

## ALCHEMIX<sup>®</sup> PU 3652

*Two Component, Very Low Viscosity Unfilled Polyurethane System;  
Hardness 70 – 80 Shore D*

ALCHEMIX PU 3652 is an unfilled two component polyurethane system, which has no odour and very low viscosity. Mineral and metallic fillers may be added to it in variable ratios depending on the casting thickness. This economical casting resin can be used to produce ultra-fine details in model making or as a low viscosity casting resin for pattern making. ALCHEMIX PU 3652 is recommended for use in open moulds.

### Special Features

- Ultra low viscosity
- Excellent surface detail reproduction
- Accepts high levels of filler
- No odour

### Mix Ratio

**PU 3652A : PU 3652B**  
By Weight                                  100 : 100

### Product Data

Property	Units	PU 3652A	PU 3652B	Mix
<b>Material</b>	-	Formulated Polyol	Isocyanate	Polyurethane
<b>Appearance</b>	-	Cream liquid	Brown liquid	Beige liquid
<b>Viscosity (25°C)</b>	mPa.s	75 – 95	65 – 85	70 – 90
<b>Density (25°C)</b>	g/cm <sup>3</sup>	0.97 – 1.02	1.10 – 1.15	1.04 – 1.09
<b>Pot Life (200g, 25°C)</b>	Minutes	-	-	3 – 4
<b>Demould Time (200g, 20mm, 25°C)</b>	Minutes	-	-	15 – 20
<b>Demould Time (100g, 5mm, 25°C)</b>	Minutes	-	-	30 – 40
<b>Minimum Casting Thickness</b>	mm	-	-	3

## Cured Properties

Properties	Standard	Units	PU 3652 (Unfilled)	PU 3652 (200% A91)
Hardness	BS 2782: Part 3: Method 365B	Shore D	70 – 75	75 – 80
Linear Shrinkage	500 x 50 x10 mm	%	< 0.05	< 0.05
Tensile Strength	BS 2782: Part 3: Method 320B	MPa	8 – 12	3 – 7
Elongation at Break	BS 2782: Part 3: Method 320B	%	4 – 5	2 – 3
Flexural Strength	BS 2782: Part 3: Method 335A	MPa	25 – 30	20 – 25
Flexural Modulus	BS 2782: Part 3: Method 335A	MPa	600 – 1000	3000 – 3500
Heat Distortion Temperature (HDT)	TMA	°C	65 – 70	75 – 80

## Method of Use

### **Mould Preparation**

Ensure that the mould is clean and dry and if the mould is made from metal, wood or resin, use a release agent such as R7. For flexible moulds, use Alchemix RTV silicone rubber. If the mould is wooden, ensure the wood is well sealed with varnish and/or wax based release agents such as R7.

### **Resin Preparation**

Shake the Part A can thoroughly in order to homogenise the resin. For best results, ensure that the two components are at 20 – 25°C before mixing.

### **Mixing Instructions**

When using unfilled, add the correct amount of Part B to the Part A and stir for 30 seconds. Pour carefully in one place into the mould in order to avoid air inclusion. If the resin is over mixed or stirred after pouring into the mould there is a possibility of oily surfaces on the casting.

If using filled, we recommend the use up to 200% filler. Use Alchemix A91 Aluminium Trihydroxide for general bulking out and shrinkage reduction, or Alchemix A83 Aluminium Powder for higher temperature applications. Large quantities of material, filled or unfilled, will always produce more exotherm and will gel quicker than smaller amounts.

If aiming to use 200% filler in a 200g mix, weigh out 100g of part A and mix in 200g filler. Then weigh out 100g of B and mix in 200g filler. Then mix the two components.

## ***Curing***

The casting can generally be demoulded in 15 – 40 minutes at room temperature. The precise demould time will vary with casting thickness, as thin section units will cure slower than thicker section units. When casting thin wall sections, ensure that the mould and resins are at least 20 – 25°C to facilitate a good cure and reduce the risk of brittleness.

It is strongly recommended that, if the cast units are to be painted they must be wiped cleaned to remove any residual wax/oil from the release agent or resin.

## **Storage**

ALCHEMIX PU 3652A and B should be stored in original, unopened containers between 20 and 25°C. ALCHEMIX PU 3652B may crystallise 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 PU 3652A and B will have a shelf life of 6 months, from the date of production.

## **Packaging**

ALCHEMIX PU 3652A is supplied in 1kg, 5kg and 25kg containers.  
ALCHEMIX PU 3652B is supplied in 1kg, 5kg and 25kg containers.

(Please contact Alchemie Ltd for bulk supply)

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## **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 any of our products, users should familiarise themselves with the relevant Technical and 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.

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