TECHNICAL DATA SHEET
RM 3000

RM 3000 is an unsaturated polyester resin based on vinyl ester, especially formulated for producing composite moulds for applications where high thermal and chemical resistance or a degree of translucency are required. Moulds made with **RM 3000** give perfect plug replication due to the zero shrink properties of the resin.

CHARACTERISTICS

- **RM 3000** has been designed to polymerise at room temperature following addition of normal MEKP catalysts.
- Rapid cure and rapid manufacture of the moulds.
- An easy to use product, pre-filled and pre-accelerated.
- Zero shrink properties in thin or thick sections
- Low exotherm curing system
- Semi-translucent when cured
- High solids level with low viscosity
- Fast build up of Barcol hardness

TYPICAL PROPERTIES OF LIQUID RM 3000

Minimum storage life	6 months (mix before use)
Flammability	flammable
Specific gravity	1.48
Appearance	mid brown liquid
Gel time (20°C – 1% MEKP on 100 g)	40 minutes
Peak exotherm (20°C – 1% MEKP on 100 g)	85 – 100°C
Brookfield viscosity (20°C – sp4)	100 rpm = 1100 – 1200 mPa.s
Non volatile content	76 – 80%

MECHANICAL PROPERTIES OF CAST RM 3000

Heat distortion of temperature	100°C (cast resin)
Tensile strength*	100 MPa
Elongation at break*	8%
Flexural strength*	184 MPa
Flexural modulus*	6.09 GPa
Barcol hardness (934-1)	35 after 3 hrs, 50 after 24 hrs

*Tests realised on resin reinforced with 24% glass fiber.

STORAGE CONDITIONS AND HANDLING

The tooling resin **RM 3000** is subject to the Highly Flammable Liquid Regulations. The product should be stored under cool conditions in closed opaque containers at a temperature not exceeding 25°C. Avoid exposure to heat sources such as direct sunlight.

APPLICATION RECOMMENDATIONS

RM 3000 is a ready to use product, it is filled and pre-accelerated. It is only necessary to give the drum a light stirring before use. **RM 3000** is especially formulated for mould making, with a good surface profile and dimensional stability in thick or thin sections.

ADVANTAGES AND RECOMMENDATIONS

- Precision moulds can be manufacture much quicker than with conventional resin systems.

- We recommend our tooling gel coats **GC 200/201** isophtalic or **GC 206/207** vinyl ester (spray and brush versions available in several colours). These will give good mechanical strength and chemical resistance
- Gel coat thickness must be between 600 and 800 microns (see application sheet for more details).

APPLICATION OF TOOLING RESIN RM 3000

Before use, mix the resin well to achieve a homogeneous product.

For optimum result of cure, don't catalyst with under 1% of MEKP
To obtain optimum properties of the tooling resin, we advise to use **RM 3000** at temperature between 18 and 25°C. Low temperatures will effect the curing and properties of the resin, and high temperatures will give too short a gel time.

HAND LAY-UP

- When the gel coat becomes tacky, apply some catalysed resin to wet the surface. This will aid the wetting out of the glass fibre.
- Apply a layer of 100 - 300 g/m² chopped strand mat as a skin coat with **RM 3000**. Carefully remove air voids with a roller. Allow the first skin coat of **RM 3000** to cure before building up more layers.
- Build up layers of **RM 3000** using 300 g/m², 450 g/m² or 600 g/m² chopped strand mat to obtain the required thickness. Remove air voids with a roller between each layer.

SPRAY UP

Tests were made using equipment from **GLAS-CRAFT LPAIIS/SP 85 EC.**
System pump = 11:1
Gun with Air Assist Containment.

- As with hand lay-up, apply some catalysed resin on the polymerised gel coat to wet the surface.
- Apply a skin layer of 100 - 300g/m². Remove air voids with a roller.
- Spray a layer to the required thickness using resin and chopped fibres.
- After the resin has gelled, continue until the required thickness is achieved, with subsequent additions of resin and chopped fibres.

Note: Avoid contaminating the surface of the mould with dust between laminates, as this can effect the interlaminar adhesion.

After 24 hours, the mould is ready to be released from the plug.

ADVANTAGES

- **Rapid cure and rapid making of moulds.**
- **Nil shrink. Low profile surfaces.**
- **Reduction of mould cost**
- **Complete dimensional stability.**
- **High HDT**
- **Good mechanical properties**
- **Semi – translucent when cured**
- **Low level of VOC (HAP)**