

ALCHEMIX® PU 7301

*Two Part Polyurethane Electrical Encapsulant
90 – 98 Shore A Hardness*

ALCHEMIX PU 7301 is a high performance electrical encapsulant with very low in viscosity, and excellent flow properties allowing intricate unit to be potted. ALCHEMIX PU 7301, is flame retardant, has excellent adhesion and low stress thermal cycling characteristics.

Special Features

- Low viscosity
- Excellent adhesion
- Low stress thermal cycling
- Thermally conductive
- Excellent electrical properties
- Excellent chemical stability
- RoHS compliant
- Flame retardant to UL94 V-0

Mix Ratio

By Weight **PU 7301A : PU 7301B**
 100 : 13.5

Product Data

Property	Units	PU 7301A	PU 7301B	Mix
Material	-	Formulated Polyol	Isocyanate	Polyurethane
Appearance	-	Black or Beige Liquid	Brown Liquid	Black or Beige Liquid
Viscosity (25°C)	mPa.s	11,000 – 18,000	180 – 240	3,000 – 8,000
Density (25°C)	g/cm ³	1.50 – 1.60	1.21 – 1.26	1.45 – 1.55
Pot Life (200g, 25°C)	Minutes	-	-	9 – 11
Minimum Cure Time	Hours	-	-	24
Full Cure (200g, 25°C)	Days	-	-	7 days

Preliminary Technical Data Sheet

Cured Properties

Properties	Standard	Units	Typical Result (Full Cure)
Hardness	BS EN ISO 868	Shore A	90 – 98
Hardness	BS EN ISO 868	Shore D	60 – 65
Tensile Strength	BS EN ISO 37	MPa	4.0 – 5.0
Elongation at break	BS EN ISO 37	%	20 – 25
Thermal Conductivity (23°C)	NanoFlash LFA 447	W/m.K	TBC
Coefficient of Thermal Expansion	DMA	$\times 10^{-6} K^{-1}$	TBC
Flame Retardancy	UL94	-	UL94 V-0 (File: E213605)

Electrical Properties

Properties	Standard	Conditions	Units	Typical Result (Full Cure)
Electric Strength	IEC 60243-1	23°C	kV/cm	TBC
Dielectric Dissipation Factor	IEC 60250	100Hz, 1V, 23°C	-	TBC
Relative Permittivity	IEC 62050	100Hz, 1V, 23°C	-	TBC
Volume Resistivity	IEC 60093	500V, 23°C	$\Omega.cm$	TBC
Comparative Tracking Index	IEC 60112	TBC	V	TBC

Method of Use

ALCHEMIX PU 7301 can be hand mixed or machine dispensed. Compatibility with mixing machine should be tested prior to large scale usage. ALCHEMIX PU 7301A and B should be mixed at the stated ratio; deviation from this ratio will reduce the physical properties of the material. Pre-weighed twinpacks are available for easy mixing and dispensing. Both components should be thoroughly mixed; incomplete mixing will give wet spots, and will reduce the physical properties of the cured system.

Preliminary Technical Data Sheet

ALCHEMIX PU 7301 is designed to be used and cured at room temperature. However, a shorter cure time can be achieved by curing at elevated temperatures. In which case, the resin should be mixed and poured at room temperature, before placing in an oven. A typical cure schedule would be 2 – 3 hours at 75°C. Please contact Alchemie Ltd for more details.

Storage

ALCHEMIX PU 7301A and B should be stored in original, unopened containers between 20 and 25°C. ALCHEMIX PU 7301B may crystallize 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 7301A and B will have a shelf life of 6 months, from the date of production.

Packaging

ALCHEMIX PU 7301A is supplied in 5kg and 25kg containers.

ALCHEMIX PU 7301B is supplied in 5kg and 25kg containers.

ALCHEMIX PU 7301 is also supplied in 500g or 1kg twinpacks for convenient mixing and dispensing.

(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 familiarize 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.

Alchemie® and Alchemix® are registered Trademarks of Alchemie Ltd, Warwick Road, Kineton, Warwick, England, CV35 0HU, England, United Kingdom. Ph: +44 (0)1926 641600; FAX: +44 (0)1926 641698