Technical Datasheet

GCX
Clear Polyester Spray Gel

Description

GCX Clear Polyester Spray Gel is a clear, low viscosity isophthalic NPG polyester gelcoat, suitable for the manufacture of composite components such as boat hulls, hatches, decks, vehicle panels, architectural and general composite mouldings. GCX Clear Polyester Spray Gel is highly UV stable and can be used clear, for cosmetic carbon fibre or decorative laminates, or pigmented to any colour.

Key Features

- UV Stable
- Cures with high clarity
- Thixotropic and pre-accelerated

Typical Uses

- Used as a protective gelcoat for parts made with polyester resin
- Produces UV stable attractive finish to moulded parts
- For best results use in combination with high quality clear polyester laminating resin

Specification

The table below shows the typical uncured resin properties:

Property	Unit	Test Method	Value
Brookfield Viscosity 23°C	mPas	ISO 2555	2200
Styrene Content	%	SFS 4864	46
Density	g/cm3	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.

The MEKP catayst ratio for GCX Clear Polyester Spray Gel can be varied to alter the pot life and cure time at different temperatures.

Be aware that the higher the ambient temperature, the quicker the resin will cure, therefore 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, 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 a concentrated volume such as the mixing pot.

Transfer the resin from the mixing container onto the part as soon as possible to extend the working time and avoid the risk of uncontrollable rapid cure in the 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 applied over a larger area, it is much less likely to exotherm and prematurely thicken to a gel.

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.

Application

GCX is designed for spray application and should be applied with a Gelcoat Cup gun using a 4mm nozzle. Application should typically be around 0.5mm, ~500g/m² to avoid sagging and draining on the surface. If a thicker layer of gelcoat is required then this can be built up in multiple layers to achieve the desired amount. Multiple thin layers are recommended over one thick one.

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 (at 20°C). Where possible, avoid exposing the cured resin to full service rigours for at least this time.

The recommended post cure cycle for GCX is 24hrs at 20°C followed by 16 hours at 40°C.

Mechanical Properties

Tables shows typical properties for fully cured sample.

Property	Unit	Value
Density	g/cm³	1.08 - 1.12
Flexural Strength	MPa	134.6
Tensile Strength	MPa	65.4
Elongation at Break	%	4.01
HDT	°C	70
Gel Time	min	22-28

Transport and Storage

GCX should be kept in tightly seal containers during transport and storage and should be stored in ambient conditions of between 15°C (50°F) and 25°C (77°F) away from direct sunlight.

When stored correctly, the resin and hardener will have a shelf-life of 3 months.

Disclaimer

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