



THE COMPLEAT SCULPTOR

90 Vandam Street New York NY 10013

212-243-6074 TCS@SCULPT.com

800-9-SCULPT www.SCULPT.com

Technical Information Sheet - Poly 15 Series Liquid Plastics Pourable Polyurethane Casting Resins

DESCRIPTION: Poly 15 Series Liquid Plastics are excellent for casting decorative objects, production parts, tools, models, patterns, fixtures, duplicate masters and more. Poly 15-6 and 1512 Plastics have the feel and density of wood or thermoplastics. Poly 15-3 Plastics resemble stone. For applications requiring waterclear, non-yellowing plastics, consider Poly-Optic® products.

MOLD PREPARATION: These products reproduce minute detail from a mold or pattern but may stick or foam when poured on improperly prepared surfaces. A trial casting on a surface finish similar to the final mold should be made to avoid damaging a valuable mold. Polyethylene and silicone rubber molds, such as TinSil® 70 and PlatSil® 71 and 73 Series, do not require a release agent, but a barrier coat may be helpful. Latex, polyurethane rubber or metal molds must be dry and require a coat of a suitable release agent (i.e., Pol-Ease® 2300). Poly 74 Series polyurethane mold rubbers are a good choice.

MIXING: Prior to mixing Parts A and B, have all molds and equipment ready. Parts A and B should be above 60°F and stirred thoroughly, if needed, prior to use. Over time, sediment may accumulate on the container bottoms of some 15 Series products.

Normally, gentle mixing is all that is required to disperse the sediment. Use metal or plastic mixing vessels and spatulas to avoid introducing moisture (i.e., with paper or wood tools). Measure or weigh Parts A and B into a mixing container, such as a polyethylene pail. Mix immediately, thoroughly scraping sides and bottom for one minute. Pour mix into cavity as quickly as possible. Once the containers of Parts A and B are opened, they should be used or resealed tightly since atmospheric

- Easy 1:1 mix formulations
- Reproduces fine detail
 - Can be machined, drilled, sanded
 - Tough, hard, but not brittle
 - Low shrinkage upon cure
 - Air bubbles rise and break
 - Long working time or instant set with 15X
 - Low odor formula
 - Castable in large masses

moisture contamination may cause foaming of the plastic. A dry gas product, can be sprayed into opened containers of Poly Plastics to displace moist air before resealing containers to extend shelf life.

CURING: Castings should be allowed to remain in the mold until thoroughly cured. Parts demolded too soon may be subject to deformation. Use of pre-warmed molds will hasten curing. Low temperatures will slow the curing and extend demold time.

ADDITIVES: Part 15X Catalyst is a powerful catalyst to increase the speed of curing. Part X should be stirred into the Part B before adding Part A. A few drops in a one-pound mix speeds the cure significantly. Exotherm

(heat of reaction) and thus shrinkage is increased. Experiment to determine the best amount of Part X to use but never use more than 1% Part X of the total weight of the mix or the final physical properties may be affected. Poly Fiber can be added to thicken the mix to a paste-like consistency. Microbulb Filler can be added to create a wood-like, lower density material. Bronze powder, calcium carbonate or other dry fillers can be added as desired. Fillers should be added after A and B are mixed. It is imperative that any filler be thoroughly dried before mixing with resin.

COLORS: Add Urethane Specific Colors to 15 Series Part B before mixing with Part A to create plastics of any color.

FINISHING: Poly 15 Series Plastics yellow and chalk when exposed to sunlight and should be painted or sealed for exterior use. They can be easily drilled, sanded and machined. If they are to be painted or coated, adhesion of the coating should be checked carefully over a period of time to determine that it is satisfactory for the intended use. If all mold release is removed by detergent washing, most oil paints work well.

CLEAN UP: Tools should be scraped clean before the plastic is hard. Denatured alcohol is a good cleaning solvent, but must be handled with extreme caution owing to its flammability and health hazards. Work surfaces can be waxed or coated with Pol-Ease 2300 Release Agent so hardened resin can be removed.

SAFETY: Before use, read product labels and Material Safety Data Sheets. Follow safety precautions and directions. Contact with uncured

products may cause eye, skin and respiratory irritation and dermal and/or respiratory sensitization. Avoid contact with skin and eyes. If skin contact occurs, remove with waterless hand cleaner or alcohol then soap and water. In case of eye contact, flush with water for 15 minutes and call physician. Use only with adequate ventilation. Polytek plastics are not to be used where food or body contact may occur. Plastics burn readily when ignited. Care should be taken with sanding dust and other easily ignitable forms of these products.

STORAGE LIFE: At least six months in unopened containers stored at room temperature (60-90°F).

DISCLAIMER: The information in this bulletin and otherwise provided by Polytek® is considered accurate. However, no warranty is expressed or implied regarding the accuracy of the data, the results to be obtained by the use thereof, or that any such use will not infringe any patent. Before using, the user shall determine the suitability of the product for the intended use and user assumes all risk and liability whatsoever in connection therewith.

Physical Properties	15-3	15-6	1512
Mix Ratio (by weight)	1A:1B	1A:1B	1A:1B
Hardness, Shore D	80	72	71
Pour Time, 1-lb	15	5	22
Max Exotherm, 1-lb mass	122°F (50°C)	203°F(95°C)	251°F (122°C)
Demold Time (hr)	12	1-3	1-16
Specific Gravity	1.53	1.08	1.10
Color, Cured	Tan	Tan	White
Viscosity, 2-min after mix (cP)	2,000	800	400
Specific Volume (in ³ /lb)	18	26	25.1
Shrinkage Upon Cure (in/in)	0.0002*	0.003*	Very Low*

- Shrinkage is primarily caused by gelling while hot then cooling. Parts that cure with minimal temperature rise will exhibit minimal shrinkage.

Technical Support Hotline: (212) 367-7561
www.SCULPT.com