

# Technical Information



# NCS 942

NDS017/REV02

## TRANSLUCENT SHEETING POLYESTER RESIN

### DESCRIPTION

NCS 942 is a high clarity, light-stabilised, unsaturated polyester resin designed for use in the manufacture of corrugated and flat sheets, skylights, domes, etc. Suitable for the manufacture of machine or hand lay-up application techniques.

FEATURES	BENEFITS
UV-stabilised	Improved weather resistance ensuring long term appearance
Low viscosity	Excellent glassfibre wet-out
Refractive Index matched to glass	No visible fibre pattern present in the laminate
SABS 713 approved	Meets national quality standards

### TYPICAL LIQUID PROPERTIES

PROPERTY	SPECIFICATION	NCS TEST METHOD
Viscosity @ 25°C, mPa.s	230 - 280	5.2
Acid value, mg KOH/g	19 - 24	13
Volatile content, %	37 - 41	7B
Geltime @ 25°C using 0,4 phr NCS ULTRACURE AC4 and 2,0 phr BUTANOX M50, minutes	10 - 15	8
Liquid appearance	Light Blue	2
Relative Density	1,0955 - 1,1155	103A
Refractive Index, ratio	1,5230 - 1,5250	15
Stability in the dark @ 25°C, months	6 minimum	4.1

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## CURING CHARACTERISTICS

NCS 942 needs the addition of catalyst and accelerator to start the curing reaction. The accelerator must be thoroughly dispersed in the resin. The resin must be allowed to attain workshop temperature (23°C) before being formulated for use.

The correct amount of catalyst is therefore added and thoroughly stirred into the resin shortly before use. The ambient temperature and the amount of catalyst and accelerator control the geltime of the resin formulation. Curing should not be carried out at temperatures below 15°C. Ideally the catalyst level should range between 1 and 2phr.

## POST-CURING

Satisfactory laminates for many applications can be made from NCS 942 by curing at ambient temperature (but not less than 15°C). When optimum properties and long-term performance are required however, the laminates should be post-cured.

After release from the mould, laminates should be allowed to mature for 24 hours at workshop temperature (23°C). They should then be post-cured for 3 hours at 80°C, although a longer period at a lower temperature will give almost the same result. The post-cure is most effective if it is carried out immediately after the 24 hour maturing period.

## PIGMENTS AND FILLERS

NCS 942 can be pigmented by the addition of up to 5 % NCS POLYCHROME PIGMENT PASTE, but lower quantities consistent with achieving adequate hiding power are preferred if the physical properties of the cured laminate are to be maintained.

The addition of fillers to NCS 942 is likely to change the hardening characteristics of the resin and will affect the properties of the laminate. Fillers should be accurately checked for moisture content and effect on geltime and cure rate before use.

## TYPICAL PHYSICAL PROPERTIES

### Typical Properties of Cured NCS 942 (unfilled castings)

Prepared, post-cured and tested in accordance with SABS 713, as amended

Temperature of deflection - under load (1,80 MPa), °C	65
Water absorption: (7 days @ 23°C),mg	40
Tensile Strength, MPa	60
Tensile Modulus, MPa	4135
Elongation @ break, %	1,7
Flexural strength, MPa	103
Flexural Modulus, MPa	3970
Barcol Hardness	43

## 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. Stock in drums 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**