

GELCOAT EP 4093

*Two Part Epoxy Gelcoat System
90 Shore D Hardness*

GELCOAT EP 4093 is a colourless, two component, brushable, room temperature curing surface coat. GELCOAT EP 4093 is designed for use in vacuum forming moulds, applications requiring high heat resistance and negatives where very fine surface finishes are required.

Special Features

- Excellent chemical resistance
- High heat distortion temperature
- Excellent polishability
- Colourless

Mix Ratio

By Weight **EP 4093 : H4093**
 100 : 20

Product Data

Property	Units	EP 4093	H4093	Mix
Material	-	Epoxy resin	Formulated amine	Epoxy
Appearance	-	Pale blue viscous liquid	Colourless liquid	Pale blue viscous liquid
Viscosity (25°C)	mPa.s	Viscous liquid	12 – 20	Viscous liquid
Density (25°C)	g/cm ³	1.14 – 1.18	0.90 – 0.95	1.09 – 1.19
Pot Life (200g, 25°C)	Minutes	-	-	35 – 40
Demould Time (200g, 25°C)	Hours	-	-	8 – 14

Cured Properties

Properties	Standard	Units	Result (Full Cure)
Hardness	BS 2782: Part 3: Method 365B	Shore D	85 – 90
Tensile Strength	BS 2782: Part 3: Method 345A	MPa	35 – 40
Elongation at break	BS 2782: Part 3: Method 320A	%	2.0 – 3.0
Flexural Modulus	BS 2782: Part 3: Method 335A	MPa	3000 – 3500
Flexural Strength	BS 2782: Part 3: Method 335A	MPa	110 – 130
Heat Distortion Temperature (HDT)	TMA	°C	110 – 115

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 4093 should be mixed with HARDENER H4093 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. Pay special care on vertical surfaces, as applying too much material may result in sagging. 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 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.

Laminating

Contact Alchemie Ltd for information on suitable epoxy laminating resins, reinforcements and epoxy pastes.

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. Then allow the product to slowly return to room temperature. The product can be used without post cure, but will not achieve full high temperature properties.

Storage

GELCOAT EP 4093 and HARDENER H4093 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 4093 / H4093 will have a shelf life of 12 months, from the date of production.

Packaging

GELCOAT EP 4093 is supplied in 1kg and 5kg containers.
HARDENER H4093 is supplied in 200g and 1kg 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.

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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