

# Technical Data Sheet

## ALCHEMIX® EP 5753

*Extremely Low Viscosity Epoxy for Resin Infusion Applications  
Excellent Thermal and Mechanical Properties*

ALCHEMIX EP 5753 is an ambient temperature cure epoxy system, exhibiting outstanding mechanical and thermal properties. ALCHEMIX EP 5753 is formulated for resin infusion applications, and can also be used for resin transfer moulding (RTM), filament winding, pultrusion and wet lay up applications. The system is formulated to produce high performance composite parts using a wide variety of fibre systems, including carbon fibre, glass fibre and aramid fibre. The system has been formulated to ensure efficient wetting of fibres, eliminating air entrapment, dry spots and porosity in the composite part.

### Special Features

- Extremely low viscosity
- Ideal for resin infusion applications
- Excellent fibre wetting
- Excellent mechanical properties

### Mix Ratio

	<b>H5753</b>	<b>H5753S</b>
<b>By Weight</b>	100 : 25	100 : 25

### Product Data

Property	Units	EP 5753	H5753	H5753S
<b>Description</b>	-	Infusion Resin	Standard Hardener	Slow Cure Hardener
<b>Material</b>	-	Epoxy Resin	Formulated Amine	Formulated Amine
<b>Appearance</b>	-	Pale Liquid	Pale Amber Liquid	Pale Amber Liquid
<b>Viscosity (25°C)</b>	mPa.s	400 – 700	20 – 40	20 – 40
<b>Density (25°C)</b>	g/cm <sup>3</sup>	1.13 – 1.18	0.93 – 0.98	0.95 – 1.00
<b>Mixed Viscosity (25°C)</b>	mPa.s	-	150 – 250	350 – 450
<b>Mixed Density (25°C)</b>	g/cm <sup>3</sup>	-	1.08 – 1.13	1.08 – 1.13

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## Working Time and Cure Speed

Property	Units	EP 5753 – H5753	EP 5753 – H5753S
Pot Life (200g, 25°C)	Minutes	50 – 70	90 – 150
Cure Time (25°C)	Hours	24	24
Full Cure (25°C)	Days	7	7
Minimum Curing Temperature	°C	18	18

## Cured Properties (Post Cured)

Properties	Standard	Units	EP 5753 – H5753	EP 5753 – H5753S
Hardness	BS EN ISO 868	Shore D	85 – 90	85 – 90
Tensile Strength	BS EN ISO 527	MPa	62.0 – 66.0	47.0 – 51.0
Elongation at Break	BS EN ISO 527	%	2.5 – 4.5	2.5 – 4.5
Tensile Modulus	BS EN ISO 527	MPa	1900 – 2200	1500 – 1800
Flexural Strength	BS EN ISO 178	MPa	115.0 – 120.0	82.0 – 87.0
Flexural Modulus	BS EN ISO 178	MPa	2550 – 2950	2250 – 2650
Glass Transition Temperature (Tg)	DMA	°C	84 – 89	95 – 100

## Method of Use

### **Preparation**

Before use ensure that the resin, fibre or filler and gelcoat (if applicable) are compatible. For advice on the choice of gelcoat, please contact Alchemie Ltd. Do not apply resin if the ambient or substrate temperature is less than minimum curing temperature of 18°C.

### **Mixing and Application**

Thoroughly mix the resin and the hardener according to the indicated mixing ratio, avoid air entrapment and ensure that the material at the bottom and sides of the

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container is well stirred into the centre. The two components should be mixed and applied within the pot life. For advice on processing please contact Alchemie Ltd.

## ***Cure and Post Cure***

Lower ambient temperatures will result in slower cure. The product should always be processed and cured at temperatures above the minimum curing temperature of 18°C.

The system can be used after curing at room temperature, but in order to achieve full high temperature properties, a step wise post cure treatment is recommended. Allow the product to cure at room temperature for at least 24 hours, then heat to 60°C for 1 hour, followed by 80°C for 3 hours. To prevent any distortion during the post cure cycle, the unit should be placed on a conformer. When post-curing is complete, let the unit cool down slowly to room temperature, preferably in the oven. Sudden change in temperature can cause distortion or warping.

## **Storage**

ALCHEMIX EP 5753 and HARDENERS H5753 and H5753S should be stored in original, unopened containers between 15 and 25°C.

If stored under the above conditions, ALCHEMIX EP 5753 and HARDENERS H5753 and H5753S will have a shelf life of 12 months, from the date of production.

## **Packaging**

EP 5753 is supplied in 1kg, 5kg, 25kg, and 200kg containers  
H5753 and H5753S are supplied in 250g, 1.25kg, 6.25kg, and 200kg containers.

(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 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**