

# ESI Resin GP UK OTL

## Euroresins Standard Industrial Resin

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### Chemical/physical nature

ESI Resin GP UK OTL is an unsaturated polyester based on orthophthalic acid and standard glycols, dissolved in styrene. ESI Resin GP UK OTL contains barrier forming agents to reduce styrene emission and a thixotropic agent. The resin is pre-accelerated. ESI Resin GP UK OTL has a medium reactivity and a low viscosity.

### Major applications

ESI Resin GP UK OTL is well suited for hand lay-up and spray techniques. It readily impregnates the reinforcing materials during lay-up and does not run off inclined laminates. An outstanding feature of ESI Resin GP UK OTL is its low level of styrene emission and as a consequence reduced exposure to styrene in the workplace.

On account of its reactivity and curing behaviour ESI Resin GP UK is particularly suitable for the production of laminates almost free of internal stress.

### Product specifications upon delivery

Property	Range	Unit
Appearance	Hazy	-
Viscosity, Physica, 20 s-1, 23°C	300-800	m.Pas
Solids content, IR	53-65	%
Gel time from 25 to 35°C	18-30	Min
Peak temperature	105 – 135	C

### Remarks

Reactivity determined with 1.0 g Curox M-312 (United Initiators) added to 100 g resin.

### Properties of the resin (typical values)

Property	Value	Unit
Density, 20°C	Appr. 1100	Kg/m <sup>3</sup>
Flash point	Appr. 33	°
Stability, no init., dark, 25°C	3	Mon

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### Properties of cast unfilled resin (typical values)

Property	Value	Unit
Tensile strength	70	MPa
Tensile E-modulus	4.3	GPA
Elongation at break	2.0	%
Flexural strength	110	MPa
Flexural E-modulus	4.3	GPA
Elongation in flex	2.6	%
Impact res. - unnotched sp.	10	Kj/m <sup>2</sup>
Heat deflection temp. (HDT)	63	°C
Glass transition temp. (Tg)	93	°C

### Curing conditions

Mechanical properties determined on resin not containing thixotropic agent. Cured with 1 ml Curox M-312 (United Initiators) and 0.2 ml Co-oct. solution (1% Co in styrene) added to 100 g resin. Cured 24 h at room temperature and post-cured 24 h at 80 °C.

### Processing

ESI Resin GP UK OTL contains barrier forming agents to reduce emission of styrene. These agents may reduce the bonding strength of overlaminates if used in an inappropriate way. Good strength can be obtained with overlamination of the base laminate within 24 hours, if the surface is not too resin rich. In other cases, the surface might need sanding.

ESI Resin GP UK OTL normally exhibits tack-free cure. Nevertheless, the surface may not be cured wholly. To ensure complete cure of surfaces exposed to air, suitable additives (e.g. a paraffin solution) should be added. The final state of cure may be optimized by post-curing at elevated temperatures (e.g. 80°C) for several hours.

### Guidelines before use

The resin should be conditioned at a well defined, application dependant temperature (usually 15°C minimum for MEKP/Co cure). Stir the resin thoroughly before use.

### **Storage guidelines**

The resin should be stored indoors in the original, unopened and undamaged packaging in a dry place at temperatures between 5°C and 30°C. Shelf life is reduced at higher temperatures and the properties of the resin might change during storage. The shelf life of styrene containing unsaturated polyesters will be significantly reduced when exposed to light. Store in dark and in 100% light tight containers only.

### **Material Safety**

A Material Safety Data Sheet of this product is available on request.