



Introduction

espol™ 31.00 is a non-accelerated terephthalic acid based polyester resins which rapidly wets out reinforcements. espol™ 31.00 has a medium viscosity & reactivity and exhibits good mechanical and electrical properties together with good chemical resistance compared to general purpose resins.

Applications

espol™ 31.00 is designed for hand laminating, spray up & casting applications. espol™ 31.00 offers chemicals resistance towards most mineral and organic acids, solvents and oils making espol™ 31.00 an ideal choice for making glass reinforced chemical process equipment, fabrication of Bridge Supports, ladders and components exposed to sewerage & effluents.

Formulation

espol™ 31.00 should be allowed to attain workshop temperature (25°C - 30°C) before use. Stir well by hand, or with a low shear mixer to avoid aeration, and then allow to stand to regain thixotropy. espol™ 31.00 requires the addition of accelerator and catalyst to start the curing reaction.

The recommended accelerator is Cobalt (1% solution in styrene) which should be added to the resin at 1 - 2% and thoroughly incorporated into the resin, using a low shear mechanical stirrer where possible.

The recommended catalyst is MEKP (50%) which should be added to the resin at 1 - 2% and thoroughly incorporated into the resin, using a low shear mechanical stirrer where possible.

(Please consult our Technical Support Department if other catalysts are to be used).

N.B. Catalyst and accelerator must not be mixed directly together since they can react with explosive violence.

Physical data - uncured

The following tables give typical properties of espol™ 31.00 when tested to IS 6746-1994 (Reaffirmed 2005).

Property	Unit	Liquid
Appearance	-	Pale yellow
Specific gravity	-	1.09 - 1.13
Viscosity at 25°C*	cP	450 - 550
Acid Value	mg-KOH/gm	10 - 16
Volatile Content	%	34 - 40
Geltime at 30°C**	Minutes	9 - 15
Peak Exotherm Temp**	°C	170 - 200
Stability from date of manufacture when stored in accordance with storage recommendations.	months	3

*Viscosity measured using Brookfield (RVT Model) Viscosity SPL 1 / SPD 10

**100g resin + 2ml Co (1%) accelerator + 1.5ml MEKP (50%) Catalyst.

Physical data - cured

Property	Unit	Fully cured*
Barcol hardness*		38
Deflection temperature under load* (1.80MPa)	°C	70 - 80
Tensile strength*	MPa	45 - 55
Tensile modulus*	MPa	3000 - 3200
Elongation at break*	%	2.2 - 2.5
Flexural strength*	MPa	90 - 110
Flexural modulus*	MPa	3000 - 3400

*Curing Schedule - 24 hours at 20°C, 6 hours at 80°C.

Post Curing

Satisfactory laminates for many applications can be made from espol™ 31.00 by curing at workshop temperature (25°C). For optimum properties, however, laminates should be post-cured before being put into service. The laminate should be allowed to cure for 24 hours at 25°C, and then be oven cured for a minimum of 6 hours 80°C.

Storage

espol™ 31.00 should be stored between 5°C and 25°C in the original, unopened container in a dry, well ventilated place. Protect from freezing and direct sunlight. Avoid contact with oxidising agents. If stored outside of these recommendations, shelf life will be significantly reduced.

Packaging

espol™ 31.00 is available in 35kg, 225kg and bulk containers.

Health and Safety

Please see separate Material Safety Data Sheet.

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