

PARTS IZ PARTS - A Guide To Casting Your Own Parts

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FOLLOW ALL INSTRUCTIONS AND SAFETY PRECAUTIONS SUPPLIED WITH MATERIALS!!!!

MATERIALS

- 1) Silicon Rubber – 2 part or 10:1 types – preferences for types with good under cut capability
- 2) Urethane Rubber – 2 part – Used for plaster casting molds (Not compatible with Urethane Casting Plastic).
- 3) Urethane Casting Plastic – used for making parts with silicon rubber. Not compatible with urethane mold rubber.
- 4) Pigments for coloring the finished product.
- 5) Alginate – the stuff your dentist uses. Once set, it remembers its shape after removing from a compound master – mixed with water 3:1.
- 6) Silicon oil – used for dilution of silicon rubber.
- 7) Vacuum source – device from Harbor Freight works on shop air. Build vacuum chamber from sewer pipe.

TECHNIQUES

- 1) Pattern Making and Preparation – silicon rubber will creep – fill all voids
- 2) Mold making – styrene plastic boxes. Flat items ¼” – in-depth items ¼” rubber left on bottom, 3/8” on sides. Mold material must be carefully measured and mixed and evacuated. The rubber is viscous and takes a little bit of effort to mix. (approx. 5 minutes) “Pot Life” is about two hours. Curing time until the mold can be removed from the master in approx. 8 hours; 12-16 is better.
- 3) Urethane Part Casting - injection and “wetting” application – mold cover for smooth back. Bubble avoidance is important. Move it – you have less than two minutes before it starts to gel.

SOURCES

- 1) John Greer, San Diego <http://www.jgreer.com/silicone-mold-making.htm> Good source for Silicone RTV rubber. Urethane casting resin and more. Good instruction on the web. Silicon oil – used for dilution of silicon rubber.
- 2) R. B. Freeman <http://www.miapoxy.com/> –they have a neat DVD that teaches the casting process and is full of ideas. It is usually listed on eBay for \$8.95 and they have web site where you can buy directly. Higher priced than US composites.
- 3) EFD Dispensing Supplies <http://www.nordson.com/en-us/divisions/efd/pages/default.aspx> - represented by J. A. Crawford in So. California. Source for small dispensing syringes and tips.
- 4) Micro Mark – www.micromark.com - \$59.95 kit (The idiots guide to resin casting) – rubber, casting plastic, release agent, and mixing supplies - good for approx. 30 copies. Rubber is soft and pliable but rates only fair for long term storage. Silicon rubber and casting resin is easily mixed with two equal parts of material. Silicon rubber components must be stirred prior to measuring out a quantity for use.
- 5) Shopman – www.shopman.com – 70-25 silicon rubber (Shore 25), urethane rubber, urethane resins, alginate, and pigments and other supplies. . Must be mixed according to weight 10:1 accurately (needs an accurate scale). If you're a boat builder, this is a source of Epoxy resins too. E-Z Flo, their brand of urethane casting resin is my choice. All of their products are available on the web. Alginate – the stuff your dentist uses. Once set, it remembers its shape after removing from a compound master – mixed with water 3:1. Pigments for coloring the finished product.
- 6) Dispensing mixers <http://www.mcmaster.com/#adhesive-mixing-nozzles/=779ff3> - source for continuous mixing applicators.
MCMaster-CARR®
9630 Norwalk Blvd
Santa Fe Springs CA 90670-2932
562-692-5911
la.sales@rncmaster.com McMaster-Carr Nurnber
2233908-01
Description
74695A25 Twist-Lock Mixer Nozzle, 6.1' L, 1/4" Taper Tip

74695A11 Empty Twist-Lock Duo-Pak Cartridge, 50 ml, Packs

74695A27 Polypropylene Hand Plunger for 50-ml Cartridge

74695A71 Dispensing Gun

- 7) Harbor Freight and Tool – www.harborfreight.com – Vacuum adapter for shop air. A \$44.95 or vacuum pump <\$99.00, 8" drill press (usually on sale) and that \$350.00 lathe on your Christmas list. Electronic scales.