

Description

EG60 Epoxy Tooling Gelcoat for use as a surface coat to achieve a strong, durable epoxy based mould. EG60 is combined with either traditional epoxy resin and glass reinforcement or our EMP60 Epoxy Moulding Paste.

The tooling gelcoat is pigmented bright green making it easy to see scratches or blemishes in the surface, whilst at the same time making gelcoat application on the cured mould easy to see.

Key Features

- Easy to apply
- Smooth Consistency
- Excellent Polished Finish
- Tough Cured Finish
- Excellent Solvent Resistance

Typical Uses

- Epoxy Tooling Gelcoat
- Combines with EMP60 Epoxy Moulding Paste
- Ideal tool surface for epoxy based end products

Specification

The table below shows the typical uncured properties:

Property	Unit	Resin	Hardener	Combined
Material	-	Epoxy Resin	Formulated Amine	Epoxy
Appearance	-	Green Paste	Amber Liquid	Green Paste
Viscosity 25 °C	mPa.s.	Paste	300 - 400	Paste
Density 25 °C	g/cm³	1.60 - 1.70	1.00 - 1.05	1.50 - 1.60

How To Use

The EG60 Epoxy Tooling Gel Coat is a chemical product for professional use. Please read and understand the safety and technical information before use.

Follow the guidelines for safe use outlined in the SDS which include the use of appropriate hand and eye protection during mixing and use.

Mix Ratio

Mix Ratio 100:10 by Weight

EG60 Epoxy Tooling Gel Coat should be mixed with its Hardener at a ratio of 100 parts of Gel Coat to 10 parts of hardener, by weight.

When working with any epoxy based resin or gelcoat, adherence to the correct mix ratio is essential. Failure to do so will result in a poor or only partial cure of the resin, greatly reduced mechanical properties and possibly other adverse effects. Under no circumstances add 'extra hardener' in an attempt to speed up the cure time; epoxies **do not** work in this way.

Mixing Instructions

Weigh or measure the correct ratio of gelcoat and hardener into a mixing cup. Mix thoroughly until the hardener is dispersed completely and evenly through the gelcoat. The 2 parts should be mixed for a good few minutes to ensure that are fully combined. Make certain to mix all the resin and hardener from the edges of the pot, as unmixed parts will not cure and compromise the surface of the mould.

Warming the gelcoat slightly can, in some cases, help to lower viscosity and assist with pouring and mixing. If doing so, the pot life will be reduced accordingly, be sure to use your resin before this time and monitor the temperature to avoid exotherm.

Application Instructions

Apply a thick and even coat of mixed resin to the surface of the part. Be sure that the resin evenly coats all areas of the pattern, including any complex corners etc. Avoid the gel from pooling in any low spots on the pattern. The resin should be as thick as possible without falling or running off the part, this will provide a good thickness of tooling resin to flat and polish in subsequent stages.

Once this coat is applied, leave for between 2 and 3 hours to reach the 'B' stage. The time it takes to reach this stage will vary depending on the ambient temperature, warmer conditions will reduce cure time whilst the resin will cure slower if the temperature is cooler. The resin should have firmed up with a tack to the surface, but no longer be sticky or liquid in any way. If this stage is missed and the gel cures further than this, it will need to be thoroughly keyed to provide a texture for any subsequent layer and improve bonding.



Although not always necessary, two or more layers can be built up to achieve a thicker coating not exceeding 2.5mm in total. This can be useful for steep sided or complicated patterns where one thick coating may run off or pool.

Pot-Life / Working Time / Cure Time

Once the gelcoat has been mixed with the hardener, the reaction will start to progress and begin to give off heat (exotherm) which will further accelerate the cure of the gelcoat, especially when the gelcoat is in a large volume or in a tub.

Transfer the gelcoat onto the pattern as soon as possible to extend the working time and avoid the risk of uncontrollable rapid cure in the mixing pot.

As with all epoxy based resins/gelcoats, the pot-life/working time will vary significantly depending on the ambient temperature, the starting temperature and quantity of the material.

EG60 Epoxy Tooling Gel Coat can be used in ambient temperatures between 15°C (59°F) and 30°C (86°F). For best results, an ambient temperature of at least 20°C (68°F) is recommended. Ensure that both gelcoat and hardener containers are within this temperature range before use.

The table below gives an indication of pot-life and cure properties:

Pot-Life @ 25°C	Gelation @ 25°C	Demould Time @ 25°C
43 - 53 mins	2 - 3 hours	12 - 16 hours

Full Cure / Post-Cure

As with most epoxy systems, where parts cure in normal ambient temperatures, full cure is not reached for several days. Although parts will be handleable after the listed demould time, at 25°C full mechanical properties will take at least 14 days to develop.

EG60 Epoxy Tooling Gel Coat can be post cured with a range of different post-cure cycles depending on the desired outcome. The main objective is usually related to improved mechanical performance and elevated HDT/operating temperature.

Undertaking a Post-cure to moulds that will be used at or exposed to elevated operating temperatures is strongly recommended to prevent distortion of the mould when put into service. Failure to properly post cure a mould can lead to distortion and blistering, resulting in deformation to the final part. Additionally, as the gelcoat softens under heat, the effectiveness of mould release agents can be reduced, thus increasing the risk of adhesion to the mould.

A good all round post cure cycle for the EG60 Epoxy Tooling Gel Coat is as follows:

- 24 hours at 25°C
- 2 hours at 40°C
- 2 hours at 50°C
- 2 hours at 60°C

Disclaimer

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 Easy Composites Ltd gives no warranty; express or implied, and all products are sold upon condition that purchasers will make their own tests to determine the quality and suitability of the product for their particular application and circumstances.

Easy Composites Ltd shall be in no way responsible for the proper use and service of the product, nor for the safeguarding of personnel or property, all of which is the duty of the user. Any information or suggestions are without warranty of any kind and purchasers are solely responsible for any loss arising from the use of such information or suggestions. No information or suggestions given by us shall be deemed to be a recommendation to use any product in conflict with any existing patent rights. Before using any of our products, users should familiarise themselves with the relevant technical and safety datasheets provided by Easy Composites Ltd.

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Mechanical Properties

The Table below gives an indication of Cured Gel Coat Properties:

Property	Unit	Test Method	Value
Hardness	Shore D	BS2782:3 365B	86 - 90
Compressive Strength	MPa	BS2782:3 345A	110 - 120
Flexural Strength	MPa	BS2782:3 335A	35.0 - 45.0
Flexural Modulus	MPa	BS2782:3 335A	4500 - 5500
H.D.T.	°C	TMA	50 - 60

Transport and Storage

EG60 Epoxy Tooling Gel Coat and hardener should be kept in tightly sealed containers during transport and storage. Both the gelcoat and hardener should be stored in ambient conditions of between 10°C (50°F) and 25°C (77°F).

When stored correctly, the resin and hardener will have a shelf-life of 12 months. Although it may be possible to use the resin after a longer period, a deterioration in the performance of the resin will occur.

Pay particular attention to ensuring that containers are kept tightly sealed. Epoxy hardeners especially, will deteriorate quickly when exposed to air.

RoHS Compliance Statement

Easy Composites Ltd is committed to minimising the environmental impact of our operations and to complying with all applicable environmental regulations and standards.

We hereby confirm that EG60 complies with the requirements of:

Directive 2011/65/EU of the European Parliament and of the Council (RoHS 2),

Directive (EU) 2015/863, amending Annex II to Directive 2011/65/EU (RoHS 3).

These directives restrict the use of certain hazardous substances in electrical and electronic equipment.