

Technical Data Sheet

ALCHEMIX® PU 3619

*Two Component Rigid Polyurethane Foam System
40 – 50 kgm⁻³ Free Rise Density*

ALCHEMIX PU 3619 is a two component polyurethane foam system, that when mixed gives a low density rigid foam. ALCHEMIX PU 3619 can be used for a variety of applications such as structural infill of hollow components. The foam is durable and has excellent physical properties. Typical free rise density is between 40 – 50 kgm⁻³.

Mix Ratio

	PU 3619A : PU 3619B
By Weight	100 : 114
By Volume	100 : 100

Product Data

Property	Units	PU 3619A	PU 3619B	Mix
Material	-	Formulated polyol blend	Isocyanate	Polyurethane
Appearance	-	Clear yellow liquid	Brown liquid	Yellow rigid foam
Viscosity (25 °C)	mPa.s	450 – 750	180 – 240	-
Density (25C)	g/cm ³	1.05 – 1.10	1.21 – 1.25	-
Cream Time (100g, 25 °C)	Seconds	-	-	35 – 40
Thread Formation Time (100g, 25 °C)	Minutes	-	-	2 min 45 – 3 min 15
Rise Time (100g, 25 °C)	Minutes	-	-	3 – 4
Exotherm (100g, 25 °C)	°C	-	-	135 – 145
Demould Time (100g, 25 °C)	minutes	-	-	> 30

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Cured Property Data

Property	Units	Typical Result
Free Rise Density: Overall	kgm ⁻³	45 – 50
Free Rise Density: Core	kgm ⁻³	40 – 45

Method of Use

Calculating Shot size

To calculate how much ALCHEMIX PU 3619 is required to fill the cavity, known as the “shot size”, first calculate the volume of the cavity (in m³). The amount of foam required is then calculated as follows:

$$\text{Amount of PU 3619 (kg)} = \text{Desired Density (kgm}^{-3}\text{)} \times \text{Cavity Volume (m}^3\text{)}$$

ALCHEMIX PU 3619 has a free rise density of approximately 45 kgm⁻³, but for best results the foam should be overpacked to give a minimum moulded density of approximately 70 kgm⁻³.

Preparation

ALCHEMIX PU 3619A and B components should be processed at a temperature of 18 – 25°C, using the product at temperatures lower than 18°C will give inferior physical properties. The cavity to be filled should be at 25°C. The cavity should be dry and free from contamination such as grease, dust or dirt. It is important to allow some small bleed holes in the cavity to allow any gas generated to escape.

Mixing and Pouring

Once the mould has been prepared, accurately weigh out the required quantity of ALCHEMIX PU 3619A into a clean mixing vessel. Weigh the required amount of ALCHEMIX PU 3619B into the mix vessel and immediately mix the two components until they are homogenized. The mixed material should be streak free. Poor mixing will result in poor quality foam. Immediately pour the mixed material into the cavity. It is important that the mixing/ pouring operation is completed before the cream time of the foam (35 – 40 seconds).

Full Cure

ALCHEMIX PU 3619 is a fast curing system with a long working time. The foam can be cut after a minimum of 2 hours and full cure will take up to 72 hours. It should be noted that reaction times and cure time are affected by factors such as

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liquid temperature, cavity temperature, room temperature and cavity volume and shape. For this reason, trials should be carried out to determine the minimum cure time for each individual system.

Trials

When using ALCHEMIX PU 3619 for the first time, or when using new cavity shapes or volumes, trials must be carried out to determine the appropriate shot size.

Storage

ALCHEMIX PU 3619A and B should be stored in original, unopened containers between 20 and 25°C. ALCHEMIX PU 3619B 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 3619A and B will have a shelf life of 6 months, from the date of production.

Packaging

ALCHEMIX PU 3619A is supplied in 880g, 4.4kg and 22kg containers.
ALCHEMIX PU 3619B is supplied in 1kg, 5kg and 25kg containers.

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Further Information

Please contact our Technical Department for any further advice on the use of this product. 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 this product users should familiarize themselves with the relevant 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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