

## **Vinyl Ester Resin IK – 300 0**

**Product Name: IK – 3000 Vinyl Ester Resin**

**Description:** IK-3000 vinyl ester resin is a general purpose type resin used in the manufacture of fiberglass reinforced plastic components and other applications where it is resistant to a broad range of acid base and salt solutions up to about 90 OC.

**Properties and applications:** IK-3000 is suitable for use in contact moulding, Pultrusion, filament winding and centrifugal moulding applications with its very high wetting characteristics. Please refer to our chemical resistance chart when used in harsh chemical environments.

**Cold curing:** The accelerator should be thoroughly dispersed in the resin then the correct amount of catalyst should be added and stirred into the accelerated resin just before the use.

**Hot curing:** Benzoyl peroxide and other hot curing peroxides may be used heat assisted curing is also applicable.

IK-3000 can be used for the fabrication of all types of chemical plants civil engineering and food processing industries where strong corrosive environments are involved.

**Post curing:** Excellent laminates can be made from IK-3000 by curing at ambient temperature (25°C)

but when cold curing or heat assisted curing is used, a post cure of 24 hours at ambient temperature followed by a minimum three hours at 80°C or 15 hours (or more) at 50 °C is recommended for optimum performance. For hot curing a post – cure is not necessary. Post – curing is a necessity if the moulding will be used in contact with foodstuffs. They must be post cured at 80 °C for 3 hours and then if possible should be wet-steam cleaned or filled with hot water containing a non-perfumed detergent to stand for 2 hours, which will then be emptied and washed several times with clean hot water.

**Typical properties of liquid resin.**

Property *1	Value
Acid Value	15 ± 5 mgr KOH/gr
Appearance	Clear liquid / yellow
Solid content	55 ± 5 %
Viscosity *2	200 cps
Specific gravity	1.05 - 1.1 gr/cm <sup>3</sup>
Gel time *3	10 - 13 min
Time to Peak	20 – 25 min
Peak exotherm	135 ± 5 0C
Shelf life	6 Month

\*1 : Measurement was obtained under 250C

\*2 : LVT# 3-60 rpm (@) 250C

\*3 : Cobalt 10% , 0.1 phr MEKP A 60 , 1.5% (@) 250C , DMA 100 % , 0.3 Phr

**TYPICAL CLEAR CASTING PROPERTIES OF CURED**

PROPERTY	ST *4	TEST METHOD
Tensile strength	60 ± 5 MPa	ASTM D638
Tensile modulus	2.2 - 2.4 Gpa	ASTM D638
Tensile elongation	1 - 2 %	ASTM D638
Flexural strength	100 - 120 Mpa	ASTM D790
Flexural modulus	4.0 - 4.2 Gpa	ASTM D790
Volume shrinkage	1.5 - 2.5 %	ASTM D2566
HDT *5	105± 0C 5	ASTM D648
Barcol Hardness	45 ± 5	ASTM D2583

\*4 : ST values based on conversion

\*5 : Cure condition for HDT 24 hours at room temperature then 2 hours at 1050C

**CHEMICAL RESISTANCE GUIDE:**

<b>CHEMICAL</b>	<b>MAX.TEMP. Deg.C.</b>	<b>CONCENT. %</b>
<b>Hydrochloric Acid</b>	<b>83</b>	<b>10</b>
	<b>82</b>	<b>20</b>
	<b>65</b>	<b>37</b>
<b>Sulphuric Acid</b>	<b>99</b>	<b>25</b>
	<b>82</b>	<b>50</b>
	<b>38</b>	<b>75</b>
<b>Nitric Acid</b>	<b>65</b>	<b>5</b>
	<b>50</b>	<b>20</b>
	<b>NR</b>	<b>40</b>
<b>Chromic Acid</b>	<b>65</b>	<b>10</b>
	<b>65</b>	<b>20</b>
	<b>NR</b>	<b>30</b>
<b>Hydrofluoric Acid</b>	<b>65</b>	<b>10</b>
	<b>38</b>	<b>20</b>
<b>Formic Acid</b>	<b>80</b>	<b>10</b>
	<b>35</b>	<b>50</b>
	<b>NR</b>	<b>98</b>
<b>Sodium Hydroxide</b>	<b>82</b>	<b>10</b>
	<b>82</b>	<b>25</b>
	<b>99</b>	<b>50</b>
<b>Potassium Hydroxide</b>	<b>65</b>	<b>10</b>
	<b>65</b>	<b>25</b>
	<b>82</b>	<b>45</b>
<b>Ammonia Aqueous</b>	<b>82</b>	<b>5</b>
	<b>65</b>	<b>15</b>
	<b>38</b>	<b>29</b>
<b>Sodium Hydrochloride</b>	<b>65</b>	<b>5.25</b>
	<b>82</b>	<b>10</b>
	<b>82</b>	<b>18</b>
<b>Hydrogen Peroxide</b>	<b>65</b>	<b>5</b>
	<b>65</b>	<b>30</b>
<b>Carbon Tetrachloride</b>	<b>65</b>	<b>100</b>
<b>Alcohol</b>	<b>NR</b>	<b>100</b>
<b>EDC</b>	<b>NR</b>	<b>100</b>
<b>Toluene</b>	<b>25</b>	<b>100</b>
<b>Gasoline</b>	<b>82</b>	<b>10</b>

**Notice in Use:**

- 1. If IK3000 is blended with cobalt salt promoters shelf life will be shortened. promoted IK3000 must be used within three months.**
- 2. The gel time of IK3000 is affected primarily by catalyst concentration and temperature. The variation of cure characteristics may be caused by the variations of catalyst. Humidity pigment fillers and other additives it is recommended that the fabricators check the cure characteristic with a small quantity resin before proceeding for bulk production.**
- 3. IK3000 contains organic solvent (styrene), keep away from heat sparks and flames.**
- 4. IK3000 is a potentially reactive chemical please store it in dark and keep away from heat and direct sunshine.**
- 5. Containers not completely emptied must be closed immediately after use.**

**PACKAGE:**

**Standard packing is 200 kg steel drum.**