

Description

ALCHEMIX PU 7151 is a two component thermoset system which is frosted when cured. ALCHEMIX PU 7151 is ideal for lighting applications, rapid prototyping, embedding or any type of application with the requirement to diffuse light.

Features

- UV stable
- Low viscosity
- Excellent light diffusion

Mix Ratio

	PU 7151A	PU 7151B
By Weight	100	120

Component Data

	Conditions	PU 7151A	PU 7151B
Appearance	-	Translucent liquid	Clear liquid
Viscosity	25°C	300 – 600 mPa.s	100 – 150 mPa.s
Density	25°C	1.24 – 1.39 gcm ⁻³	1.08 – 1.13 gcm ⁻³

Cure Data

	Conditions	Typical Value
Appearance	-	Frosted white
Mixed Viscosity	25°C	TBC
Mixed Density	25°C	1.15 – 1.20 gcm ⁻³
Pot Life	200g, 25°C	23 minutes – 28 minutes
Demould Time	200g, 20mm, 25°C	TBC
Recommended Casting Thickness ¹	-	5 – 30 mm

¹ See "Curing" and "Shrinkage" sections below.

Cured Properties

	Standard	Typical Value
Hardness	ISO 868	75 – 80 D
Linear Shrinkage ²	500 x 50 x 10mm	TBC
Tensile Strength	ISO 527	TBC
Elongation at Break	ISO 527	TBC
Tensile Modulus	ISO 527	TBC
Flexural Strength	ISO 178	TBC
Flexural Modulus	ISO 178	TBC
Maximum Operating Temperature ³	Alchemie STM	TBC

² See "Shrinkage" section below.

³ Maximum operating temperature will depend on the end use of the product.

Preparation

Prior to use, ensure that the ALCHEMIX PU 7151 is compatible with the items being encapsulated and / or the substrates being used.

If being used as a casting system: 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 Rubber. Never use silicone release agents if the units are to be painted.

If being used as an encapsulant: Ensure that the cavity to be filled, and any substrates are clean and dry, and free from any contamination.

Resin Preparation

Inspect the part B for any signs of crystallization. Crystallization can cause the liquid to become cloudy or viscous, and in extreme cases, the product could become solid. If the part B has crystallized, heat to 40°C using sufficient extraction to remove any fumes. Shake the containers periodically until the product becomes a clear liquid. Allow the product to cool to room temperature before use. Ensure the two components are at between 20 – 25°C before use.

Processing Instructions

Thoroughly mix the part A and part B 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. Degas for approximately 5 minutes before pouring. After mixing, pour into the mould or cavity from one end or along the wall of the mould or cavity. Pour slowly to avoid introducing air. Degas again if necessary, avoid boiling the material at very high vacuum. The mixing and pouring operations should be completed within the pot life of the system. Large quantities of material, filled or unfilled, will always produce more heat and will gel quicker than smaller amounts.

Curing

ALCHEMIX PU 7151 is designed to be used and cured at room temperature. The cure rate is affected by temperature, the product must be cast at temperatures greater than 15°C. Curing at lower temperatures will result in slow, or incomplete cure.

Incomplete cure could occur if cast in thin section. The exact cure time will depend on the size and geometry of the casting and should be determined by customer testing. Thinner castings will take longer to cure than thicker castings, but generally, the product can be demoulded after 24 hours at 25°C. Incomplete cure can result in slight distortions or deformations of the components if forces are applied. If the product is softer than expected, allow more time to cure, or heat gently at 30 – 40°C.

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 and resin temperature 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 7151A and B should be stored in original, unopened containers between 20 and 25°C. ALCHEMIX PU 7151B 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 7151A and B will have a shelf life of 6 months, from the date of production.

Packaging

ALCHEMIX PU 7151A is supplied in 835g and 4.175kg kits. ALCHEMIX PU 7151B is supplied in 1kg and 5kg kits. Please contact Alchemie Ltd for bulk supply.

Further Information

This is a Preliminary Data Sheet, product data may be revised at a later date following further testing.

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.

Alchemie® and Alchemix® are registered trademarks of Alchemie Ltd.