and non-toxic. It is ideal for a wide range of molding applications which include: making impressions, hobby/art projects, model-making, special effects, rapid prototyping, mold making, etc. Mold-Dough is very easy to use just take equal amounts of side "a" and side "b" and knead together until you get a uniformed color then press the object wanted molded into it. Mold-Dough has a 4 minute working time and 30 minute de-mold time. This is ideal for professional model makers, hobbyists, crafters, and taxidermists. Mold-Dough works excellent with polyurethane, epoxy, and polyester casting resins.

Accessories

- **Pigments:** We carry a full line of pigments designed for use in our polyurethane resins.
- **Release Agents:** Designed for releasing both silicone and polyurethane resins.
- **Misc.** Modeling Clay, Gloves, Fillers, Scales, Mixing Cups, Stir Sticks, Thickening Agents, Thinners, Etc.

How much material do I need?

To estimate the total number of pounds of the material to mix for a given project, first measure the pattern to determine the volume to be cast in terms of cubic inches.

1. Choose a material suitable for your application and find how many cubic inches are in 1 pound of that material.
2. Since one pound of Model-Pro yields about 26.0 cubic inches, simply divide the total volume to be cast by 26.0 cubic inches. The number resulting from the division will be the pounds of mixed parts "A" and "B" required.

Example: To find the pounds required for a mold measuring 10 * 10 * 1 Multiply and divide as follows: 10 * 10 * 1 / 26.0 = 3.84 lbs. Therefore: Use 2.0# of part "A" and 2.0# of part "B". Always mix a fraction more than required to compensate for losses.

MATERIAL CHART (CUBIC INCHES PER POUND)

Model-Pro = 26.0 Model-Pro Slow = 26.0 Color-Pro = 26.0 Fabri-Cast 50 = 26.0 Tough-Cast 60 = 26.0

Flex-It 10 = 27.0 Flex-It 40 = 26.0 Flex-It 50 = 26.0 Flex-It 70 = 26.0 FLEX-It 90 = 26.0 Cast-A-Mold = 23.0

Weight Formula	Viscosity Comparison Chart	Hardness Comparison Chart
1 ounce = 28.350 grams	Water 1 cps	Human Skin = 20-00
1 pound = 16 ounces	SAE 10 Motor Oil 85-140 cps	Rubber Band = 20-A
1 pound = 453.592 grams	SAE 20 Motor Oil 140-420 cps	Pencil Eraser = 40-A
1 milligram = 0.001 grams	SAE 40 Motor Oil 650-900 cps	Rubber Stamp = 50-A
1 kilogram = 1000 grams	SAE 60 Motor Oil 1000 cps	Car Tire = 70-A
1 kilogram = 2.2 pounds	Chocolate Syrup 25,000 cps	Tupperware = 90-A
1 ton = 2000 pounds	Ketchup 50,000 cps	Wooden Ruler 70-D

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