

## Introduction

espol™ 60.03 is a non-accelerated orthophthalic polyester resin which is formulated using sustainable resources derived from standard bottle grade PET. It is a general-purpose grade and is suited for non-critical industrial applications. It is quick curing and imparts the product with good mechanical properties, impact & water resistance.

## Applications

espol™ 60.03 is designed primarily for the pultrusion process. It is compatible to standard E-glass fibres such as chopped strand mat, woven roving and multi axials. Recommended for General moulding composite parts, which are not exposed to very demanding conditions.

## Formulation

espol™ 60.03 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™ 60.03 requires the addition of cobalt promoter and catalyst to start the curing reaction.

For High temperature thermal cure such as Pultrusion addition of Catalyst TBPB is recommended. Curing agents should be 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™ 60.03 when tested to IS 6746-1994 (Reaffirmed 2005).

Parameter	Unit	Liquid properties
Appearance	-	Brownish clear viscous liquid
Specific gravity	-	1.11 - 1.15
Viscosity at 25°C*	cP	650 - 850
Acid Value	mg-KOH/gm	20 - 26
Volatile Content	%	30 - 36
SPI Geltime at 140°C**	Minutes	1.3 - 3
SPI Geltime at 82°C***	Minutes	8 - 12
Gel to peak time***	Minutes	2 - 4
Peak Exotherm Temp**	°C	220 - 280
Stability from date of manufacture when stored in accordance with storage recommendations.	months	3

\*Viscosity measured using Brookfield (RVT Model) Viscosity SPL 3 / SPD 60

\*\*100g resin + 1.3ml TBPB Catalyst.

\*\*\*100g resin + 1.4 gms BPO paste ( 50% ) in water bath.

## Physical data - cured

Property	Unit	Fully cured*
Barcol hardness		38
Deflection temperature under load* (1.80MPa)	°C	70 - 75
Tensile strength*	MPa	50 - 55
Tensile modulus*	MPa	2800 - 3000
Elongation at break*	%	1.5 - 2.5
Flexural strength*	MPa	70 - 90
Flexural modulus*	MPa	2800 - 3200

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

## Post Curing

Satisfactory laminates for many applications can be made from espol™ 60.03 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™ 60.03 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™ 60.03 is available in 35kg, 220kg and bulk containers.

## Health and Safety

Please see separate Material Safety Data Sheet.

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