

# Technical Data Sheet

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## ALCHEMIX<sup>®</sup> EP 5241

*Low Colour, UV Stabilized Epoxy Resin System  
80 – 85 Shore D Hardness*

ALCHEMIX EP 5241 is an epoxy resin specially designed for use in industrial applications requiring a strong, durable coating where low colour and high UV resistance is required. ALCHEMIX EP 5241 has excellent water resistance, chemical resistance, mechanical properties and excellent adhesion to a variety of substrates.

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### Special Features

- Low viscosity, easy to apply
- Low tendency to yellow on exposure to UV
- Excellent mechanical properties
- Excellent chemical and water resistance
- Excellent adhesion

### Mix Ratio

**EP 5241 : H5241**  
By Weight                      100 : 50

### Product Data

Property	Units	EP 5241	H5241	Mix
Material	-	Epoxy Resin	Formulated Amine	-
Appearance	-	Colourless liquid	Colourless liquid	Colourless liquid
Viscosity (25°C)	mPa.s	800 – 1,200	100 – 160	350 – 650
Density (25°C)	g/cm <sup>3</sup>	1.10 – 1.15	0.95 – 1.00	1.05 – 1.10

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## Curing Data

Property	Units	Typical Value
Pot life (200g, 25°C)	Hours	2 – 3
Cure Time (200g, 25°C)	Hours	48
Full Cure (25°C)	Days	7
Minimum Curing Temperature*	°C	18
Recommend Casting Thickness*	mm	5 – 15

\*See "Cure & Post Cure" section.

## Cured Properties

Properties	Standard	Units	Result (Post Cure)
Hardness	BS EN ISO 868	Shore D	80 – 85
Tensile Strength	BS EN ISO 527	MPa	60.0 – 65.0
Elongation at Break	BS EN ISO 527	%	3.5 – 5.5
Flexural Strength	BS EN ISO 178	MPa	75.0 – 80.0
Flexural Modulus	BS EN ISO 178	MPa	2000 – 2400
Glass Transition Temperature (T <sub>g</sub> )	DMA	°C	60 – 65

## Method of Use

### **Preparation**

Prior to use, ensure that the resin is compatible with the substrates, reinforcements or fillers being used. Inspect both components 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 either component 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. Do not apply resin if the ambient

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or substrate temperature is less than minimum curing temperature, see "Curing Data" section.

## ***Mixing and Application***

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. Vacuuming the mixed material will help produce a void free cured part. The two components should be mixed and applied within the pot life.

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

The system is designed to be used and cured at room temperature. The cure rate of ALCHEMIX EP 5241 is affected by temperature, the product must be cast at temperatures greater than 18°C. Incomplete cure could occur if cast in thin section. 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 48 hours at 25°C. Incomplete cure can result in slight distortions or deformations of the components if forces are applied. The recommended casting thicknesses stated above may not apply to small or large volume castings. Thicker castings will tend to shrink more than thinner castings due to the amount of heat generated.

It is not necessary, but if desired, a step wise post cure treatment can be used to maximise cured properties. Allow the product to cure at room temperature for at least 24 hours, then heat to 40°C for 1 hour, followed by 60°C for 1 hour, followed by 80°C for 3 hours. To prevent any distortion during the post cure cycle, the part 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 5241 and HARDENER H5241 should be stored in original, unopened containers between 15 and 25°C. If stored at lower temperatures for prolonged periods of time, ALCHEMIX EP 5241 can crystallize, see "Preparation" section for more details.

If stored under the above conditions, ALCHEMIX EP 5241 and HARDENER H5241 will have a shelf life of 12 months.

## **Packaging**

ALCHEMIX EP 5241 is supplied in 1kg, 5kg, 25kg and 200kg containers.  
HARDENER H5241 is supplied in 500g, 2.5kg, 12.5kg and 200kg containers.

(Please contact Alchemie Ltd for bulk supply)

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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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