

AQUACLEAR™ RESIN

Two-Part, Optically Clear, Non Yellowing Polyurethane Resin

DESCRIPTION: AquaClear is an optically clear polyurethane casting resin used where a hard, UV resistant, non-yellowing product is required. AquaClear is often used to encapsulate objects. Some of the most common uses of AquaClear Resin are point-of-purchase displays, rapid prototypes, special effects, sculpture reproductions, giftware, etc.

MODEL PREPARATION: AquaClear Resin is a two-part polyurethane casting system. AquaClear is mixed one-to-one by volume and cures at room temperature. Cured Clear AquaClear is UV resistant and non-yellowing. To preserve the surface clarity of AquaClear, we recommend that you use a platinum-cure or condensation-cure silicone mold material.

AquaClear provides a combination of performance properties including optical clarity, mechanical strength, hydrolysis resistance, gloss retention, and yellowing resistance. Each user must individually determine the suitability of this product for the process intended; furthermore, the conditions under which parts are made must also be taken into consideration.

MAKING THE MOLD: AquaClear provides approximately 15 minutes for you to mix and pour the casting before it begins to gel.

Using two clean, dry, plastic containers of equal size, measure equal amounts of the curative (part A) and the prepolymer (part B). Do not measure more KastEZ than you can pour within its 15 minutes pot life. If you have a large mold that requires more AquaClear than you can pour in 15 minutes, you may use a rotational casting method or pour AquaClear more than once.

After you prepare the mold and measure the curative and prepolymer, you are ready to pour the curative and prepolymer into another clean, dry, plastic container. Combine the two ingredients for approximately 45 seconds, being careful to prevent air bubbles from forming. Use a plastic or metal utensil to mix AquaClear. You can use a vacuum chamber to help remove any air bubbles that form during mixing.

POUR CASTING: Once you mix the curative and prepolymer, you have approximately 15 minutes to pour the casting.

You should take your time to carefully pour it into the mold. The best way to pour a casting with AquaClear is to tilt your mold slightly and pour into one spot of the mold.

Pour slowly so that any air bubbles that may have formed during mixing can break over the lip of the container as it pours out. When you have finished pouring your casting, you may tap the sides of the mold or vibrate the mold to help release additional air bubbles.

FEATURES

- Optically Clear
- Non Yellowing, UV Resistant
- High Detail
- Scratch Resistant
- 1-to-1 Mix Means No Weighing
- May Be Used for Cold Casting
- Low Shrinkage

DEMOLDING: Once you have poured your casting, do not disturb the mold or demold the casting for 24 hours. Although you may work with your cast immediately after demolding, for best results we strongly recommend that you post cure your cast for 6 hours at 160°F (72°C). The post cure improves the heat distortion temperature as well as numerous other properties of the material.

STORAGE: Keep the AquaClear containers tightly closed when not in use and store at temperatures between 50–77° F (10–25° C). Do not expose the curative or prepolymer to moisture! If moisture contaminates AquaClear, it will not cure. If these storage requirements are met, AquaClear carries a shelf life warranty of six months.

SAFETY: Be sure to read the *Material Safety Data Sheet* that comes with AquaClear. When working with AquaClear please observe the following safety precautions.

- Use only in well-ventilated areas.
- Wear chemically resistant rubber gloves, safety glasses, and an apron.
- Avoid prolonged or repeated contact with skin.
- In case of skin contact, wipe affected area with isopropyl alcohol, followed by soap and water.
- In case of eye contact, flush eyes with water for 15 minutes and consult a physician.
- If swallowed or comes into contact with eyes, seek medical attention immediately.

DISCLAIMER: The information in this bulletin and otherwise provided by ArtMolds is considered accurate. However, no warranty is expressed or implied regarding the accuracy of this date, the results to be obtained by the use thereof, or that any such use will not infringe any patent. The user assumes all risk and liability whatsoever in connection therewith.

AQUACLEAR RESIN — Cont'd

Curative (Part A) and Prepolymer (Part B)

The following table lists the properties of the curative and prepolymer before they have been mixed.

Property Curative	Curative (Part A)	Prepolymer (Part B)
Color	Clear	Clear
Mix Ratio by Weight	1	1.04
Mix Ratio by Volume	1	1
Shelf Life	6 Months	6 Months
Specific Gravity @ 75°F (24°C)	1.03	1.07
Viscosity @ 75°F (24°C), CPS	600	100

Mixed Curative (Part A) and Prepolymer (Part B)

The following is a summary of the properties of AquaClear after the curative and prepolymer have been mixed

Property Curative	Time	Temperature
Mix Time	45 Seconds	75° F (24° C)
Pot Life	15 Minutes	75° F (24° C)
Gel Time	20 Minutes	75° F (24° C)
Cure Time	8 Hours	75° F (24° C)
Demold Time	24 Hours	75° F (24° C)

*Pot life, gel time, cure time, and demold time vary depending on mass, mold temperature, and component temperature.

Cured AquaClear

The following table lists the properties of KastEZ after it has cured.

Property	Cured Product	Property	Cured Product
Color	Clear	Elongation, ASTM D412-80, %	<10
Heat Distortion Temperature, ASTM D648	137° F (58° C)	Rebound, Bashore, ASTM D2632-74 %	18
Elongation, ASTM D412-80 %	15	Reversion Temperature	270° F (132° C)
Tear, Die C, ASTM D624-73, PLI	836	Tear, Split, ASTM D470-71, PLI	81
Shore Hardness, ASTM D2240-75	D84±2	Specific Gravity, ASTM D792-66	1.05
Linear Shrinkage, ASTM 2566, in/in	.0015	1 Ultimate Tensile, ASTM D412-80, psi	4700

*Post curing at 160°F (72°C) for 6 hours increases the heat distortion temperature up to 30%.