

ALCHEMIX® PU 3642S

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

ALCHEMIX PU 3642S is an odourless two component polyurethane system which is designed for thin sections, or castings up to 20mm thick that require quick demould times. The product is available in both natural and grey colours as standard.

Special Features

- Rapid demould
- Odourless
- Low viscosity
- Good thermal resistance

Mix Ratio

PU 3642SA : PU 3642SB
By Weight 100 : 100

Product Data

Property	Units	PU 3642SA	PU 3642SB	Mix
Material	-	Formulated Polyol	Isocyanate	Polyurethane
Appearance	-	Beige / Grey liquid	Pale yellow liquid	Beige / Grey liquid
Viscosity (25 °C)	mPa.s	400 – 800	30 – 50	140 – 190
Density (25 °C)	g/cm ³	1.04 – 1.08	1.07 – 1.11	1.06 – 1.11
Pot Life (200g, 25 °C)	Minutes	-	-	4 min – 4 min 30
Demould Time (50g, 5mm, 25 °C)	Minutes	-	-	45 – 55
Maximum Casting Thickness	mm	-	-	20

Cured Properties

Properties	Standard	Units	PU 3642S
Hardness	BS 2782: Part 3: Method 365B	Shore D	65 – 70
Tensile Strength	BS 2782: Part 3: Method 320B	MPa	14 – 16
Elongation at Break	BS 2782: Part 3: Method 320B	%	5 – 7
Flexural Strength	BS 2782: Part 3: Method 335A	MPa	15 – 17
Flexural Modulus	BS 2782: Part 3: Method 335A	MPa	280 – 380
Heat Distortion Temperature (HDT)	TMA	°C	TBC

Method of Use

Mould Preparation

Ensure that the mould is clean and dry. If the mould is made from wood, metal or resin, use a release agent such as R7. For flexible moulds, use Alchemix RTV silicone rubber. If the mould is made from wood, ensure the wood is well sealed with varnish and/or wax based release agents such as R7. Never use silicone release agents if the units are to be painted.

Resin Preparation

Shake the Part A can thoroughly in order to homogenise the resin. For best results, make sure the two components are at least 20 °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 10 – 25 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.

Storage

ALCHEMIX PU 3642SA and SB should be stored in original, unopened containers between 20 and 25°C. ALCHEMIX PU 3642SB 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 3642SA and SB will have a shelf life of 6 months, from the date of production.

Packaging

ALCHEMIX PU 3642SA is supplied in 1kg and 5kg containers.
ALCHEMIX PU 3642SB is supplied in 1kg and 5kg 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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