

# Technical Data Sheet

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## ALCHEMIX® PU 3544

*Two Part, Flexible Polyurethane System  
40 Shore A Hardness*

ALCHEMIX PU 3544 is a tough, durable, polyurethane elastomer of 40 Shore A, used for mould making or prototype parts requiring high tear strength and excellent abrasion resistance.

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### Special Features

- High tear strength
- Tough and durable
- Excellent abrasion resistance

### Mix Ratio

By Weight **PU 3544A : PU 3544B**  
100 : 100

### Product Data

Property	Units	PU 3544A	PU 3544B	Mix
<b>Material</b>	-	Formulated Polyol	Isocyanate	Polyurethane
<b>Appearance</b>	-	Amber Liquid	Amber Liquid	Amber Liquid
<b>Viscosity (25°C)</b>	mPa.s	800 – 1100	40 – 80	400 – 600
<b>Density (25°C)</b>	g/cm <sup>3</sup>	1.01 – 1.06	0.98 – 1.03	0.99 – 1.04
<b>Pot life (200g, 25°C)</b>	Minutes	-	-	16 min – 20 min
<b>Demould Time (25°C)</b>	Hours	-	-	12
<b>Full Cure (25°C)</b>	Days	-	-	7

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## Cured Properties

Properties	Standard	Units	Result (Full Cure)
Hardness	BS EN ISO 868	Shore A	40 – 45
Tensile Strength	BS EN ISO 37	MPa	1.4 – 1.8
Elongation at Break	BS EN ISO 37	%	140 – 190
Tear Strength	BS EN ISO 34	kN/m	5.5 – 7.5

## 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 RELEASE AGENT R7. Wooden moulds should be sealed well before casting. For flexible moulds, we recommend ALCHEMIX RTV Silicone Rubbers. Some condensation cure rubbers can cause the product to cure with a tacky surface. To avoid this we advise using addition cure silicones, such as ALCHEMIX RTV 240. Never use silicone release agents if the cast units are to be painted.

## Mixing Instructions

Shake the ALCHEMIX PU 3544A container thoroughly in order to homogenize the resin. Ensure that both components are at least 20°C before mixing.

ALCHEMIX PU 3544A should be mixed with ALCHEMIX PU 3544B according to the indicated mixing ratio. Both components should be thoroughly mixed, care should be taken to avoid air entrapment and make certain that material at bottom and sides of container is thoroughly stirred into the centre. After thorough mixing, the material should be poured into the mould. To avoid air entrapment, pour the material slowly, and into one place in the mould. In order to obtain a bubble free cast, the material should be degassed after mixing and pouring. Mixing, pouring and degassing must be completed within the stated pot life.

## Curing and post curing

The precise demould time will vary with the casting thickness, as thin sections will cure slower than thicker sections. If cured at room temperature, the casting can generally be demoulded after 1 hour. If quicker demould times are required, the product can be cured at elevated temperatures (up to 80°C). Curing at high temperatures will increase shrinkage, but will decrease demould times dramatically.

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## **Storage**

ALCHEMIX PU 3544A and B should be stored in original, unopened containers between 20 and 25°C. ALCHEMIX PU 3544B 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 PU 3544A and B will have a shelf life of 6 months, from the date of production.

## **Packaging**

ALCHEMIX PU 3544A is supplied in 1kg, 5kg and 25kg containers.  
ALCHEMIX PU 3544B is supplied in 1kg, 5kg and 25kg containers.

(Please contact Alchemie Ltd for bulk supply)

## **Further Information**

This data is not to be used for specifications. Values listed are for typical properties and should not be considered minimum or maximum.

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 familiarize themselves with the relevant Technical and 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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