

Clear Polyester Spray Gel

Key Features

- High Quality Polyester GelCoat
- UV Stable
- Very Clear Curing
- Thixotropic and pre-accelerated

Product Description

Superior quality, UV stable, clear polyester gelcoat suitable for a wide range of gelcoating operations including use as a clear gelcoat for cosmetic appearance carbon fibre and other advanced materials.

Use with carbon fibre for decorative/cosmetic applications.

It is widely known that for high performance structural applications using carbon fibre or other advanced reinforcements (aramid, UHMWPE etc.) more advanced resin systems, such as epoxy, should be used. There are however circumstances where the structural performance of a laminate is less important, and properties such as appearance, UV stability and cost are higher priorities. In these situations, a high quality polyester gelcoat resin can be used with carbon fibre reinforcement (often just a single layer, combined with additional glass reinforcement) to produce attractive, UV stable, carbon fibre finish laminates.

For the best results, we recommend a high quality clear polyester laminating resin and extensive use of a Bristle Roller to significantly reduce air entrapment and improve the cosmetic appearance of the laminate when working with a clear isophthalic gelcoat or npg gelcoat.

Properties

The table below shows the typical uncured resin properties:

Property	Units	Method	Value
Brookfield Viscosity 23°C	mPas	ISO 2555	2200
Styrene Content	%	SFS 4864	46
Density	g/cm ³	ISO 2811	1.1
Pot Life @ 20°C 2% MEKP	minutes	ICON 002	25

How to Use

GCX Clear Polyester Spray Gel is a chemical product for professional use. It is essential to 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.

Catalyst Ratio

Catalyst Ratio 1 - 2% MEKP by Weight

GCX Clear Polyester Spray Gel should be mixed with MEKP Catalyst at a ratio of 1-2%, by weight. Resin to catalyst ratios above are listed as parts by

weight although parts by volume will effectively yield the same results.

Our GCX Clear Polyester Spray Gel can be mixed with different amounts of MEKP catalyst to achieve different pot life and cure times at different temperatures.

Be aware that the higher the ambient temperature, the quicker the resin will cure and thus adding high levels of MEKP should be avoided to ensure you get a reasonable pot life and reduce the chance of an exothermic reaction.

Mixing Instructions

GCX Clear Polyester Spray Gel is a highly reactive (fast curing) resin system. Only weigh out and mix as much resin as you can use within the pot life.

Weigh or measure the exact correct ratio of resin and catalyst into a straight sided container. Using a suitable mixing stick begin to mix the resin and catalyst together to combine them completely.

Spend at least one minute mixing the resin and catalyst together, paying particular attention to the sides and base of the container. Remember: Any resin that has not been thoroughly combined with catalyst will not cure.

Once you have finished mixing in one container, it is good practice to transfer the mixed resin into a second container and undertake further mixing of the resin using a new mixing stick. Doing so will eliminate the risk of accidentally using unmixed resin from the bottom or sides of the container.

Pot-Life / Working Time / Cure Time

GCX Clear Polyester Spray Gel is a highly reactive resin system and once the resin has been mixed with the catalyst, the reaction will start to give off heat (exotherm) which will further accelerate the cure of the resin, especially when the resin is in the mixing pot.

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

As with all Polyester resins, the pot-life/working time will vary significantly depending on the ambient temperature, the starting temperature of the resin, catalyst ratio and the amount of resin mixed.

GCX Clear Polyester Spray Gel can be used in ambient temperatures between 15°C (59°F) and 30°C (86°F). For best results, an ambient temperature of 20°C (68°F) is recommended. Ensure that both resin and catalyst containers are within this temperature range before use.

Once the resin is in the laminate, it is much less likely to exotherm and gel before you want it to.

The resin, mould and workshop should all be at, or above, 15°C before curing is carried out.

The backing up time at 2% MEKP is typically 2 hours.

Typical demould time is 24hrs at 20°C however full cure will not be reached for a further 7 days.

Full Cure / Post-Cure

As with most resin 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 20°C), full mechanical properties will take at least 7 days to develop in (at 20°C). Where possible, avoid exposing the cured resin to full service rigours for at least this time.

As with many post-cure cycles for resins, the post-cure cycle for our GCX Clear Polyester Spray Gel is not too sensitive and a range of different post-cure cycles will produce good results,

The recommended cycle is as follows. The laminate should be allowed to cure for 24 hours at 20°C, and then be oven cured for 16 hours at 40°C.

Mechanical Properties

Cured Resin Properties

	Units	Method	Value
Hardness	Barcol	ASTM D2583	42.5
Heat Deflection Temperature	°C	ISO 75-3 (A)	70
Flexural Strength	MPa	ISO 178	134.6
Flexural Modulus	GPa	ISO 178	3.93
Tensile Strength	MPa	ISO 527	65.4
Elongation at Break	%	ISO 527	4.01

Transport and Storage

Resin and Catalyst should be kept in tightly seal containers during transport and storage. Both the resin and catalyst should be stored in ambient conditions of between 10°C (50°F) and 25°C (77°F).

When stored correctly, the resin will have a shelf-life of 3 months. Although it may be possible to use the resin after a longer period, a deterioration in the performance of the resin will occur, especially in relation to clarity and cure profile.

Pay particular attention to ensuring that containers are kept tightly sealed.

Disclaimer

This data is not to be used for specifications. Values listed are for typical properties and should not be considered minimum or maximum.

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