

Technical Data Sheet

ALCHEMIX® EP 504

Epoxy Resin System
85 – 90 Shore D Hardness

ALCHEMIX EP 504 is a very low viscosity, cold-curing, unfilled epoxy resin system. The low viscosity resin produces excellent wetting of fibres and fillers. The rapid demould time makes this product ideally suited for track side repairs. A choice of three different hardeners is available, allowing fast cure in a variety of conditions.

Mix Ratio

EP 504 : H504F / H504 / H504S
By Weight 100 : 33

Product Data

Property	Units	EP 504	H504F	H504	H504S
Material	-	Epoxy resin	Formulated amine	Formulated amine	Formulated amine
Appearance	-	Clear liquid	Amber liquid	Straw colour liquid	Straw colour liquid
Viscosity (25°C)	mPa.s	900 – 1300	90 – 130	120 – 160	120 – 160
Density (25°C)	g/cm ³	1.16 – 1.21	0.96 – 1.01	0.94 – 0.99	0.92 – 0.97
Mixed Viscosity (25°C)	mPa.s	-	400 – 800	800 – 1200	700 – 1100
Mixed Density (25°C)	g/cm ³	-	1.09 – 1.14	1.09 – 1.14	1.09 – 1.14
Pot Life (200g, 25°C)	Minutes	-	7 – 9	10 – 13	24 – 29
Cure Time	Hours	-	0.5 – 1	1 – 2	6 – 8

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Cured Properties

Properties	Standard	Units	EP 504 / H504F	EP 504 / H504	EP 504 / H504S
Hardness	BS EN ISO 868	Shore D	85 – 90	85 – 90	85 – 90
Linear Shrinkage	500 x 50 x 10 mm	%	< 0.2%	< 0.2%	< 0.2%
Tensile Strength	BS EN ISO 527	MPa	40 – 46	48 – 54	48 – 54
Tensile Modulus	BS EN ISO 527	MPa	1600 – 2000	1600 – 2000	1600 – 2000
Elongation at Break	BS EN ISO 527	%	2.0 – 4.0	3.0 – 5.0	3.0 – 5.0
Flexural Strength	BS EN ISO 178	MPa	95 – 105	85 – 95	85 – 95
Flexural Modulus	BS EN ISO 178	MPa	2300 – 2700	2100 – 2400	2100 – 2400
Glass Transition Temperature (T _g)	DMA	°C	80 – 84	78 – 82	78 – 82

Above values refer to pure resin, properties of the laminate will differ and will depend on the reinforcements used.

Method of Use

Preparation

Before use ensure that the resin, fibre or filler and Gelcoat are compatible. For advice on the choice of Gelcoat and for processing instructions, please contact Alchemie Ltd.

Mixing Instructions

Thoroughly mix the resin and the hardener according to the indicated mixing ratio, avoiding air entrapment and make certain that the material at the bottom and sides of the container is well stirred into the centre. The mixed material should be used within the stated pot life. Please note that the pot life is mentioned for 200g test sample mixing larger quantities will shorten the pot life similarly smaller quantities will increase the pot life.

Curing and Post Curing

To achieve full high temperature properties, post cure treatment is recommended. After curing / demoulding the part should be heated to 80°C for 3 hours and then allowed to slowly return to room temperature. The product can be used without

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post cure or with partial post cure, but will not achieve full physical properties.

Storage

ALCHEMIX EP 504, HARDENER H504F, HARDENER H504 and HARDENER H504S should be stored in original, unopened containers between 15 and 25°C. KEEP THE PACKING TIGHTLY SEALED WHEN NOT IN USE.

If stored under the above conditions, ALCHEMIX EP 504, HARDENER H504F, HARDENER H504 and HARDENER H504S will have a shelf life of 12 months, from the date of production.

Packaging

ALCHEMIX EP 504 is supplied in 1kg, 3kg, 5kg and 25kg containers.
HARDENER H504F is supplied in 330g containers.
HARDENER H504 is supplied in 330g, 1kg and 5kg containers.
HARDENER H504S is supplied in 330g, 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.

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Alchemie Limited

Alchemie Ltd develops, 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