

Product Data Sheet

Synolite 2020-P-1

Chemical/physical nature

Synolite 2020-P-1 is a pre-accelerated, thixotropic, orthophthalic, low styrene emission resin with a colour change mechanism.

Major applications

Designed for use in general purpose hand lay-up and spray depositing applications.

Principal properties

This grade shows fast cure, excellent glass fibre wet out and contains a non-wax ingredient to reduce the styrene emission during lamination and in the period prior to gelation.

Approvals

Lloyd's Register of Shipping.
WBS for use with potable water.

Product specifications upon delivery

Property	Range	Unit	TM
Appearance	hazy	-	2265
Stability	min. 180	minutes	2300C
Viscosity, Physica, 20 s-1, 23°C	330 - 450	mPa.s	2313
Viscosity, Physica, 250 s-1, 23°C	210 - 280	mPa.s	2313
Thix index value (optionally)	1.35 - 1.75	-	2313
Gel time from 25 to 35°C	20 - 25	minutes	2625
Cure time from 25°C to peak	24.5 - 33.5	minutes	2625
Peak temperature	108 - 132	°C	2625

Remarks

Viscosity measurement: 23°C, spindle Z2

Curing conditions:

TM 2313: rate 2/250

TM 2625: 1% M50 by weight

Properties of the liquid resin (typical values)

Property	Value	Unit	TM
Density, 23°C	1100	kg/m ³	2160
Flash point	33	°C	2800
Stability, no initiator, in the dark, 20°C	3 minimum	Month	-

Properties of cast unfilled resin (typical values)

Property	Value	Unit	TM
Tensile strength	56	MPa	ISO 527-2
Tensile E-modulus	3.77	GPa	ISO 527-2
Elongation at break	2.2	%	ISO 527-2
Flexural strength	78	MPa	ISO 178
Flexural E-Modulus	3.89	GPa	ISO 178
Impact strength	0.8	J	ISO 180
Heat deflection temp. (HDT)	62	°C	ISO 75-A
1 day water absorption	15	mg	ISO 62
7 day water absorption	22	mg	ISO 62
Hardness	44	Barcol	2604

Curing conditions

1% Butanox M50. Cured at ambient temperature for 16 hours then post cured for two hours at 80°C followed by two hours at 100°C.

Properties of glass reinforced resin (typical values)

Property	Value	Unit	TM
Tensile strength	105	MPa	ISO 3268
Flexural strength	182	MPa	ISO 178
Tensile E-modulus	8.9	GPa	ISO 3268
Flexural E-Modulus	7.3	GPa	ISO 178
1 day water absorption	22	mg	ISO 62
7 day water absorption	35	mg	ISO 62
Impact strength	min. 13.5	J	ISO 180
Tensile strength *	100	MPa	ISO 3268
Flexural strength *	175	MPa	ISO 178
Tensile E-modulus *	6.85	GPa	ISO 3268
Flexural E-Modulus *	6.85	GPa	ISO 178

Remarks

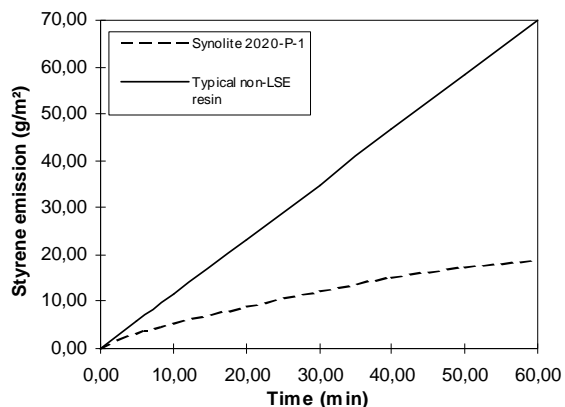
Laminate construction: 3 plies of 450g/m² emulsion bound CSM with a resin to glass ratio of 2.25:1. Cured for 16 hours at ambient temperature then post cured for 2 hours at 80°C followed by 2 hours at 100°C

*The last four tests in this table were conducted following immersion in boiling water for 2 hours

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Graph showing reduced styrene emission



Remarks

TM 4532, 1% Interlox MEKP HA-2

Processing

BS 4994 C9 lap shear strength and BS 2782 341A apparent interlaminar shear strength show minimal loss in adhesion after one and four day periods of delayed lay-up.

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Guidelines before use

Before use, the resin should be conditioned at 15 °C minimum. Stir the product before use.

Storage guidelines

The resin should be stored indoors in the original, unopened and undamaged packaging, in a dry place at temperatures below 20°C. 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.

Material Safety

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

Test methods

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