

## Product Data Sheet: Nord Composites RM 3000

**RM 3000** is an unsaturated polyester resin based on vinyl ester, especially formulated for producing composite molds for applications where high thermal and chemical resistance or a degree of translucency are required.

### CHARACTERISTICS

RM 3000 has been designed to polymerise at room temperature following addition of MEKP (Peroxide) with minimum of 9% active oxygen content. Rapid cure and rapid manufacture of the mold (in one day). An easy to use product, pre-filled and pre-accelerated, with no further mixing required. Fillers: reduce the cost and improve rigidity of the mold.



### 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. RM 3000 is a ready to use product, filled and pre-accelerated. Especially formulated for mold making, with a good surface profile and dimensional stability even in thick sections.

### ADVANTAGES AND RECOMMENDATIONS

Manufacture of a mold in one day instead of one week using standard resin system. Gel coat thickness must be between 600 and 800 microns.

### 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 under 1% of MEKP (Peroxide) (ask Nida-Core Corporation for gel time results with different percentages of catalyst if required). To obtain optimum properties of the tooling resin, we advise to use RM 3000 at temperature between 18 and 25°C. Low temperatures are not good for the low shrink effect and high temperatures will give a short 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 g/m<sup>2</sup> (10 tex). Remove air voids with a roller. Apply then 6 layers of 300 g/m<sup>2</sup> or 4 layers of 450 g/m<sup>2</sup> (40 tex) to obtain a thickness of 3 to 4 mm. Remove air voids with a roller between each layer. The laminate will turn white when curing. Wait for the peak exotherm to subside (about 1 hour) before starting the second laminate. For the second laminate, use 4 layers of 450 g/m<sup>2</sup> (40 tex). Remove air voids with a roller between each layer and wait for the laminate to reach peak exotherm again and turn white. Proceed like this until you achieve the thickness you require.

### SPRAY UP

Tests were made using equipment from GLAS-CRAFT LPAIIS/SP 85 EC. System pump = 11:1 Gun with Air Assist Containment. Like in the hand lay-up, apply some catalysed resin on the polymerised gel coat to wet the surface. Apply a layer of 100 g/m<sup>2</sup> (10 tex). Remove air voids with a roller. Spray a layer of 3 to 4 mm of resin and chopped fibres. After it has turned white and the exotherm has died down (about 1 hour), continue until the required thickness is achieved, with subsequent additions of 3 to 4 mm of resin and chopped fibres.

**ADVANTAGES**

Rapid cure and rapid making of molds. NO shrink. Low profile surfaces. Reduction of mold cost. Semi Translucent when cured Complete dimensional stability. Uses standard catalyst : MEKP Peroxide) with minimum 9% active oxygen content LOW VOC (HAP) Content, High HDT Rating Consult with your sales rep for approved and recommended catalyst specifications.

**Typical Properties Of Liquid RM 3000**

Maximum 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 mPa.s (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 performed on resin reinforced with 24% glass fibre content