



## Introduction

espol™ 12.05 is a non-accelerated orthophthalic polyester resin having low viscosity, which rapidly wets out reinforcements. It has been specifically formulated for non-critical and general-purpose applications.

## Applications

espol™ 12.05 is designed for hand lamination, spray up, RTM & casting applications. It can be used with all types of E-glass such as chopped strand mat, woven roving and multi axial fibres. It brings in excellent mechanical strength & rigidity along with long term durability.

## Formulation

espol™ 12.05 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™ 12.05 requires the addition of cobalt promoter 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™ 12.05 when tested to IS 6746-1994 (Reaffirmed 2005).

Property	Unit	Value
Appearance	-	Light pale yellow clear liquid
Specific gravity	-	1.06 - 1.10
Viscosity at 25°C*	cP	200 - 300
Acid Value	mg-KOH/gm	22 - 28
Volatile Content	%	35 - 41
Geltime at 25°C**	Minutes	9 - 15
Peak Exotherm Temp**	°C	170 - 190
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 Cobalt (1%) + 1.5ml MEKP (50%) Catalyst.

## Physical data - cured

Property	Unit	Fully cured*
Barcol hardness		40
Deflection temperature under load* (1.80MPa)	°C	70
Tensile strength*	MPa	45 - 55
Tensile modulus*	MPa	2800 - 3000
Elongation at break*	%	1.5 - 2.5
Flexural strength*	MPa	70 - 80
Flexural modulus*	MPa	3000 - 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™ 12.05 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™ 12.05 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™ 12.05 is available in 35kg, 220kg and bulk containers.

## Health and Safety

Please see separate Material Safety Data Sheet.

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