

OPTIMOLD® RAPID TOOLING SYSTEM Unsaturated Polyester Resin

Version : November 2007 (rev.2)

APPEARANCE

Opaque pink / beige liquid resin

MAIN RESIN CHARACTERISTICS

Orthophthalic unsaturated polyester
High reactivity
Preaccelerated
Prefilled
Rapid tool building with excellent dimensional stability
Low shrink (ca. 0% linear shrinkage)

MOULDING INFORMATION

Hand lay-up or spray

MAIN APPLICATION

Rapid tooling system

LIQUID RESIN PROPERTIES*

(Typical values)

Specific gravity at 20°C:	ca. 1.45
Viscosity at 25°C:	500 – 550 mPa.s
Volatile content:	ca. 30%
Reactivity at 20°C, 1.5% MEKP 50	
Gel time:	18 – 22 minutes

*These values may or may not be manufacturing control criteria. They are listed for a reference guide only. Particular batches may not conform exactly to the numbers listed because storage conditions, temperature changes, age, testing equipment can each have significant effect. Products with properties outside these readings can perform acceptably. Final suitability is in the end use performance.

CURED PROPERTIES LAMINATE

(Typical values)

Tensile Strength:	80 – 90	MPa
Tensile Modulus:	8.0 – 8.4	GPa
Flexural Strength:	105 – 115	MPa
Flexural Modulus:	4.0 – 4.5	GPa
Glass Content:	25%	

CURED PROPERTIES UNREINFORCED CAST

(Typical values)

Elongation at break:	1.8 %
Heat Distortion:	ca. 95 – 100°C

SHELF LIFE

Recommended to be used within 2 months of manufacture date.

GUIDELINES BEFORE USE

Materials should be conditioned to a reasonable temperature (15°C minimum) prior to use. Resin should be agitated before use. For further information please consult our Application Guide. Longer pot-life can be achieved by reducing the catalyst level to 0.9% as a minimum level. In doing so, you must ensure that the resin has been conditioned to **at least 15°C**, preferably 18°C, and that all the other conditions such as room and mould temperature, previously mentioned, are adhered to. The finished moulding, providing enough layer thickness has been built up, should cure OK, however, if you have any signs of uneven white / cream colour in the finished moulding, post curing is recommended.

SAFETY PRECAUTIONS FOR HANDLING AND STORAGE

FOR FULL DETAILS PLEASE REFER TO SDS,

Polyester resins contain styrene monomer, classified as **HARMFUL** by inhalation and **IRRITATING** to eyes and skin. With a flash point **below 32°C**, polyester resins are classified with the proper shipping name 'resin solution, flammable' as determined by ADR Marginal 2301 Item 54. The current UK EH40 styrene occupational exposure limit is a MEL of 100ppm (8 hr TWA). And there is an industry, voluntary code of practice to work below 50 ppm. The Environmental Protection Act (1990,1995) must also be complied with. Resins should be stored cool, away from direct sunlight in closed containers. When stored in bulk, adequate venting of tanks is recommended together with a storage temperature not exceeding 20°C.

The information contained herein is based upon our own research and is intended to assist customers in determining whether our products are suitable for their specific applications. The user is required to check the quality, safety and suitability of our product prior to use. Starting point formulations and suggestions for use are given as guidance only and are made without warranty. Nor should it be construed as permission, inducement or recommendation to practise any invention covered by patent without authority from the owner thereof.