

Technical Data Sheet

GELCOAT EP 404

*Two Part Epoxy Gelcoat System
87 Shore D Hardness*

GELCOAT EP 404 is a two component, silicon carbide filled, brushable, room temperature curing surface coat. GELCOAT EP 404 is designed for use in copying moulds, masking frames, jigs, gauges and spot checking features. This product cannot be machined.

Special Features

- Excellent abrasion resistance
- Excellent solvent resistance
- Excellent durability

Mix Ratio

By Weight **EP 404 : H404**
100 : 10

Product Data

Property	Units	EP 404	H404	Mix
Material	-	Epoxy resin	Formulated amine	Epoxy
Appearance	-	Blue thixotropic paste	Amber liquid	Blue thixotropic liquid
Viscosity (25°C)	mPa.s	Thixotropic paste	70 – 110	Thixotropic liquid
Density (25°C)	g/cm ³	1.50 – 1.60	0.96 – 1.01	1.42 – 1.52
Pot Life (200g, 25°C)	Minutes	-	-	40 – 60
Demould Time (200g, 25°C)	Hours	-	-	12 – 16

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Cured Properties

Properties	Standard	Units	Result (Post Cured)
Hardness	BS EN ISO 868	Shore D	85 – 89
Compressive Strength	BS EN ISO 604	MPa	110 – 120
Flexural Strength	BS EN ISO 178	MPa	60 – 70
Glass Transition Temperature (Tg)	DMA	°C	116 – 122

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 404 should be mixed with HARDENER H404 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 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

For general use, ALCHEMIX EP 502 or EP 5752 epoxy laminating systems are recommended for use with GELCOAT EP 404. Full technical data is available for these products.

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

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hours, then heat to 80°C for 1 hour, followed by 100°C for 1 hour, followed by 110°C for 2 hours, followed by 130°C for 4 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.

Storage

GELCOAT EP 404 and HARDENER H404 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 404 / H404 will have a shelf life of 12 months, from the date of production.

Packaging

GELCOAT EP 404 is supplied in 1kg and 5kg containers.
HARDENER H404 is supplied in 100g and 500g 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 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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