

POLYPLEX GP LSE LAMINATING RESINS C200014,16,18,20,22,24

POLYPLEX GP LSE LAMINATING RESINS are manufactured using a medium reactivity, rigid orthophthalic polyester base resin with excellent application properties. These resins are in thixotropic, pre-promoted and LSE form and are designed for both hand lay-up and spray-up application with minimal drainage on inclined surfaces. They show excellent glass fibre wet out and have good cure performance while maintaining a relatively wide green time, low exotherm and low colour in thick sections.

These LSE versions contain a combination of additives which improve the working environment during and after application by substantially reducing styrene evaporation, while at the same time providing excellent interlaminar adhesion characteristics after delayed lay-up.

PERFORMANCE CHARACTERISTICS

FEATURES	BENEFITS
Low viscosity under high shear with high thixotropy.	Excellent sprayability. Rapid glass wet-out with minimal drainage on inclined surfaces.
Colour change mechanism.	Indicates presence of initiator.
Long gel time versions available	Allows extended working times for large laminate surface areas. Suitable for use in warm workshop conditions.
Excellent Adhesion	Provide excellent interlaminar adhesion.
LSE modified	Low styrene vapours for an improved working environment

SUGGESTED USE

Product can be used for all general purpose fabrication requiring a General Purpose resin.

RELATED PRODUCTS

C200013 POLYPLEX GP LAMINATING RESIN 15

C200015 POLYPLEX GP LAMINATING RESIN 30

C200017 POLYPLEX GP LAMINATING RESIN 45

C200019 POLYPLEX GP LAMINATING RESIN 60

C200021 POLYPLEX GP LAMINATING RESIN 75

C200023 POLYPLEX GP LAMINATING RESIN 90

* The number at the end of the product name indicates the geltime of that particular resin when catalysed as recommended @ 25 °C.

RECOMENDED CATALYST

We recommend using 1% CUROX M200 for all general purpose applications.

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TYPICAL LIQUID RESIN PROPERTIES

PROPERTY	TYPICAL VALUE	TEST DETAILS
Appearance	Blue Opaque Liquid	Visual
Viscosity	1600-2000 cP	Brookfield #2/12 @ 25°C
C&P Viscosity	210-250 cP	@ 23°C
Geltime	15, 30, 45, 60, 75, 90 minute versions available	Using 1% CUROX M200
Density	1.10 g/cm ³	@25°C
Volatile Content	40-44 %	20 minutes @105°C
Styrene Emission	<20 g/m ²	After 60 minutes @ 25°C
Flash Point	31°C	Setaflash
Shelf Life	6 Months	When correctly stored

* Typical values: Based on materials tested in our laboratories, but varies from sample to sample. Typical values should not be construed as a guaranteed analysis of any specific lot or as specification items.

TYPICAL CAST UNFILLED RESIN PROPERTIES

PROPERTY	TYPICAL VALUE	TEST DETAILS
Barcol Hardness (GYZ 934-1)	40	EN 59
Density	1.19 g/cm ³	ISO R1183
Volume Shrinkage	7.5%	ISO 3521
Tensile strength, MPa	56	ISO R527
Tensile strength after 2 hr immersion in boiling water, MPa	43	ISO R527
Flexural strength, MPa	78	ISO 178
Flexural strength after 2 hr immersion in boiling water, MPa	70	ISO 178
Tensile Modulus, GPa	4	ISO R527
Tensile modulus after 2 hr immersion in boiling water, GPa	3	ISO R527
Flexural modulus, GPa	4	ISO 178
Flexural modulus after 2 hr immersion in boiling water, GPa	3	ISO 178
Elongation at break %	2	ISO R527
Heat deflection temperature (1.8MPa), °C	62 min	ISO 75
Water absorption: One day, (mg)	15	ISO 62
Seven days, (mg)	22	ISO 180
Impact strength, J	0	ISO 180

* Cast resin was prepared as laid down in BS 3532 using 1% MEKP. Cured at room temperature for sixteen hours then post cured for two hours at 80°C followed by two hours at 100°C.

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TYPICAL PHYSICAL PROPERTIES OF GLASS MAT LAMINATES

PROPERTY	TYPICAL VALUE	TEST DETAILS
Tensile strength, MPa	105	ISO 3268
Tensile strength after 2 hr immersion in boiling water, MPa	100	ISO 3268
Flexural strength, MPa	182	ISO 178
Flexural strength after 2 hr immersion in boiling water, MPa	175	ISO 178
Tensile Modulus, GPa	9	ISO 3268
Tensile modulus after 2 hr immersion in boiling water, GPa	7	ISO 3268
Flexural modulus, GPa	7	ISO 178
Flexural modulus after 2 hr immersion in boiling water, GPa	7	ISO 3268
Water absorption: One day, (mg) Seven days, (mg)	22 35	ISO 62 ISO 62
Impact strength, J	>13.5	ISO 180

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

APPLICATION GUIDELINES

Tests carried to according to Nuplex Test Procedure 261.2 (Interlaminar adhesion) show no loss in adhesion with Polyplex GP LSE Laminating Resins after a delay of 24hrs between layers. However, it should be noted that conditions vary from workshop to workshop. When a laminate is built up in stages with intermediate curing and the delay between subsequent layers is more than 24 hours, the surface must be abraded before applying further laminates to ensure good adhesion between the layers.

LOW STYRENE EMISSION RESINS

These contain ingredients which reduce styrene emission during application and give the cured laminate a tack-free surface. Low styrene emission resins alone will not enable the user to comply with the 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.

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STORAGE AND HANDLING

To ensure maximum stability and maintain optimum resin handling properties, polyester resins should be stored in closed containers, away from heat sources and sunlight. The resin should be stored away from all sources of ignition. Stored resin quantities should be kept to a reasonable minimum and used on a first in/first out stock rotation basis. Prolonged storage, or unfavourable storing conditions, may cause separation, therefore agitation of the resin before use is recommended.

STANDARD PACKAGING

Mild steel drums (225kg)
Always refer to the MSDS before use.

FGM0913 TDS Version 2.2

Revision Date: 09/16

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