

NCS ULTRAGEL 63 NAT PA SV E

NDS129/209

HIGH PERFORMANCE MARINE & SANITARYWARE ISO/NPG CLEAR GELCOAT FOR SPRAY APPLICATIONS EXPORT / SUMMER VERSION

DESCRIPTION

NCS ULTRAGEL 63 NAT PA SV E is a clear, pre-accelerated, thixotropic, unsaturated polyester gelcoat based on Isophthalic Acid and Neopentyl Glycol. It is especially formulated to give excellent water resistance, thermal shock resistance and weathering. It can, in many instances also be recommended for mouldings requiring good chemical resistance.

NCS ULTRAGEL 63 NAT PA SV E is especially recommended for sanitaryware applications because the cured film possesses a high degree of clarity, together with a very pale colour and excellent colour retention. It also possesses the required thermal shock resistance for the manufacture of sanitaryware.

NCS ULTRAGEL 63 NAT PA SV E incorporates excellent spraying characteristics with exceptional flow, levelling and air release properties, yet has sufficient thixotropy to minimise sag on inclined surfaces.

| FEATURES | BENEFITS |
|--------------------|---|
| Thixotropic | Minimal drainage with good flow |
| Preaccelerated | Requires only the addition of suitable catalyst |
| UV-stabilised | Improved weather resistance ensuring long term appearance |
| Specially promoted | Minimal geltime drift with improved cure characteristics |
| Excellent Colour | High Clarity Readily Pigmentable |

OTHER VERSIONS

| | |
|-----------------------------|-------------------------------|
| NCS ULTRAGEL 63 P100 PA | Iso/NPG White Brush Gelcoat |
| NCS ULTRAGEL 63 NAT PA | Iso/NPG Clear Brush Gelcoat |
| NCS ULTRAGEL 63 P100 PASV | Iso/NPG White Spray Gelcoat |
| NCS ULTRAGEL 63 P3038 PA | Iso/NPG Pool Blue Brush |
| NCS ULTRAGEL 63 P100 PAE | Summer/Export White Brush |
| NCS ULTRAGEL 63 NAT PAE | Summer/Export Clear Brush |
| NCS ULTRAGEL 63 P3038 PAE | Summer/Export Pool Blue Brush |
| NCS ULTRAGEL 63 P100 PA SVE | Summer/Export White Spray |

The information herein is to assist customers in determining whether our products are suitable for their applications. Our products are intended for sale to industrial and commercial customers. We request that customers inspect and test our products before use and satisfy themselves as to contents and suitability. Nothing herein shall constitute any other warranty expressed or implied, including any warranty of merchantability or fitness, nor is protection from any law or patent to be inferred. All patent rights are reserved. The exclusive remedy for all proven claims is replacement of our materials, and in no event shall we be liable for special, incidental, or consequential damages. Our standard conditions of contract will apply to all sales

**TYPICAL
LIQUID
PROPERTIES**

| PROPERTY | SPECIFICATION | NCS TEST METHOD |
|---|------------------------|-----------------|
| Viscosity @ 25°C, mPa.s. | 30 000 - 40 000 | 5.3 |
| Geltime @ 25°C, 2 phg* BUTANOX M50, minutes | 12 - 16 | 8 |
| Liquid appearance | Opaque Pink | 2 |
| Stability in the dark @ 25°C, months | 3 minimum | 4.1 |
| *phg = parts per hundred gelcoat, by mass | | |

**CURING
CHARACTERISTICS**

The recommended catalyst for NCS ULTRAGEL 63 NAT PA SV E is BUTANOX M50, (a 50 % solution of a medium reactivity MEKP).

BUTANOX M50 disperses easily in the gelcoat, but must nevertheless be mixed in thoroughly. Low reactivity (30 %) MEKP Catalysts must not be used. Under average conditions, it is advisable to use two parts BUTANOX M50 per one hundred parts of gelcoat by mass.

Curing should not be carried out at temperatures below 15°C.

NCS ULTRAGEL 63 NAT PA SV must be allowed to attain workshop temperature (23°) before being formulated for use.

NCS ULTRAGEL 63 NAT PA SV E requires only the addition of catalyst to start the curing reaction. The catalyst is therefore added and thoroughly stirred into the gelcoat resin shortly before use. The time taken for the gelcoat film to harden will depend on several other factors, including the thickness of the gelcoat and the material of which the mould is constructed.

It should be noted that NPG based gelcoats are not as tolerant (forgiving) as standard Iso gelcoats w.r.t low temperature, low catalyst levels and low film thickness. Precautions should be taken to ensure that the gelcoat temperature is above 15°C, the catalyst level above 1,5 phg and the film thickness above 400 microns. It is recommended that NPG gelcoats be allowed to cure for at least 2 hours before laminating commences.

The following formulation is recommended:

| COMPONENT | PARTS BY WEIGHT |
|-----------------------------|-----------------|
| BUTANOX M50 | 2 |
| NCS ULTRAGEL 63 NAT PA SV E | 100 |

For shorter geltimes and improved cure up to 1 % NCS ULTRACURE AC 4 may be used.

APPLICATION

NCS ULTRAGEL 63 NAT PA SV E is specially formulated for spray application. Due to problems associated with the addition of pigment pastes to spray gelcoats, it is advisable to use spray gelcoats which have been supplied pre-pigmented. This ensures complete compatibility and freedom from separation to prevent shadowing or a mottled surface.

All catalysts and pigments added to the gelcoat must be thoroughly mixed in. Pigment mixing should be carried out by a mechanical stirrer which should be of a type which does not introduce air, preferably air driven.

NCS ULTRAGEL 63 NAT PA SV E is particularly suitable for use with catalyst injection airless or air-assisted airless spray systems. It can be successfully used in conventional air-atomised equipment provided that spraying takes place within the limited pot-life.

A gelcoat wet film thickness of 0,5 to 0,625 mm is recommended for most applications. Inexpensive, disposable wet-film thickness gauges are available which will enable the operator to keep a check on gelcoat thickness. As a general guide, approximately 550 to 650 g/m² of gelcoat will give the required thickness for normal use.

SPRAY APPLICATION GUIDE

1. Mix NCS ULTRAGEL 63 NAT PA SV E slowly before use, by hand or low shear mixer. Do not high shear as the viscosity may drop too much, causing the gelcoat to run down vertical surfaces. High shearing will also result in excessive air entrapment.
2. Check the temperature of the gelcoat. Ideally,
NCS ULTRAGEL 63 NAT PA SV should be 23°-25°C and the mould temperature 1 or 2 degrees higher. Temperatures below 20°C will require higher pressures and may result in increased porosity.
3. Check the spray gun and lines for contamination such as solvent, water or oil. Clean and correct as necessary before spraying.
4. Check the air pressure before spraying and adjust to achieve proper flow, spray pattern and break-up of the gelcoat.
5. If catalyst injection is used, make sure the catalyst is flowing properly. Do not let raw catalyst fall on the mould or the sprayed gelcoat.
6. Adjust the catalyst level according to the temperature. Do not use less than 1,2 phg catalyst.
7. Keep the gun perpendicular - about 45 cm from the moulding during each stroke and spray a continuous film without arcing the gun.
8. To minimise porosity spray 3 to 4 coats of 150 microns each.
9. Do not apply less than 250 microns, or more than 650 microns. Under 250 microns NCS ULTRAGEL 31 P100 PA may not cure fully and over microns the gelcoat may crack or contain excessive air entrapment. The gelcoat may also pre-release if the thickness is excessive.

PIGMENTS AND FILLERS

NCS ULTRAGEL 63 NAT PA SV may be pigmented by the addition of up to 10% of NCS POLYCHROME PIGMENT PASTE.

The addition of fillers to NCS ULTRAGEL 63 NAT PA SV 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 resin 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 card colours are intended purely for guidance and exact matching to the final laminate colour cannot be guaranteed. Users are advised to consult application bulletins that deal with the methods of use and scope of application of NCS Resins pigment pastes.

TYPICAL PHYSICAL PROPERTIES

Typical Properties of fully cured** NCS ULTRAGEL 63 NAT PA SV E (unfilled casting)

Prepared, post-cured and tested in accordance with Lloyds Register of Shipping requirements for gelcoat resins.

**A casting of resin was made using 2 phr NCS Ultracure AC 9 and 2 phr Butanox M50 and post cured for 24 hrs at 23°C and 16 hrs at 40°C. The following are results of test.

| Property | Unit | NCS ULTRAGEL 63 NAT PA SV E |
|---|------|--------------------------------------|
| Tensile Strength | MPa | 54 |
| Elongation at break | % | 3,73 |
| Flexural Strength | MPa | 92 |
| HDT | °C | 59 |
| Water absorption, increase after 7 days immersion | mg | 34,0 |
| Barcol Hardness | BHU | 44 |

**STORAGE
AND
HANDLING**

To ensure maximum stability and maintain optimum properties, gelcoat 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.

**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 AUSTRALIA

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