

# GELCOAT EP 4063

*Two Part Epoxy Gelcoat System*  
 80 – 85 Shore D Hardness

GELCOAT EP 4063 is a two component, room temperature curing surface coat. GELCOAT EP 4063 is designed for use in pre-preg carbon fibre tooling, RTM tools, RIM tools, PU moulding tools, vacuum forming moulds, negatives, applications requiring high heat and chemical resistance and negatives where very fine surface finishes are required.

## Special Features

- Excellent chemical resistance (styrene, methyl methacrylate)
- High heat distortion temperature
- Easy application on vertical surfaces
- Highly polishable finish

## Mix Ratio

**EP 4063 : H4063**  
 By Weight 100 : 25

## Product Data

Property	Units	EP 4063	H4063	Mix
<b>Material</b>	-	Epoxy resin	Formulated amine	Epoxy
<b>Appearance</b>	-	Grey thixotropic paste	Amber liquid	Grey thixotropic paste
<b>Viscosity (25°C)</b>	mPa.s	Thixotropic paste	100 – 160	Thixotropic paste
<b>Density (25°C)</b>	g/cm <sup>3</sup>	1.13 – 1.18	0.92 – 0.97	1.08 – 1.13
<b>Pot Life (200g, 25°C)</b>	Minutes	-	-	40 – 70
<b>Tack Free Time (1mm, 25°C)</b>	Minutes	-	-	60
<b>Demould Time (200g, 25°C)</b>	Hours	-	-	24 may be longer in cold conditions

**Cured Properties**

Properties	Standard	Units	Result (Post Cure)
Hardness	BS 2782: Part 3: Method 365B	Shore D	80 – 85
Tensile Strength	BS 2782: Part 3: Method 320A	MPa	TBC
Elongation at Break	BS 2782: Part 3: Method 320A	%	TBC
Flexural Strength	BS 2782: Part 3: Method 335A	MPa	TBC
Flexural Modulus	BS 2782: Part 3: Method 335A	MPa	TBC
Heat Distortion Temperature (HDT)	TMA	°C	150 – 160
Maximum Operating Temperature for Pre-Preg Tools	Alchemie STM	°C	125

**Method of Use**

***Mould Preparation***

Mould surfaces should be treated with ALCHEMIX R7 or suitable release agent. Porous materials should be well sealed.

***Mixing and Application***

GELCOAT EP 4063 should be mixed with HARDENER H4063 according to the indicated mixing ratio. Both components should be thoroughly mixed, care should be taken to avoid air entrapment and make certain that material at bottom and sides of container is thoroughly stirred into centre. The mixed material should be evenly applied to the mould by brush, in 0.5mm thick layers. A minimum of two layers should be applied, with a combined thickness of less than 2.5mm.

To ensure that each coat adheres, wait until the first coat has gelled to a tack free state before applying successive coats. The gelcoat is tack free if when a finger is lightly drawn across the surface no material sticks to it, but if firmly pressed, a mark will remain on the surface. The laminating resin or coupling coat can be applied when the final layer of gelcoat has reached a tack free state. The tack free stage is critical in the gelcoating process and will vary between different gelcoats. If the tack free stage is missed then it is likely that de-lamination between the gelcoat layers or the gelcoat and backing resin may result.

EP 4063 will produce significant amounts of heat when curing, we advise mixing only small quantities.

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## ***Laminating***

ALCHEMIX EP 574 high HDT epoxy laminating resin or ALCHEMIX EP 4350 high HDT laminating paste are recommended for use with GELCOAT EP 4063.

If laminating with ALCHEMIX EP 574, we recommend using chopped strand (glass) mat as the reinforcement. Woven cloth, either glass or carbon fibre, is not recommended. Laminating should begin when the gelcoat has reached a tack free state (see above).

If using ALCHEMIX EP 4350, a coupling coat should be used. We recommend using either ALCHEMIX EP 4062C or ALCHEMIX EP 574 with one layer of chopped strand mat. Full technical data is available for these products. Please contact Alchemie Ltd for more information.

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

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 40°C for 1 hour, followed by 60°C for 1 hour, followed by 80°C for 1 hour, followed by 100°C for 1 hour, followed by 120°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.

The product can be used without post cure or with partial post cure, but will not achieve full high temperature properties. The product can be post cured at higher temperatures (up to 160°C), however, care should be taken if using the product at these temperatures as any air voids from the laminating process can cause bubbling or delamination between the layers.

## **Storage**

GELCOAT EP 4063 and HARDENER H4063 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, GELCOAT EP 4063 / H4063 will have a shelf life of 12 months, from the date of production.

## **Packaging**

GELCOAT EP 4063 is supplied in 1kg, 5kg and 10kg containers.  
HARDENER H4063 is supplied in 250g, 1.25kg and 2.5kg 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 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.

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