Specialty Resins
55 Hilton Street, Easton PA 18042
Phone: (269) 462-9256
website: www.specialtyresin.com

TECHNICAL DATA SHEET

FLEX-IT 90

Flex-It 90 is a semi-rigid urethane casting resin designed 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 has good chemical resistance.

PRODUCT SPECIFICATIONS	
Mix Ratio	1:1 by weight or volume
Mixed Viscosity	1600 cps
Working Time	3.0 minutes
Demold Time	1.5 hours
Heat Deflection	170°F
Shrinkage	.001
Color	Semi-clear
Hardness	90-A
Full Cure Time	3 days
Tensile Strength	1332
Elongation Strength	250
Tear Strength	195
Shelf Life	6 months

BEFORE USE: Thoroughly read Safety Data Sheets, product labels and the "SAFETY" section in this Technical Data Sheet.

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IMPORTANT: PLEASE NOTE

- This product can be mixed with pigment powders and liquid dyes to achieve your desired color. Do not mix any oil or water-based products with the resin. When in doubt, test a sample batch to ensure you can achieve your desired color without issues.
- Storing unused product– Unmixed resin & hardener have a long shelf life of 6 months. Store in original containers in a cool, dry place.

BEFORE YOU BEGIN

Work Environment: The ideal working temperature is around 65-75°F in a clean, dry, dust-free environment. Avoid working in high humidity. If you are pouring in large volumes of 2 or more gallons, we suggest keeping room temperature closer to 65°F. We highly recommend keeping fans on your project to help dissipate heat.

Materials: Be prepared with all necessary materials and tools before beginning your project. These items might include (but are not limited to) two-part resin kit (Parts A and B), graduated mixing containers, clean stir sticks or power mixer, gloves, drop cloth, casting molds, etc.

LET'S GET STARTED: MIXING & POURING

Completely Mix Individual & Combined 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: 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. Gently wipe out or blow out any excess release. 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.
Tips & Tricks

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After pouring the material into the mold you can rotate or gently tap/squeeze the mold to help move material into deep undercuts and remove trapped in air. You can lightly dust your mold with talc/baby powder which will help reduce surface tension between the mold and part, improve paintability, and reduce trapped in air. Warming your mold in a oven or with a hair dryer @ 120 f before casting will shorten the de-mold time and improve part quality, especially when casting thin parts. Polyurethane resins are moisture sensitive, making sure all equipment/tools are completely dry and closing caps immediately after use will eliminate the chance of moisture contamination. The resin and molds will need to be at room temperature (Min. 70f) before casting to assure proper cure.

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 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 65D = 26.0 Flex-It 20 = 27.0 Flex-It 40 = 26.0 Flex-It 50 = 26.0 Flex-It 70 = 26.0 FLEX-IT 80 = 26.0 FLEX-It 90 = 26.0 Cast-A-Mold = 23.0

CLEAN UP & DISPOSAL

Tools can be cleaned with Isopropyl Alcohol or a residue-free cleaner. Do not use soap and water.

Dispose of product and container according to Federal, State and local regulations. Store any remaining product in the original bottles, tightly sealed and locked up in a cool, dry environment.

SAFETY

Safety: Before use, thoroughly read Safety Data Sheets and product labels. Follow safety precautions and directions.

Resin: Keep out of reach of children. Avoid breathing vapors. Use with adequate general or local exhaust ventilation to minimize exposure levels. If needed, a NIOSH-approved respirator with organic vapor cartridge may be used. If inhaled, remove victim to fresh air and keep at rest in a position comfortable for breathing. Wear impervious gloves, such as butyl rubber or nitrile rubber. Wash skin thoroughly with soap and water after handling. Take off contaminated clothing and wash it before reuse. If skin irritation occurs, get medical help. Wear eye protection, such as chemical safety glasses/googles. If in eyes, rinse cautiously with water for several minutes, removing contact lenses if present and easy to do. If eye irritation persists, get medical help.

Hardener: Keep out of reach of children. Do not eat, drink, or smoke when using this product. If swallowed, rinse mouth and get medical help. Use with adequate general or local exhaust ventilation to minimize exposure levels. If needed, a NIOSH-approved respirator with organic vapor cartridge may be used. If inhaled, remove victim to fresh air and keep at rest in a position comfortable for breathing.

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WARNING: THE CURE REACTION IS EXOTHERMIC. Do not apply in thicknesses greater than the recommended maximum application thickness for the product.

DISCLAIMER: The information contained herein is considered accurate; however, Specialty Resins makes no warranty regarding its accuracy. The user must determine the suitability of the product for the intended use and accepts all risk and liability associated with that use.