



Introduction

espol™ 38.05 is a non-accelerated, non-thixotropic vinyl ester resin which rapidly wets out reinforcements. espol™ 38.05 has excellent resistance to a wide range of corrosive chemical environments at room and elevated temperature.

Applications

espol™ 38.05 is designed pultrusion applications. Due to high elongation & flexibility espol™ 38.05 can also used in tooling and mould making.

Formulation

espol™ 38.05 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™ 38.05 requires the addition of accelerator and catalyst to start the curing reaction.

The recommended accelerators are Cobalt (1% solution in styrene) which should be added to the resin at 2 - 3% and DMA (10%) which should be added at 0.5%. Both accelerators should be 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™ 38.05 when tested to IS 6746-1994 (Reaffirmed 2005).

Property	Unit	Liquid
Appearance	-	Light Brown
Specific gravity	-	1.04 - 1.08
Viscosity at 25°C*	cP	400 - 550
Acid Value	mg-KOH/gm	6 - 11
Volatile Content	%	42 - 48
Geltime at 25°C**	Minutes	15 - 20
Peak Exotherm Temp**	°C	170 - 200
SPI Geltime at 140°C***	Seconds	90 - 180
Stability from date of manufacture when stored in accordance with storage recommendations.	months	3

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

**100g resin + 2.4ml Co (1%) accelerator + 0.5ml DMA (10%) + 1.5ml MEKP (50%) Catalyst.

***100g resin + 1.3ml TPPB.

Physical data - cured

Property	Unit	Fully cured*
Barcol hardness		35
Deflection temperature under load* (1.80MPa)	°C	100 - 105
Tensile strength*	MPa	60 - 70
Tensile modulus*	MPa	3300 - 3500
Elongation at break*	%	2.0 - 2.5
Flexural strength*	MPa	100 - 120
Flexural modulus*	MPa	2900 - 3100

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

Post Curing

Satisfactory laminates for many applications can be made from espol™ 38.05 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™ 38.05 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™ 38.05 is available in 35kg, 220kg and bulk containers.

Health and Safety

Please see separate Material Safety Data Sheet.

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