



Introduction

espol™ 27.01 is a non-accelerated orthophthalic polyester resins which rapidly wets out reinforcements. It is specially formulated for use in dough moulding impregnation (DMC) process and is highly reactive. Suitable for products which require good end product manufacturing efficiency & finish.

Applications

espol™ 27.01 is designed for hot mould processes such as SMC /DMC with good catalysed stability. The resin provides good heat resistance and so is considered suitable for manufacturing of electrical components and special panels for appliances.

Formulation

espol™ 27.01 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™ 27.01 requires only the addition of catalyst to start the curing reaction in elevated temperature cure processes.

The recommended elevated temperature curing catalyst is TBPB 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).

Physical data - uncured

The following tables give typical properties of espol™ 27.01 when tested to IS 6746-1994 (Reaffirmed 2005).

Property	Unit	Value
Appearance	-	Light pale yellow clear viscous liquid
Specific gravity	-	1.12 - 1.16
Viscosity at 25°C*	cP	1000 - 1200
Acid Value	mg-KOH/gm	20 - 26
Volatile Content	%	26 - 34
Gel time at 25°C**	Minutes	15 - 25
SPI Gel time at 140 C***	Minutes	1.3 – 3
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 2 / SPD 20

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

***SPI test 1.3ml TBPB Catalyst.

Physical data - cured

Property	Unit	Fully cured*
Barcol hardness		40
Deflection temperature under load* (1.80MPa)	°C	100
Tensile strength*	MPa	50 - 60
Tensile modulus*	MPa	3000 - 3200
Elongation at break*	%	1 - 2
Flexural strength*	MPa	80 - 100
Flexural modulus*	MPa	3050 - 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™ 27.01 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™ 27.01 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™ 27.01 is available in 35kg, 220kg and bulk containers.

Health and Safety

Please see separate Material Safety Data Sheet.

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