

# Douglas and Sturges, Inc.

## SCULPTURE TOOLS, MATERIALS AND SUPPLIES

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### Insta-Cast

**Description:** Insta-Cast is a two component, rigid, rapid set polyurethane resin that when mixed in a one to one ratio by volume sets in five to seven minutes to form a hard durable plastic. It is a low viscosity material that is well suited for a wide variety of applications. Various fillers when used properly may be used to modify Insta-Cast to give a variety of properties to the finished casting as well as reduce cost.

**General Instructions:** Insta-Cast is formulated to be used one to one by volume but will tolerate errors of from five to ten percent without noticeable degradation of the finished product. It is best used when ambient temperature is above 70 degrees F, but will work at temperatures above or below this. Warmer temperatures will hasten setting time while cooler temperatures will lengthen the setting time. It is not recommended that Insta-Cast be used at temperatures below 50 degrees F. If the "A" component temperature drops to 50 degrees or below, the material will be rendered unusable. However if the material is heated to 70 degrees or higher, and agitated, it will be made usable once again. It is not recommended that Insta-Cast be used at 90 degrees F or above.

Insta-Cast components are easily blended with a minimum of effort. Small batches may be mixed by hand by simply using a flat stick or spatula. Larger batches may be mixed by using an electric drill with a mixing blade attached. When the "A" and "B" components are measured and poured together, it is only necessary to mix the two components for approximately 15 to 30 seconds before pouring into your mold. It is generally recommended that the "B" component be added to the "A" component to give best results. In most cases air entrapment is not a problem when pouring Insta-Cast because of the low viscosity of the material.

Insta-Cast materials are hygroscopic, which means simply that they have a tendency to absorb moisture. It is imperative that your containers be kept tightly closed when not in use and we recommend that an inert, dry gas such as nitrogen, "Burp" or "Extend It" be blown into each container before closing for any length of time.

**Mold Materials:** The best flexible mold material to use for casting Insta-Cast is silicone RTV. We recommend Douglas and Sturges' SR-1621, which is a soft, durable rubber which will give the most reproductions when cared for properly. Other flexible mold materials such as polyurethane will work on a limited basis and are recommended for limited applications only. By using a barrier coat (which is simply an alcohol based lacquer) in your mold, maximum mold life can be expected from whichever mold material you choose. Rigid molds made of polyethylene or polypropylene do not need a mold release in most cases, and metal or fiberglass molds should be coated with a wax release agent.

**Mold Release Agents:** The following is a chart giving a variety of release agents that are readily available at Douglas and Sturges and have been found to work for Insta-Cast. By no means is this list complete and in some cases there may be other release agents that work better than the ones recommended, but we know these work.

Mold Material	Mold Release
Silicone RTV	1. Universal Release@ 2. Teflon* plus silicone spray 3. Barrier Coat 4. RA-7310 Release Wax
Polyurethane RTV	1. Universal Release@ 2. Teflon* plus silicone spray 3. Barrier Coat 4. RA-7310 Release Wax
Metal	1. RA-7310 Release Wax 2. Johnson's Paste Wax 3. P.V.A. Release film plus paste wax
Fiberglass	1. RA-7310 Release Wax 2. P.V.A. Release film plus paste wax
Polyethylene or Polypropylene	1. Nothing 2. Johnson's Paste Wax 3. RA--7310 Release Wax

Again, this is a partial list and we know other agents will work in many cases, but when in doubt, TRY IT OUT! Also when using silicone oil type release agents, in most cases they must be washed off the cast part before that part can be painted. (VM&P Naphtha makes a good cleaner for this purpose) It is recommended that the Insta-Cast part be painted. To do this use a solvent such as VM&P Naphtha or mineral spirits, or a solution of TSP. Also simply putting the parts into a dishwasher and using

a detergent such as Cascade will do a good job of removing a silicone type release agent. Also parts should be removed from your mold as soon as they are set. The longer a part remains in a mold, the more it has a tendency to stick.

**Fillers:** A limited number of fillers can be used with Insta-Cast. They can serve to decrease cost, increase or decrease weight, and reduce shrinkage. In any event, all fillers employed must be DRY. Sawdust or nut shell flours are not recommended because they contain moisture. (Although we have found by adding wood flours and nut shell flours to Insta Cast a relatively high density urethane foam can be created. This may be useful as a light weight filler material where surface detail is not particularly important.) Most other types of fillers can be employed as long as they are dry. When in doubt, try it out. The telltale sign that there is moisture present is when the casting is curing, it will rise slightly from moisture contamination, or the casting will be filled with lots of pinholes. To insure that a filler is dry, it can be dried in a conventional oven. Simply place the filler on a cookie sheet, spread evenly and heat to 250 degrees F for 15-20 minutes allowing to cool before adding to Insta-Cast. We suggest you add filler to both "A" and "B" components before blending.

"The information and data contained herein are based on information we believe reliable. Each user of the material should test any application and independently conclude satisfactory performance before commercializing."

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