



Introduction

espol™ 19.00 is a non-accelerated orthophthalic polyester resin suitable for Resin Transfer Moulding (RTM) process. It has been specifically formulated for non-critical and general-purpose applications where high reactivity is desirable. It is designed for laminates that need very fast cure under closed mould conditions.

Applications

espol™ 19.00 is designed for laminates that need very fast cure under closed mould conditions. Also suitable for hand lamination & casting process where low viscosity is desirable.

It can be used with all types of glass fibre such as chopped strand mat, woven roving and multi axials. Also, compatible to RTM fibre with flow media. It brings in excellent mechanical strength & rigidity along with long term durability.

Formulation

espol™ 19.00 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™ 19.00 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 AAP which should be added to the resin at 1 – 1.5% 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™ 19.00 when tested to IS 6746-1994 (Reaffirmed 2005).

| Property | Unit | Value |
|--|-----------|--------------------------------|
| Appearance | - | Light pale yellow clear liquid |
| Specific gravity | - | 1.06 – 1.1 |
| Viscosity at 25°C* | cP | 200 - 300 |
| Acid Value | mg-KOH/gm | 22 - 28 |
| Volatile Content | % | 34 - 40 |
| Geltime at 30°C** | Minutes | 9 - 15 |
| Peak Exotherm Temp** | °C | 160 - 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 + 1.2ml AAP Catalyst.

Physical data - cured

| Property | Unit | Fully cured* |
|---|------|--------------|
| Barcol hardness | | 40 |
| Deflection temperature under load* (1.80MPa) | °C | 70 |
| Tensile strength* | MPa | 55 -65 |
| Tensile modulus* | MPa | 3000 - 3300 |
| Elongation at break* | % | 1.5 - 2.5 |
| Flexural strength* | MPa | 90 - 100 |
| 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™ 19.00 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™ 19.00 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™ 19.00 is available in 35kg, 220kg and bulk containers.

Health and Safety

Please see separate Material Safety Data Sheet.

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