

# Technical Data Sheet

## ALCHEMIX® VC 3361

*Two Part Polyurethane Vacuum Casting System  
Low Flexural Modulus, Simulates Polypropylene*

ALCHEMIX VC 3361 is a high temperature, polyurethane vacuum casting resin designed to simulate thermoplastics such as polypropylene. ALCHEMIX VC 3361 has low flexural modulus, excellent physical properties and fast demould time. The system is specifically designed for use in gravity vacuum casting machines. A slow version, ALCHEMIX VC 3361S, is also available.

### Special Features

- Low flexural modulus, very flexible
- Excellent impact resistance
- Rapid demould
- Easily pigmentable

### Mix Ratio

By Weight **VC 3361A : VC 3361B**  
100 : 100

### Product Data

| Property                  | Units             | VC 3361A     | VC 3361B              | Mix                              |
|---------------------------|-------------------|--------------|-----------------------|----------------------------------|
| Material                  | -                 | Polyol blend | Isocyanate            | Polyurethane                     |
| Appearance                | -                 | White liquid | Straw coloured liquid | Straw coloured liquid            |
| Viscosity (25 °C)         | mPa.s             | 500 – 800    | 30 – 50               | 300 – 500                        |
| Density (25 °C)           | g/cm <sup>3</sup> | 1.00 – 1.05  | 1.19 – 1.24           | 1.09 – 1.14                      |
| Pot life (200g, 25 °C)    | Minutes & Seconds | -            | -                     | 3 min 30 – 4 min 30              |
| Demould Time (70 °C)      | Minutes           | -            | -                     | 45 – 60 (depending on thickness) |
| Maximum Casting Thickness | mm                | -            | -                     | 10                               |

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## Cured Properties

| Properties                    | Standard         | Units   | Result (Full Cure) |
|-------------------------------|------------------|---------|--------------------|
| Hardness (25°C)               | BS EN ISO 868    | Shore D | 75 – 80            |
| Linear Shrinkage              | 500 x 50 x 10 mm | %       | 0.20 – 0.40        |
| Tensile Strength              | BS EN ISO 527    | MPa     | 35 – 40            |
| Elongation at Break           | BS EN ISO 527    | %       | 9 – 11             |
| Flexural Strength             | BS EN ISO 178    | MPa     | 35 – 45            |
| Flexural Modulus              | BS EN ISO 178    | MPa     | 1100 – 1400        |
| Maximum Operating Temperature | TMA              | °C      | 65 – 70            |

## 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. Both components should be heated to 40°C before use. If using pigments, add the pigment to the part A. We suggest using 1 – 3% pigment.

## Mixing/casting

Weigh ALCHEMIX VC 3361A into cup A and ALCHEMIX VC 3361B into cup B. When making the first mix allow an additional amount of A to account for the cup loss. Degas for at least 10 minutes, whilst slowly mixing cup B. After degassing, pour cup A into cup B while mixing. Mix the A and B components for 45 – 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 10 mm depth. ALCHEMIX VC 3661 can be soft in thicknesses of less than 2mm when demoulded. Where this occurs, return the piece to the curing oven. The memory of ALCHEMIX VC 3661 is very good, and the shape will return to that of the mould unless stressed during the post cure process.

## **Storage**

ALCHEMIX VC 3361A and B should be stored in original, unopened containers between 20 and 25 °C. ALCHEMIX VC 3361B 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 3361A and B will have a shelf life of 6 months, from the date of production.

## **Packaging**

VC 3361A is supplied in 1kg containers.  
VC 3361B is supplied in 1kg 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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