

Crystic® Gelcoat Handling Guide



Storage

Catalyst

Planning

Application

Temperature

Preparation

Finishing



Scott Bader has long been recognised for its high quality gelcoats and long-term customer partnerships, who rely on the consistently high gelcoat performance and usability.

This guide has been designed to help customers get the best results from Scott Bader gelcoats.

Corporate and Social Responsibility

Scott Bader has a long-standing reputation for ethical, social and environmental concern and responsibility. This has been facilitated by our unique and progressive history and company structure.

Scott Bader was founded in 1921 by Ernest Bader. Ernest wanted to create a company whereby the well-being is entrusted to those who work in it by championing democratic involvement within the organisation. In 1951 the company was gifted to the workers and the shares of the chemical manufacturing company were transferred to Scott Bader Commonwealth Limited ('the Commonwealth'). The Commonwealth is a company limited by guarantee and a registered charity, thereby incorporating Scott Bader into the local and wider community.



TAKING DELIVERY

CHECKLIST

When a delivery arrives, check the order details/ shipping advice for:

- Packing condition
- Correct quantity
- Product Code: type, colour, spray/brush
- Batch number



ALWAYS store catalyst separately from gelcoat and resin



STORAGE

- Keep in a separate storage room and out of direct sunlight
- Keep stock in original kegs and drums with lids and caps tightly closed
- Ensure kegs/ drums are sitting on pallets that are in good order
- Pay attention to product shelf life and exercise regular stock rotation
- Store below 20°C. If storage is cold (e.g. outside shed), the product needs to be acclimatised to an ambient temperature (18 - 23°C) before use



MOULD PREPARATION

CHECKLIST

- Clean the mould thoroughly to remove any debris, dust or loose contaminants
- Apply an appropriate release agent to the surface of the clean mould, following the instructions carefully
- For a new mould, ensure that the surface is sealed with an appropriate mould sealer prior to application of the chosen release agent
- Keep area used for gelcoating dust free

The better the production mould, the better the end product.



ALWAYS

wear protective clothing, gloves and goggles



MATERIAL PREPARATION

- Check that the drums or kegs picked from storage are in good condition and free from any damage prior to opening
- Check product code for correct colour and type
- Ensure enough product is mixed to spray or brush the mould in one session, ensuring even and consistent thickness
- Using a low shear mechanical mixer, mix the gelcoat in its original keg or drum, and leave to stand for 10 minutes to allow the thixotropy to recover
- Prior to use, make sure the gelcoat is at its optimal working temperature of 18-25°C (the absolute minimum temp. is. 15°C)
- Use a clean pail if the gelcoat is decanted from its original packaging



CHECKING SPRAY EQUIPMENT

CHECKLIST

- Make sure filters are clean and clear
- Select an appropriate sized spray gun, nozzle and angle to best suit the mould size and degree of complexity
- Check and adjust the spray pattern
- Use the lowest possible gun pressure that will achieve a uniform spray fan pattern

SPRAY OPERATOR PROTECTIVE CLOTHING

Protective disposable suit, face mask and gloves must be worn at all times during spraying.

Where there is a risk of ignition from static electricity, anti-static protective clothing should be worn.

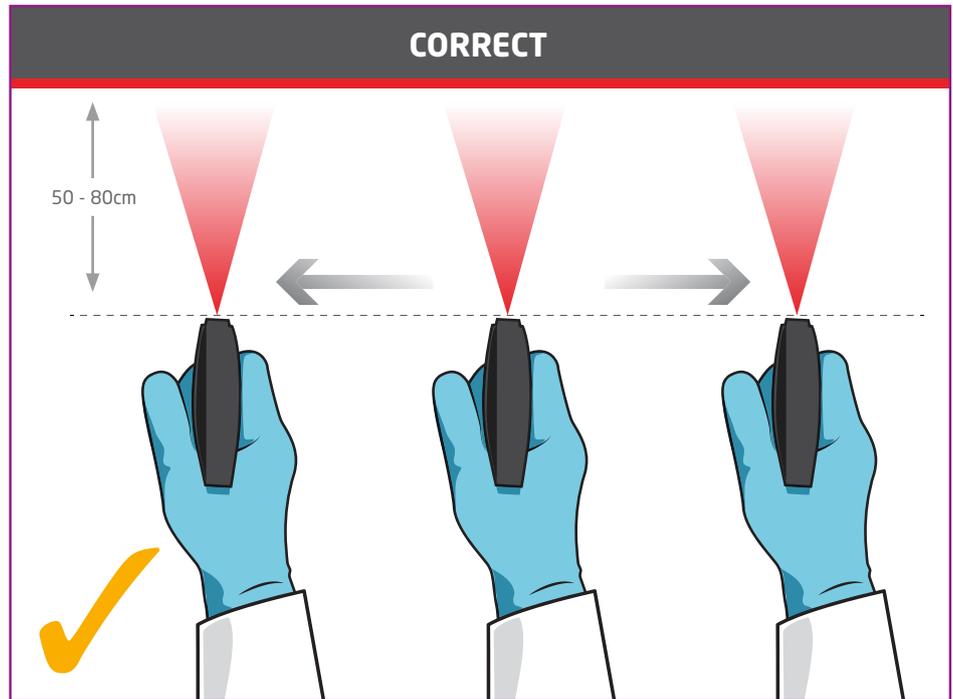
Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.



SPRAY APPLICATION

Spraying should be carried out in a properly ventilated spray booth, in a separate part of the workshop.

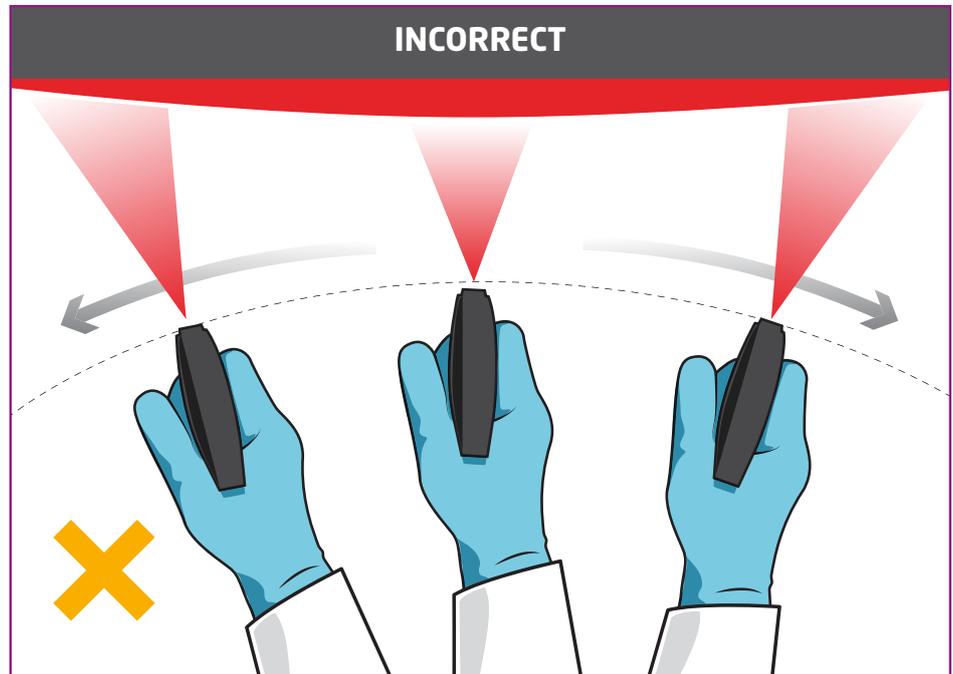
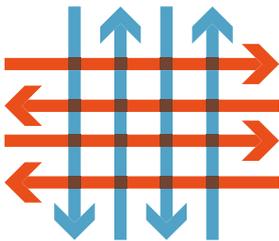
The mould to be sprayed should be positioned in the most practical position ergonomically, to allow for an even coverage and to reduce fatigue of the operator.



Keeping the wrist flexible, start by spraying away from the mould and bring the gun towards it maintaining an even left to right spraying pattern at a consistent distance of approximately 50 - 80cm. The gun should always be perpendicular to the mould.

An arched spraying motion as per the illustration below, will result in an uneven coverage, as will tilting the gun vertically.

Spraying with continuous parallel strokes, left to right then up and down to lay down a mist coat, this is best practice to avoid colour faults. (red arrow first pass, blue arrows second pass).



NB: Please refer to individual product technical data sheets for specific application details or contact our technical services department for further advice and assistance

Test gelcoat when coat is still wet.
The wet film thickness target should be 500 - 600 μ .

WORKING AREA

Gelcoating should be carried out in a purpose-built spray booth, in a separate area of the workshop.

WORKSHOP SET-UP

- Effective ventilation
- Good general lighting
- Dust free environment
- Temperature range 18-25°C (66-77°F)
- Humidity max. 80%



Image courtesy of Magnum Venus Products Europe Ltd

BRUSH APPLICATION

ALWAYS
wear protective clothing,
gloves and goggles



CHECKLIST

- Always use the best quality lacquer brushes with long and soft hair
- Stir gelcoat in its original packaging before use
- Decant the required amount of gelcoat into a clean pail
- Add 2% M50 Catalyst to the gelcoat and mix thoroughly to ensure even distribution of catalyst through the liquid
- Apply immediately





BRUSH APPLICATION

Apply the gelcoat using consistent continuous strokes to achieve an even wet film thickness.

Test gelcoat when coat is still wet. The wet film thickness target should be 500 - 600 μ .

Use the thickness gauge measuring tool to check the wet film thickness during application.

Test thickness when coat is still wet to achieve correct film depth of 0.5 - 0.6mm, depending on use of final product

BEFORE STARTING LAMINATION

1.5 - 2 hours

Depending on room temperature, (16°C will take quite a bit longer than 22°C) the gelcoat film will need approximately 1.5 - 2 hours to cure, by which time it should then be tack-free and ready for laminating.

Deep pocketed areas of the mould can sometimes take a little longer to cure, but can be aided by improving ventilation/ repositioning the mould.

Ensure an even and complete cure has occurred before commencing lamination.



CURE TIME

DO NOT LEAVE THE GELCOAT FILM TO CURE FOR LONGER THAN 8 HOURS BEFORE STARTING LAMINATION



8 HOURS

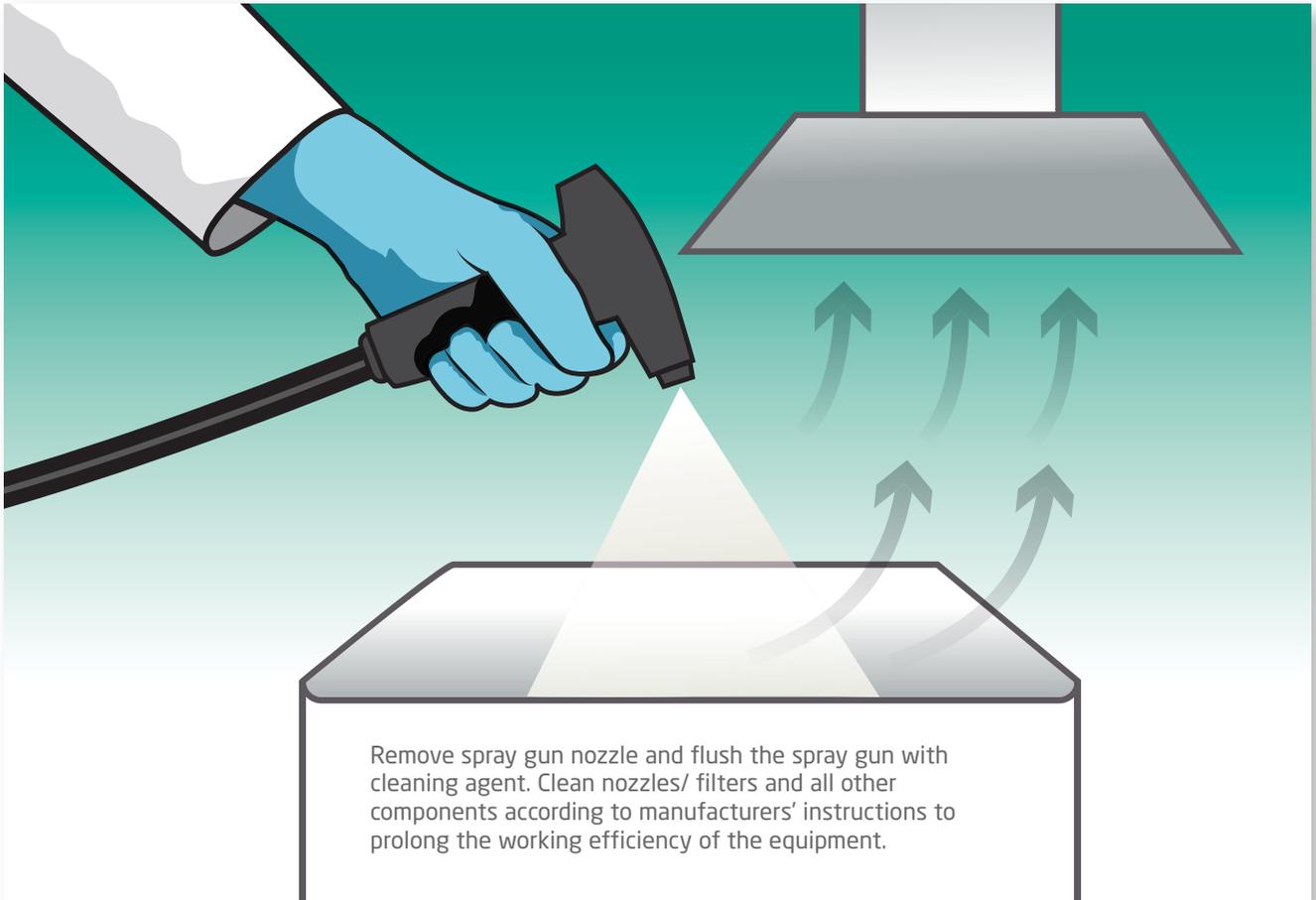
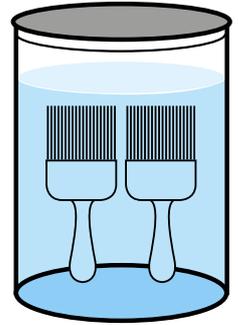
CLEANING AND MAINTAINING EQUIPMENT

If brushes are to be re-used, clean thoroughly with solvent in a dedicated area or cleaning room with adequate ventilation to remove fumes.

It is crucial that all residual gelcoat is removed from brushes to avoid contaminating a new batch when the brush is re-used.

Washed brushes should then be stored, immersed in solvent in a container with a tightly fitting lid for future use.

Brushes need to be clean, dry and free from solvent when used for gelcoat application. Dry bristles thoroughly before use to ensure no moisture is introduced from brush to gelcoat.



Remove spray gun nozzle and flush the spray gun with cleaning agent. Clean nozzles/ filters and all other components according to manufacturers' instructions to prolong the working efficiency of the equipment.



FINAL STEPS - Storage and Disposal

Tightly close the lid of the gelcoat keg after use and store any unused product in the store room.

Alternatively, if the keg is empty, follow existing regulations for safe waste disposal.



Common reasons behind faults in gelcoats

Colour Tearing

- Pigment separated from resin
- Improper spray technique
- Long geltime, sagging

Colour Separation

- Insufficient mixing
- Sagging, drainage
- Poor gelcoat application

Colour Mottling

- Gelcoat low in thixotropy
- Poor pigment compatibility
- Viscosity too low

Parallel Cracks

- Flex cracking
- Gelcoat too thick
- Laminate too thin/ flexible

Star Cracking

- Reverse impact
- Gelcoat too thick
- Crack pattern transferred from mould

Crazing

- Chemical attack
- Excessive heat
- Contamination

Blisters in Laminates

- Water ingress
- Damp reinforcement
- Air voids

Gelcoat Blisters

- Air voids on release
- Unreacted catalyst
- Solvent contamination

Fibre Pattern

- Gelcoat too thin
- High exotherm in laminate
- Insufficient cure/ released too soon



Common reasons behind faults in gelcoats

Colour Specks

- Poorly ground/ mixed pigments
- Contamination
- Poorly maintained equipment

Porosity

- Gelcoat too viscous to release air
- Cold gelcoat and/ or mould
- Gelled too quickly, entrapping air

Water-marking/Etching

- Areas of thin, double gelcoating on mould
- Two colours gelcoated on mould
- Solvent attack

Dimpling

- Too heavy wet-on wet spray application
- Insufficient consolidation
- Contamination

Wrinkling

- Insufficient cure
- Gelcoat too thin
- Back-up too early

Sagging

- Gelcoat too thick
- Geltime too long
- Viscosity/ thixotropy too low

Gelcoat Peeling

- Contamination
- Gelcoat too fully cured
- Geltime too long - release wax dissolved

De-wetting (Brush)

- Brush gelcoat applied too thinly
- Incompatible release system
- Contamination

De-wetting (Spray)

- Spray gelcoat applied too thinly
- Incompatible release system
- Contamination

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For more information on Scott Bader products, visit our website

All information correct at time of printing.

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