Technical Data Sheet

ALCHEMIX® VC 3341

Water Clear, UV Stable Polyurethane Vacuum Casting System
85 – 90 Shore D Hardness

ALCHEMIX VC 3341 is a UV stable, water clear polyurethane vacuum casting resin designed to simulate thermoplastics such polycarbonate, shock resistant PMMA and ABS. ALCHEMIX VC 3341 has excellent mechanical properties and extremely high heat distortion temperature. The system is specifically designed for use in gravity vacuum casting machines.

Special Features

- High heat distortion temperature
- Optically clear
- UV stable
- Extremely rigid
- Low viscosity

Mix Ratio

	VC 3341A :	**VC 3341B**
By Weight	100 :	150

Product Data

Property	**Units**	**VC 3341A**	**VC 3341B**	**Mix**
Material	-	Polyol blend	Isocyanate	Polyurethane
Appearance	-	Clear liquid	Clear liquid	Clear liquid
Viscosity (25°C)	mPa.s	700 – 1000	20 – 40	100 – 200
Density (25°C)	g/cm^3	1.04 – 1.09	1.04 – 1.09	1.04 – 1.09
Pot life (200g, 25°C)	Minutes	-	-	7 – 9
Demould Time (70°C)	Minutes	-	-	45 – 60
Maximum Casting Thickness	mm	-	-	10

Cured Properties

Properties	Standard	Units	Result (Full Post Cure)
Hardness (25°C)		Shore D	85 – 90
Linear Shrinkage	500 x 50 x10 mm	%	0.20 – 0.40
Tensile Strength	BS EN ISO 527	MPa	30 – 40
Elongation at Break	BS EN ISO 527	%	4 – 5
Flexural Strength	BS EN ISO 178	MPa	70 – 80
Flexural Modulus	BS EN ISO 178	MPa	1900 – 2100
Softening Point	Alchemie STM	°C	95 – 100
Resistance to Diesel	Full immersion 7 days	-	Excellent

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. Part A should be heated to 40°C and part B to 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 3341A into cup A and ALCHEMIX VC 3341B into cup B. When making the first mix allow an additional amount of A to account for the cup loss. Degas for 8 minutes, whilst slowly mixing cup B. After degassing, pour cup A into cup B while mixing. Mix the A and B components until the mix becomes clear, typically 2 minutes. When mixing is complete pour the mixed material into the mould. When material can be seen exiting from the risers break the vacuum.

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.

Post-Curing

In order to achieve the maximum heat resistance, the following post cure cycle should be carried out. Allow the product to cure at room temperature for 24 hours and then heat for 1 hour at 60°C, 1 hour at 80°C, followed by 1 hour at 100°C.

To prevent any distortion during the post cure cycle, the unit should be placed on a conformer. When post-curing is complete, let the unit cool down slowly to room temperature, preferably in the oven. Sudden change in temperature can cause distortion or warping.

Storage

ALCHEMIX VC 3341A and B should be stored in original, unopened containers between 20 and 25°C. ALCHEMIX VC 3341B 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 3341A and B will have a shelf life of 3 months, from the date of production.

Packaging

VC 3341A is supplied in 670g containers.
VC 3341B 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.

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.