

ALCHEMIX[®] PU 363

*Fast Cast Polyurethane System
Unfilled, 100 : 100 Mixing Ratio*

ALCHEMIX PU 363 is an odourless two component polyurethane system which is designed for rapid demould times and can be used filled or unfilled. ALCHEMIX PU 363 can be used unfilled in prototyping and model-making areas, or filled with mineral or metallic fillers in pattern-making.

Special Features

- Rapid demould
- Odourless
- Very low viscosity
- Good thermal resistance

Mix Ratio

By Weight **PU 363A : PU 363B**
 100 : 100

Product Data

Property	Units	PU 363A	PU 363B	Mix
Material	-	Formulated Polyol	Isocyanate	Polyurethane
Appearance	-	Cream liquid	Brown liquid	Beige liquid
Viscosity (25°C)	mPa.s	180 – 280	45 – 65	120 – 160
Density (25°C)	g/cm ³	0.97 – 1.02	1.10 – 1.15	1.04 – 1.09
Pot Life (200g, 25°C)	Minutes	-	-	2 – 3
Demould Time (200g, 20mm, 25°C)	Minutes	-	-	15 – 20
Demould Time (20g, 2mm, 25°C)	Minutes	-	-	25 – 30

Cured Properties

Properties	Standard	Units	PU 363 (Unfilled)	PU 363 (200% A91)
Hardness	BS 2782: Part 3: Method 365B	Shore D	70 – 75	75 – 80
Linear Shrinkage	500 x 50 x10 mm	%	< 1.00	< 0.20
Tensile Strength	BS 2782: Part 3: Method 320B	MPa	25 – 30	8 – 13
Elongation at Break	BS 2782: Part 3: Method 320B	%	4.5 – 6.5	2.5 – 4.5
Flexural Strength	BS 2782: Part 3: Method 335A	MPa	30 – 35	15 – 20
Flexural Modulus	BS 2782: Part 3: Method 335A	MPa	500 – 1000	1700 – 2200
Heat Distortion Temperature (HDT)	TMA	°C	77 – 82	70 – 75

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 using filled, we recommend the use up to 150% 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 150% filler in a 200g mix, weigh out 100g of part A and mix in 150g filler. Then weigh out 100g of B and mix in 150g filler. Then mix the two components.

Curing

The casting can generally be demoulded in 15 - 30 minutes at room temperature. The precise demould time will vary with the 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.

Storage

ALCHEMIX PU 363A and B should be stored in original, unopened containers between 20 and 25°C. ALCHEMIX PU 363B 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 363A and B will have a shelf life of 6 months, from the date of production.

Packaging

ALCHEMIX PU 363A is supplied in 1kg, 5kg and 20kg containers.
ALCHEMIX PU 363B is supplied in 1kg, 5kg and 20kg containers.

(Please contact Alchemie Ltd for bulk supply)

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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