



I S O T E C

Isotec International, Inc.

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# IsoCast Urethane Resins

## INTRODUCTION AND HOW TO USE

ISOCAST IS A ROOM TEMPERATURE CURED PRODUCT (72°F-75°F). It is a two-component liquid urethane casting system designed for use by art schools, sculptors, wood carvers, pattern makers, taxidermists and others. Blended in a one-to-one ratio by volume, it requires no weighing to provide castings of superior quality and high fidelity. The IsoCast System is blended on a one-to-one ratio by volume to ensure ease of use. This means you mix one cup of Side "A" to one cup of Side "B". No weighing!! The elimination of the need for accurate weighing removes the possibility of error that can result in the loss of materials, castings and molds.

The IsoCast System can be hand mixed.

- 1) Ensure Mold is clean and ready. Apply mold release/wax as needed.
- 2) Just dispense equal amounts of POL and ISO into separate clean plastic containers.
- 3) If using filler (See Below) add ½ the total volume of filler to each container (POL & ISO). Premix the filler into POL and ISO prior to mixing the two sides together.
- 4) Now pour the POL and ISO together into a third clean plastic container and mix together for 15-30 seconds. For small amounts you can use a dry wood or metal spatula. For larger amounts use a jiffy mixer in a small hand drill. When mixing avoid air bubbles!! Mix for 15-30 seconds, ensuring the sides and bottom are scraped.
- 5) Pour immediately into a rigid or flexible mold that will not leak.
- 6) After pouring, do not disturb the resin after it starts to gel. Demold time can be from 8 to 45+ minutes depending on exact resin used, volume, mold type and room/cure temperature. Placing parts in a warmer area can decrease demold time.

The addition of the filler can increase or decrease the weight of the finished as well as affect its final properties and strength. It can also reduce the cost of the system and increase the volume. You may adjust the amount of filler to achieve different results in your castings or leave the filler out completely.

We suggest that you try a test casting in small quantities to familiarize yourself with gel times and other procedures. Note: The resin gel time and the demold time can be doubled if the resin temperature is lowered to about 40°F but must be stirred prior to using.

It is important to use eye protection when mixing and pouring. Be sure ventilation is adequate to remove fumes from the casting area. After the part has been demolded you may want to leave it overnight before continuing. The part can be used within one hour but the ultimate and complete cure occurs in 36 hours.

IsoCast materials can be sanded, cut, drilled, or bonded. It can be stained or painted if the surface has been prepared by degreasing or removing any remaining oil, grease, dirt or release agents.

### FILLERS

Fillers compatible with IsoCast Urethane Resins include;

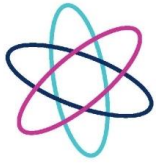
Fumed Silicas (Aerosil, Cabosil, etc): Used for thickening, lowering weight. Typical use is 1/8 – 1x Total Resin Volume

Calcium Carbonate (Marble Dust): Inexpensive filler used for lowering cost, increasing weight. 1/8 – ½ Total Resin Volume

Micro Bulbs (glass bulbs): Used for reducing weight, lowering density. 1/8 – 1/2 Total Resin Volume

Additional fillers include; pigment powders, ceramic beads, aluminum hydroxide, glass fibers, rubber particles, fire retardants

*"The Chemistry Behind Performance"™*



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### **MOISTURE CONTAMINATION**

IsoCast, like all urethane systems, is very sensitive to moisture!! It will react to moisture to form carbon dioxide gas which, on expansion, causes the resin to foam at point of contact with the moist area. IsoCast is a balanced formula and requires equal parts of curative and polyol. If a portion of the ISO reacts with moisture, it is not available to combine with the POL, resulting in uncured castings.

Precautions should be taken to avoid contamination of IsoCast. Do not open the containers other than to pour the resins into your mixing containers. Reseal the resin containers immediately after using!! The opening and closing of the resin containers in areas of high humidity may contaminate IsoCast.

### **RELEASE AGENTS**

If your molds require release agents, a release agent should be used that can be applied in a thin film so as to not destroy the integrity of the surface to be reproduced. IsoCast will reproduce the finest details contained in the mold. If the release agent is applied in thick uneven layers with visible application lines or marks, they will be reproduced in the casting. We recommend that you test any release agent you select for compatibility with IsoCast and its releasing ability with your molding material.

### **BE SURE TO READ THE MATERIAL SAFETY DATA SHEET ENCLOSED WITH YOUR PRODUCT**

#### **CAUTION**

IsoCast contains polymeric isocyanates and polyether resins which may cause irritation to the eyes, skin, or upper respiratory tract. Always maintain proper ventilation in the work area. Wear protective clothing and safety glasses when mixing, pouring, or cutting the material. Should irritation occur, stop working with the material immediately. For eye contact, flush eyes with water, wash skin with soap and water and seek medical attention. Workers who are allergic to urethane resins should not work with this material without using a full face, pressure demand respirator. This material can burn!!! After cutting or machining this material, dispose of all shavings in a fire safe metal container.

### **WARRANTY**

No warranty of IsoCast is expressed or implied. The user assumes all responsibility for its use and the suitability of the product for whatever application is intended.

The conditions for your use and application of our products, technical assistance and information (whether verbal, written or by way of production evaluations), including any suggested formulations and recommendations, are beyond our control. Therefore, it is imperative that you test our products, technical assistance and information to determine to your own satisfaction whether they are suitable for your intended uses and applications. This application-specific analysis at least must include testing to determine suitability from a technical as well as health, safety, and environmental standpoint. Such testing has not necessarily been done by Isotec. All information is given without warranty or guarantee. It is expressly understood and agreed that customer assumes and hereby expressly releases Isotec from all liability, in tort, contract or otherwise, incurred in connection with the use of our products, technical assistance and information. Any statement or recommendation not contained herein is unauthorized and shall not bind Isotec. Nothing herein shall be construed as a recommendation to use any product in conflict with patents covering any material or its use. No license is implied or in fact granted under the claims of any patent. Isotec, IsoCast<sup>®</sup>, Updated March 2015

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