

Description

ALCHEMIX PU 3549 is a tough, durable polyurethane elastomer of 90 Shore A, used for mould making or prototype parts requiring high tear strength and excellent abrasion resistance.

Features

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

Mix Ratio

	PU 3549A	PU 3549B
By Weight	100	100

Component Data

	Conditions	PU 3549A	PU 3549B
Description	-	Polyol	Isocyanate
Appearance	-	Amber liquid	Amber liquid
Viscosity	25°C	1000 – 1300 mPa.s	250 – 450 mPa.s
Density	25°C	1.02 – 1.07 gcm ⁻³	1.02 – 1.07 gcm ⁻³

Cure Data

	Conditions	Typical Value
Appearance	-	Amber
Mixed Viscosity	25°C	700 – 1000 mPa.s
Mixed Density	25°C	1.02 – 1.07 gcm ⁻³
Pot Life	200g, 25°C	4 minutes 30 – 5 minutes 30
Demould Time ¹	200g, 35mm thickness, 25°C	1 hour

¹ See “Curing and Post Curing” section below

Cured Properties

	Standard	Typical Value
Hardness	ISO 868	88 – 92 A
Linear Shrinkage ²	500 x 50 x 10 mm	< 0.2 %
Tensile Strength	ISO 37	8.0 – 8.5 MPa
Elongation at Break	ISO 37	350 – 400 %
Tear Strength	ISO 34	58.0 – 62.0 kN/m
Maximum Operating Temperature ²	Short term: 1 hour	80°C

² See “Shrinkage” section below.

Mould Preparation

Ensure that the mould is clean and dry and if the mould is made from metal or resin, use a release agent such as Release Agent R7. For flexible moulds, use 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.

Resin Preparation

For best results, ensure the two components are at between 20 – 25°C before use. If using pigment, add to the part A at a loading of up to 3% and mix thoroughly. Testing should be carried out to ensure that the pigment is compatible with the system.

Processing Instructions

Thoroughly mix the two components according to the indicated mixing ratio, avoiding air entrapment and ensuring that the material at the bottom and sides of the container is well stirred into the centre. Pour carefully in one place into the mould in order to avoid air inclusion. The mixing and processing operations should be completed within the pot life of the system.

Curing and Post Curing

The precise demould time will vary with the casting thickness, as thin section units will cure slower than thicker section units. The casting can generally be demoulded in 24 hours at room temperature. When casting thin wall sections, ensure that the mould and resin components are at least 20 – 25°C to facilitate a full cure.

Post curing isn't recommended for this product, however, 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 the demould times considerably.

Shrinkage

The shrinkage value above is quoted as a guide only. Shrinkage will vary with each mould design, as factors such as mould size and geometry can affect the degree of shrinkage. Generally speaking, large, thick castings will have a greater degree of shrinkage than small, thin castings. Other factors, such as mould temperature, resin temperature and the addition of fillers can also have an effect. Post curing the part can also lead to a greater degree of shrinkage. Please contact Alchemie Ltd for more information.

Storage

ALCHEMIX PU 3549A and B should be stored in original, unopened containers between 20 and 25°C. ALCHEMIX PU 3549B 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 3549A and B will have a shelf life of 6 months, from the date of production.

Packaging

ALCHEMIX PU 3549A is supplied in 1kg, 5kg and 25kg kits.
ALCHEMIX PU 3549B is supplied in 1kg, 5kg and 25kg kits.
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 Data Sheet (TDS) and Safety Data Sheets (SDS) provided by Alchemie Ltd.

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