

Technical Information

NCS ULTRAGEL 22 NAT PA E

NDS1302/735REV02

**SUPER FLOW CLEAR
BRUSH GELCOAT
LLOYDS APPROVED**

DESCRIPTION

NCS ULTRAGEL 22 NAT PA E is an isophthalic, clear polyester gelcoat specially formulated to give excellent levelling and air release properties. The gelcoat is thixotropic and preaccelerated, with its viscosity and thixotropy having been optimised so that it flows evenly and sagging is minimised on inclined and vertical surfaces.

NCS ULTRAGEL 22 NAT PA E is a resilient and impact-resistant gelcoat suitable for general mouldings where excellent durability and weather resistance are a requirement. The rheology of NCS ULTRAGEL 22 NAT PA E ensures that it can be brush applied readily without the typical drag resistance and brush marks.

NCS ULTRAGEL 22 NAT PA E is suitable for use on boat hulls that are subjected to long term immersion in water, and displays good resistance to a variety of chemical environments.

FEATURES	BENEFITS
Thixotropic	Eliminates drainage
Preaccelerated	Requires only the addition of the recommended catalyst
UV-stabilised	Improved weather resistance
Specially promoted	Rapid cure
Improved rheology	Excellent flow and levelling with low porosity
Good Colour	Readily pigmentable

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OTHER VERSIONS

NCS ULTRAGEL 22 P1075 PA E	White brush viscosity version
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TYPICAL LIQUID PROPERTIES

PROPERTY	SPECIFICATION	NCS TEST METHOD
Viscosity @ 25°C	45 000 - 85 000	5.3
Geltime @ 25°C, 2 phg* BUTANOX M50, minutes	10 - 18	8
Tack-free time (film), hours	15 minimum	25
Liquid appearance	Opaque pink	2
Stability in the dark @ 25°C, months	6 minimum	4.1
*phg = parts per hundred gelcoat, by mass		

CURING CHARACTERISTICS

NCS ULTRAGEL 22 NAT PA E is supplied preaccelerated, needing only the addition of catalyst to start the curing reaction.

Curing should not be carried out at temperatures below 15°C. NCS ULTRAGEL 22 NAT PA E must be allowed to attain workshop temperature (23°C) before being used. Catalyst levels below 1% and above 3% are not recommended.

The ambient temperature and the amount of catalyst control the geltime of the gelcoat. In colder temperatures, Butanox M60 is recommended and in warmer temperatures, Butanox LPT. The levels of catalyst can be approximately determined from the table below which shows the geltime of 100 parts by mass of NCS ULTRAGEL 22 NAT PAE, containing 1 to 3 phr catalyst

GELTIME

Parts of M60 to 100 parts UG 22 NAT PAE	1	1.5	2	2.5	3
Geltime @ 15°C, minutes	191	120	45	32	19
Geltime @ 20°C, minutes	95	60	24	13.5	11
Geltime @ 25°C, minutes	50	24	15	9.5	7.5

Parts of M50 to 100 parts UG 22 NAT PAE	1	1.5	2	2.5	3
Geltime @ 20°C, minutes	128	80	32	23	15
Geltime @ 25°C, minutes	57	23	13	16	8
Geltime @ 30°C, minutes	41	18	10	8	6
Geltime @ 35°C, minutes	28	17	8.5	7	5

Parts of LPT to 100 parts UG 22 NAT PAE	1	1.5	2	2.5	3
Geltime @ 30°C, minutes	121	85.5	46	35	25
Geltime @ 35°C, minutes	100	65.5	32	25	18

Geltime @ 40°C, minutes	59	27	17.5	13	10
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APPLICATION

NCS ULTRAGEL 22 NAT PA E is designed for application by brush. For normal mouldings, the wet gelcoat thickness should be controlled between 0,5mm and 0,6mm. As a guide, 550g to 650 g/m² of NCS ULTRAGEL 22 NAT PA E, when applied, will give the required thickness.

The use of glass or synthetic fibre surface tissues will enhance the surface appearance and service life of the gelcoat.

NCS ULTRAGEL 22 NAT PA E has been carefully formulated to give excellent brushing properties, designed to enhance levelling which promotes the uniformity of the gelcoat film thickness which translates into efficient utilisation of material. The thixotropy has been adjusted to eliminate sag on inclined and vertical surfaces. NCS ULTRAGEL 22 NAT PA E exhibits rapid film curing characteristics resulting in short backup times, typically one hour for a gelcoat of cured film thickness of 0,5 mm cured with 2 phg BUTANOX M50 at 25°C. This short backup time facilitates achieving fast production rates and shorter overall mould turn-around times, without detracting from the smooth finish of the moulding.

The gelcoat is important for adhesion of the backing laminate. Modification of the gelcoat is not recommended as this will affect the properties which have been optimised.

PIGMENTS AND FILLERS

NCS ULTRAGEL 22 NAT PA E may be pigmented by the addition of up to 10% of NCS POLYCHROME PIGMENT PASTE.

The addition of fillers to NCS ULTRAGEL 22 NAT PA E is not recommended since their use may adversely affect the weather resistant and water resistant properties of the cured gelcoat.

It is recommended that, where mouldings are produced as sub-components of larger structures, or are simply large structures, that sufficient gelcoat and pigment paste are mixed to enable the entire job to be completed, thus ensuring an exact colour match. Similarly, if coloured gelcoat is used, it is recommended that the same batch of material is used throughout the application as well as for sub-components. Thorough stirring of the mix shortly before use is recommended to ensure that the pigment is fully dispersed and that no separation has occurred. Care must be taken not to introduce air into the system. Users are reminded that the final colour of the cured gelcoat and laminate can be affected by the curing system or the colour of the gelcoat or resin to which the pigment paste is added, particularly when heavily filled systems are used, and therefore the colour samples here are intended purely for guidance and exact matching to the final laminate colour cannot be guaranteed. Users are advised to consult application bulletins which deal with the methods of use and scope of application of NCS Resins pigment pastes.

STORAGE AND HANDLING

To ensure maximum stability and maintain optimum properties, polyester resin should be stored in closed containers, maintained below 25°C and away from heat sources and sunlight. All storage should conform to local fire and building codes. Drum stock should be kept to a reasonable minimum with first-in, first-out stock rotation.

Where bung-in-head containers are stored outside, it is recommended that these be stored in a horizontal position to avoid the ingress of water.

STANDARD PACKAGE

Non-returnable metal drums.
Bulk supplies can be delivered by road tanker.

**MATERIAL SAFETY
DATA SHEET**

A Material Safety Data Sheet is available from your NCS Resins' representative. Make certain that you obtain a copy of this guide to the safe handling of unsaturated polyester resins and resin systems.

**PLEASE READ AND UNDERSTAND THE MATERIAL SAFETY
DATA SHEET BEFORE WORKING WITH THIS PRODUCT**

WARNING: CARE MUST BE TAKEN TO AVOID DIRECT MIXING OF ANY ORGANIC PEROXIDE (CATALYST) WITH METAL SOAPS, AMINE OR ANY OTHER POLYMERISATION ACCELERATOR OR PROMOTER, AS VIOLENT DECOMPOSITION WILL RESULT!

NCS RESINS BRANCHES AT:

JOHANNESBURG / DURBAN / CAPE TOWN / PORT ELIZABETH