

## ALCHEMIX® EP 5753 – H105

*Epoxy Resin with High Reactivity and Excellent Through Cure at Low Temperatures*

ALCHEMIX EP 5753 – H105 is an epoxy system, exhibiting excellent through cure, even at low temperatures. ALCHEMIX EP 5753 – H105 exhibits outstanding mechanical and thermal properties. 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

- Excellent through curing at temperatures as low as 0°C.
- Excellent fibre wetting
- Excellent mechanical properties
- High temperature resistance

### Mix Ratio

By Weight                      **EP 5753 : H105**  
    100 : 22

### Product Data

Property	Units	EP 5753	H105	Mix
Material	-	Epoxy Resin	Formulated Amine	-
Appearance	-	Pale Liquid	Pale – Amber Liquid	Pale Liquid
Viscosity (25°C)	mPa.s	400 – 700	20 – 40	180 – 300
Density (25°C)	g/cm <sup>3</sup>	1.13 – 1.18	0.98 – 1.02	1.10 – 1.15

# Technical Data Sheet

## Working Time and Cure Speed

Property	Units	Typical Value
Pot life (200g, 25 °C)	Minutes	18 – 24
Cure Time (200g, 25 °C)	Hours	12
Full Cure (25 °C)	Days	7
Minimum Curing Temperature	°C	0

## Cured Properties

Properties	Standard	Units	Result (Full Cure)
Hardness	BS EN ISO 868	Shore D	83 – 87
Tensile Strength	BS EN ISO 527	MPa	78.0 – 82.0
Elongation at Break	BS EN ISO 527	%	4.0 – 6.0
Tensile Modulus	BS EN ISO 527	MPa	2000 – 2300
Flexural Strength	BS EN ISO 178	MPa	110.0 – 116.0
Flexural Modulus	BS EN ISO 178	MPa	2500 – 2800
Glass Transition Temperature (Tg)	DMA	°C	79 – 83

## 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 or suitable tooling systems, please contact Alchemie Ltd.

All surfaces should be clean; all dust, oil, grease and other contaminants should be removed. Do not apply resin if the ambient or substrate temperature is less than minimum curing temperature of 0 °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 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 0°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 1 hour, followed by 100°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 HARDENER H105 should be stored in original, unopened containers between 15 and 25°C.

If stored under the above conditions, ALCHEMIX EP 5753 and HARDENER H105 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  
H105 is supplied in 220g, 1.1kg, 5.5kg and 200kg containers.

(Please contact Alchemie Ltd for bulk supply)

# Technical Data Sheet

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## **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.

## **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.

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