

ALCHEMIX[®] PU 343

*Two Part, Flexible Polyurethane System
87 – 92 Shore A Hardness*

ALCHEMIX PU 343 is a semi flexible polyurethane system of 87 – 92 Shore A, used for mould making or prototype parts requiring semi rigidity.

Special Features

- High tear strength
- Rapid demould
- Hard but flexible polyurethane

Mix Ratio

By Weight **PU 343A : PU 343B**
100 : 40

Product Data

Property	Units	PU 343A	PU 343B	Mix
Material	-	Formulated Polyol	Isocyanate	Polyurethane
Appearance	-	White Liquid	Brown Liquid	Brown Liquid
Viscosity (25°C)	mPa.s	800 – 1200	180 – 240	700 – 1100
Density (25°C)	g/cm ³	1.02 – 1.07	1.20 – 1.25	1.08 – 1.13
Pot life (200g, 25°C)	Minutes	-	-	9 – 14
Demould Time (30mm thick, 200g, 25°C)	Hours	-	-	2
Demould Time (5mm thick, 200g, 25°C)	Hours	-	-	12 – 15
Demould Time (30mm thick, 200g, 60°C)	Minutes	-	-	60

Cured Properties

Properties	Standard	Units	Result (Full Cure)
Hardness	BS 2782: Part 3: Method 365B	Shore A	87 – 92
Linear Shrinkage	500 x 50 x10 mm	%	0.1 – 0.2
Tensile Strength	BS 2782: Part 3: Method 320B	MPa	10.0 – 12.0
Elongation at break	BS 2782: Part 3: Method 320B	%	290 – 340
Tear Strength	BS 903: Part A3	kN/m	27.0 – 30.0

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 Rubber, please contact our technical department for more advice. Never use silicone release agents if the cast units are to be painted.

Mixing Instructions

Shake the ALCHEMIX PU 343A container thoroughly in order to homogenize the resin. Ensure that both components are at least 20°C before mixing.

ALCHEMIX PU 343A should be mixed with ALCHEMIX PU 343B 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 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 unit, the material should be degassed after mixing and pouring. Mixing, pouring and degassing must be completed within the stated pot life. When pigmenting, use liquid PU pigments (available from Alchemie) at a ratio of 1 – 3% in ALCHEMIX PU 343A

Curing

The casting can generally be demoulded in 1 – 2 hours (see Product Data section) at room temperature. The precise demould time will vary with the casting thickness, as thin section units will cure slower than thicker section units. If the casting has thin sections, it is advisable either to use preheated moulds (50 – 80°C), or to post-cure the castings after gelation at 50 – 80°C. Curing at high temperatures will increase shrinkage, but will decrease demould times dramatically. To achieve optimum physical properties it is recommended that ALCHEMIX PU 343 be post cured at 80°C for 6 hours.

Storage

ALCHEMIX PU 343A and B should be stored in original, unopened containers between 20 and 25°C. ALCHEMIX PU 343B 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 343A and B will have a shelf life of 6 months, from the date of production.

Packaging

ALCHEMIX PU 343A is supplied in 25kg, 5kg and 1kg containers.
ALCHEMIX PU 343B is supplied in 25kg, 2kg and 400g 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 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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