

# Product Data Sheet

## Synolite 1967-X-1

### Chemical/physical nature

Synolite 1967-X-1 is a low viscous unsaturated DCPD based polyester resin.

### Major applications

Synolite 1967-X-1 is recommended for injection applications with a rigid top-mould to produce high performance constructional laminates. Synolite 1967-X-1 can be used with all commonly used types of glass reinforcement. This resin has been approved by Det Norske Veritas, grade 2 for boat building.

### Principal properties

Synolite 1967-X-1 is a medium reactive resin that gives a relatively low peak exotherm. This resin can be used for thick and thin laminates and shows a good through cure and relatively low shrinkage. Synolite 1967-X-1 has very good fibre wetting and impregnation properties.

### Approvals

Synolite 1967-X-1 is found to comply with "Det Norske Veritas' (DNV) Tentative Rules for Classification and Classification of Boats 1997, Grade 2; Det Norske Veritas' Rules for Classification of High Speed and Light Craft, Grade 2. Certificate No.: K-1719

### Product specifications upon delivery

Property	Range	Unit	TM
Appearance	clear	-	2265
Viscosity, 23°C	150 - 190	mPa.s	2013
Solids content, IR	61 - 64	%	2033
Gel time from 25 to 35°C	8.5 - 12.5	minutes	2625
Cure time from 25°C to peak	19 - 25	minutes	2625
Peak temperature	120 - 150	°C	2625

### Remarks

Viscosity measurement TM 2013 at 23°C:

Physica, spindle Z2, shear rate 100 s<sup>-1</sup>, 23°C.

Curing conditions TM 2625, 25°C:

1.5 g NL 49P + 2.0 g Butanox M-50 in 100 g resin.

### Properties of the resin (typical values)

Property	Value	Unit	TM
Density, 23°C	1090	kg/m <sup>3</sup>	2160
Colour on sight	green	-	-
Flash point	33	°C	2800
Stability, no init., dark, 25°C	6	months	-

### Properties of cast unfilled resin (typical values)

Property	Value	Unit	TM
Tensile strength	70	MPa	ISO 527-2
Tensile E-modulus	3.8	GPa	ISO 527-2
Elongation at break	2.3	%	ISO 527-2
Flexural strength	130	MPa	ISO 178
Flexural E-Modulus	3.8	GPa	ISO 178
Heat Deflection Temp. (HDT)	85	°C	ISO 75-A
Impact res. - unnotched sp.	15	kJ/m <sup>2</sup>	ISO 179
Barcol hardness GYZJ 934-1	45	-	2604 1
Density, 23°C	1155	kg/m <sup>3</sup>	-
Volume shrinkage	6	%	-

### Curing conditions

Cured with 1.5% NL49P + 1% Butanox M-50.

Postcured 24 hrs RT followed by 24 hrs 70°C.

### Remarks on curing agents

Butanox M-50 is an AKZO Nobel product, methyl ethyl ketone peroxide (MEKP).

### Guidelines before use

Before use, the resin should be conditioned at a well defined, application dependant temperature (usually 15°C minimum for a MEKP / Co cure).

### Storage guidelines

The resin should be stored indoors in the original, unopened and undamaged packaging, in a dry place at temperatures between 5°C and 25°C. Shelf life is reduced at higher temperatures and the properties of the resin might change during storage. The shelf life of styrene containing unsaturated polyesters will be significantly reduced when exposed to light. Store in dark and in 100% light tight containers only. From DCPD resins it is known that skin formation occurs when exposed to air ventilation or replacement from the original packaging.

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### Material Safety

A material safety data sheet for this product is available on request.

### Test methods

Test methods (TM) referred to in the table(s) are available on request.

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