

# Technical Data Sheet

## ALCHEMIX<sup>®</sup> VC 3397

*Two Part Polyurethane Vacuum Casting System  
Water Clear*

ALCHEMIX VC 3397 is a two component polyurethane vacuum casting resin designed to simulate thermoplastics such as shock resistant PMMA and ABS. The system is specifically designed for use in gravity vacuum casting machines. This product does not contain toxic aliphatic isocyanates or mercury catalysts.

### Special Features

- Optically clear
- Non toxic
- Low viscosity
- Rapid demould
- No need to preheat resin or hardener

### Mix Ratio

**VC 3397A : VC 3397B**  
By Weight 100 : 150

### Product Data

Property	Units	VC 3397A	VC 3397B	Mix
Material	-	Polyol	Isocyanate	Polyurethane
Appearance	-	Clear liquid	Clear / straw coloured liquid	Clear / straw coloured liquid
Viscosity (25°C)	mPa.s	300 – 500	825 – 1025	600 – 850
Density (25°C)	g/cm <sup>3</sup>	1.02 – 1.07	1.18 – 1.23	1.10 – 1.15
Pot life (200g, 25°C)	Minutes	-	-	7 – 10
Demould Time (70°C)	Minutes	-	-	45 – 60 (depending on thickness)
Maximum Casting Thickness	mm	-	-	15

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## Cured Properties

Properties	Standard	Units	Result (Full Cure)
Hardness	BS EN ISO 868	Shore D	82 – 87
Linear Shrinkage	500 x 50 x10 mm	%	0.20 – 0.40
Tensile Strength	BS EN ISO 527	MPa	70 – 80
Elongation at Break	BS EN ISO 527	%	9.0 – 11.0
Flexural Strength	BS EN ISO 178	MPa	90 – 110
Flexural Modulus	BS EN ISO 178	MPa	2200 – 2500
Heat Distortion Temperature	TMA	°C	68 – 72

## Mould Preparation

Carefully clean the mould, then spray silicone release agent onto the surface. Ensure that the surface is dry before coupling the mould parts. Heat the mould in an oven to 60 – 70°C; this may take several hours if the mould is very large. Splitting the tool will speed up the warming process. We do not recommend the use of condensation cured silicone rubber with this product. For best results, use ALCHEMIX RTV 250 silicone rubber.

## Resin Preparation

Open both A and B containers and examine for any signs of crystallization, place in the oven at 45 – 60°C if any crystals are observed, cool to room temperature before use. Both components should be heated to **20 – 25°C** before use. If using pigments, add the pigment to the part A. We suggest using 1 – 3% pigment.

## Mixing/casting

Weigh ALCHEMIX VC 3397A into cup A and ALCHEMIX VC 3397B into cup B. When making the first mix allow an additional amount of A to account for the cup loss. Degas for 5 – 7 minutes, whilst slowly mixing cup B. After degassing, pour cup A into cup B while mixing. Mix the A and B components for 60 seconds, this will ensure thorough mixing of the components. When mixing is complete pour the mixed material into the mould. When material can be seen exiting from the risers break the vacuum.

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## **Curing**

Place the mould in an oven at 70°C for 45 – 60 minutes immediately after casting. Curing time, especially in thin sections, will depend on mould temperature. The warmer the mould, the quicker the cure. We do not recommend this resin to be cast to more than 15 mm depth.

## **Storage**

ALCHEMIX VC 3397A and B should be stored in original, unopened containers between 20 and 25°C. ALCHEMIX VC 3397B may crystallize partially or completely if not stored at above 20°C. Like all polyurethanes, both components are moisture sensitive. Moisture absorption will cause excessive aeration in cast parts. KEEP THE PACKING TIGHTLY SEALED WHEN NOT IN USE.

If stored under the above conditions, ALCHEMIX VC 3397A and B will have a shelf life of 6 months, from the date of production.

## **Packaging**

VC 3397A is supplied in 670g and 3.335kg containers.  
VC 3397B is supplied in 1kg and 5 kg containers.

## **Further Information**

All data listed relates to typical values. This data should not be considered a product specification.

Our technical advice, whether verbal, or in writing is given in good faith, but without warranty – this also applies where proprietary rights of third parties are involved. It does not release you from the obligation to test the products supplied by us as to their suitability for the intended process and use.

Before using this product users should familiarize themselves with the relevant MSDS provided by Alchemie Ltd.

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## Alchemie Limited

Alchemie Ltd develop, formulate and distribute Epoxy Resins, Polyurethane Resins, Silicones, Model Boards and Sheet Wax for use in the following applications:

- Electrical encapsulation
- Rapid Prototyping
- Prototypes
- Casting
- Gel Coating
- Laminating
- Model Making
- Master Models
- Flexible and rigid mould making

We offer fast service, technical support, development expertise, innovative products, diverse knowledge and experience.

We are a well-established company, with a high level of investment and experience. We implement BS EN ISO 9001.

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