

Product data

Synolite 6060-P-1

Chemical/physical nature

Synolite 6060-P-1 is a pre-accelerated, thixotropic, low styrene emission, orthophthalic based unsaturated polyester resin.

Major applications

It is designed for use in general spray depositing work as well as roller and brush laminating applications.

Principal properties

Synolite 6060-P-1 is a medium reactivity, low exotherm and low viscosity resin and shows excellent glass fibre wet out.

Product specifications

Property	Range	Unit	TM
Stability	min. 75	minutes	2300C
Viscosity, Physica, 2 s-1, 23°C	700 - 950	mPa.s	2313
Viscosity, Physica, 20 s-1, 23°C	335 - 455	mPa.s	2313
Viscosity, Physica, 250 s-1, 23°C	240 - 330	mPa.s	2313
Thixotropy index value (optionally)	1.8 - 2.4	-	2313
Gel time from 25 to 35°C	18.1 - 24.5	minutes	2625
Cure time from 25°C to peak	29.8 - 40.2	minutes	2625
Peak temperature	70 - 100	°C	2625

Properties of the liquid resin (typical values)

Property	Value	Unit	TM
Density, 25°C	1090	kg/m ³	2160
Flash point	32	°C	2800
Stability, no init., dark, 20°C	3	months	-

Properties of cast unfilled resin (typical values)

Property	Value	Unit	TM
Tensile strength	56	MPa	ISO 527-2
Tensile strength after immersion in boiling water for 2 hours	43	MPa	ISO 527-2
Tensile E-modulus	3.77	GPa	ISO 527-2
Tensile E-modulus after immersion in boiling water for 2 hours	2.98	GPa	ISO 527-2
Elongation at break	2.2	%	ISO 527-2
Flexural strength	78	MPa	ISO 178
Flexural strength after immersion in boiling water for 2 hours	70	MPa	ISO 178
Flexural E-Modulus	3.89	GPa	ISO 178
Flexural E-Modulus after immersion in boiling water for 2 hours	3.00	GPa	ISO 178
Impact strength - Izod unnotched	0.8	J	ISO 180
Hardness	44	Barcol 934-1	2604
Heat Deflection Temp. (HDT)	62	°C	ISO 75-A
Water absorption, 1 day	15	mg	ISO 62
Water absorption, 7 days	22	mg	ISO 62

Curing conditions

Prepared according to BS 3532 using 1% MEKP. Cured at room temperature for 16 hours then post cured for 2 hours at 80°C followed by 2 hours at 100°C

Properties of glass reinforced resin (typical values)

Property	Value	Unit	TM
Tensile strength	105	MPa	ISO 527-2
Tensile strength after immersion in boiling water for 2 hours	100	MPa	ISO 527-2
Tensile E-modulus	8.9	GPa	ISO 527-2
Tensile E-modulus after immersion in boiling water for 2 hours	6.85	GPa	ISO 527-2
Flexural strength	182	MPa	ISO 178
Flexural strength after immersion in boiling water for 2 hours	175	MPa	ISO 178
Flexural E-Modulus	7.3	GPa	ISO 178
Flexural E-Modulus after immersion in boiling water for 2 hours	6.85	GPa	ISO 178
Impact strength - Izod unnotched	> 13.5	J	ISO 180
Water absorption, 1 day	22	mg	ISO 62
Water absorption, 7 days	35	mg	ISO 62

Strength tests carried out to BS 4994 C9 lap shear strength and BS 2782 method 341 A apparent interlaminar shear strength show no loss in adhesion after one and four day periods of delayed lay-up.



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Curing conditions

Chopped strand mat laminates containing three plies of 450 g/m² E-glass with a resin to glass ratio of 2.25:1 catalysed with 1% Interlox HA-2. Cured at room temperature for 16 hours then post cured for 2 hours at 80°C followed by 2 hours at 100°C.

Remarks on curing agents

Synolite 6060-P-1 contains a non-wax ingredient that reduces styrene emission during lamination and in the period prior to gelation. Low styrene emission resins alone will not enable the moulder to comply with recommended atmospheric styrene levels, but with appropriate ventilation, these resins may assist in reducing the level of styrene in the workshop to which workers are exposed.

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). Stir the product before blending.

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 30°C. Shelf life is reduced at higher temperatures. 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.



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