S.S.G. TRADING
L.L.C.

P.O Box 12911
Ajman, U.A.E.
Tel: +9716 745 4178
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GRP LINING
RAW MATERIAL
SPECIFICATION

Email: sales@ssgtradingllc.com
Website: http://www.ssgtradingllc.com

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CERTIFICATE OF ANALYSIS

POLYPOL – 1003

PRODUCT : **General Purpose Orthophthalic Thixotropic / Accelerated**

BATCH NO. : **125017**

PROPERTY	TEST METHOD	UNIT	SPECIFICATION	RESULT
Appearance	PCTM/FP/01		Bluish Cloudy Viscous	Bluish Cloudy Viscous
Clarity	PCTM/FP/02		Cloudy	Cloudy
Specific Gravity at 25ºC	ASTM D 1475 PCTM/FP/07		1.0 – 1.2	1.1
Acid Number (On Solution)	ASTM D 1639-90 PCTM/FP/11	Mg of KOH/gm	Max. 25	14.5
Viscosity by Brookfield viscometer at 25ºC, spindle=3,rpm=60	ISO 2555 PCTM/FP/12	Cps	600-800	656
Thix Index	PCTM/FP/13		Min 1.8	2.1
Non volatile matter	ASTM D 1644-88 /PCTM/FP/14	%	57 - 61	60.13
Gel Time	ASTM D 2471 PCTM/FP/14	Minutes	15 - 25	17 Min 41 Sec
Curing Time	ASTM D 2471 PCTM/FP/14	Minutes	25 – 40	30 Min 13 Sec
Peak Exotherm Temperature	ASTM D 2471 PCTM/FP/14	º C	Min 140	180.4

Gel time = 100 gm Resin + 2 gm MEKP (Butanox M 50, active Oxygen = 8.9%) @ 25º C

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STORAGE STABILITY:

POLYPOL – 1003 Unsaturated Polyester resin is stable for three months from the date of production when stored in the original containers away from sunlight &consistently at not more than 77ºF/25º C.

Technical Data Sheet

PolyPol – 1003

General Purpose Orthophthalic Polyester resin for Use in Tropical Climate

Resin Type	**:**	**Orthophthalic**
Special Features	**:**	**Thixotropic / Pre-Accelerated, General Purpose**
Processing	**:**	**Contract Moulding / Cold Curing**
Note	**:**	**For Boat hulls / Water Tanks / Pre-Fab Cabins / Bath Tubs Portable toilets, Flower pots, chairs, automotive parts etc.**

Polypol-1003 is medium viscosity, medium reactivity, general purpose, Thixotropic, pre-accelerated unsaturated polyester resin. The raw materials used in the manufacture of this resin are listed as acceptable in FDA regulation Title 21 CFR 177.2420 for repeated use in contact with food subject to user's compliance with the prescribed limitations of that regulations.
Polypol-1003 is medium reactive Orthophthalic polyester resin designed to give:
Fast wetout of fiberglass reinforcements, higher glass to resin ratio leading to better coverage
Raid cures, Fast moulding cycles.
Products moulded out of Polypol-1003 are having light weight, dimensionally stable, heat resistant, water resistant.
Polypol-1003 is suitable for moulding FRP articles such as Furniture, sanitary ware, building panels, machine covers and guards, automotive hoods, cooling towers, boats etc.

Specification & Properties of resin PolyPol-1003

Properties	Test Method	Unit	Typical Value
Appearance	PCTM/FP/02		Bluish cloudy viscous liquid
Colour			
Specific Gravity at 25º C	ASTM D 1475 PCTM /FP/07		1.1 – 1.2
Viscosity by Brookfield viscometer at 25º C Spl=3, rpm=60	ISO 2555 PCTM /FP/12	Mpa.s	600 – 800
Thixotropic Index (ratio)	ASTM D 1824		Min. 2
Volatile Content (1gm / 110ºc / 1hr)	ASTM D 1644-88	%	38 – 42
Curing at 25ºC with 2% MEKP Butanox M-50			
Gel Time	ASTM D 2471 PCTM/FP/14	Minutes	15 – 25
Curing Time	ASTM D 2471 PCTM/FP/14	Minutes	25 – 35

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Peak Exotherm Temperature	ASTM D 2471 PCTM/FP/14	º C	150 Min.
Acid Number (on solution)	ASTM D 1639-90 PCTM/FP/11	Mg of KOH/gm	20 Max.
Stability at 25º C in the dark from date of production	PCTM/FP/16	Months	3

Properties of Cured, Un-reinforced Resin PolyPol-1003

Casting Preparation	100 ppm HQ
Initiator Type and Amount	2% MEKP (Butanox M-50)
Curing cycle	24 Hrs at 25ºC + 3 Hrs. at 85ºC + 24 Hr at 25ºC * 24 Hrs at 25ºC + 6 Hrs. at 85ºC + 24 Hr at 25ºC

Properties	Test Method	Unit	Typical Value
Tensile Strength	ISO 527 – 1993	MPa	60
Tensile Modulus	ISO 527 – 1993	MPa	3200 – 3400
Elongation at Break	ISO 527 – 1993	%	2.0
Flexural Strength	ISO 178 – 1993	MPa	120 Min
Flexural Modulus	ISO 178 – 1993	MPa	3500 Min.
*Heat Deflection Temperature	ISO 75/A	º C	60-65
Barcol Hardness at 25ºC	ASTM D 2583-87	Unit	40 Min

Do not mix Catalyst and Accelerator directly to avoid explosive mixture. Never add metal salts (Accelerators / Promoters) or Promoted resins to a Peroxide. When adding peroxides to resin solution, promptly and thoroughly mix the resulting product. Never add organic peroxides to a hot diluents or process. Avoid contamination of any foreign materials including accelerator, promoters, metal salts, strong acids or sanding dust.
The accelerator must be thoroughly dispersed in the Polypol-1003. Shortly before use, add the correct amount of catalyst and mix thoroughly. When catalyst is added to resin which has been accelerated for several days, the pot life may be shorter than that of freshly, accelerated resin.

CURE CONDITIONS

Curing of Polypol-1003 can be initiated with 1.5% of MEKP (55%) 100 ppm HQ per 100 gm of resin. Casting is allowed to cure for 24 hours at room temperature, then post-cured at 110º C for 2 hours. And again cure for one hour at 100º c. Curing should not be carried out below 15ºC and the resin must be allowed to attain ambient temperature (above 15ºC) before being formulated for use.
Not to use any amines in production and post curing is essential for all types of mouldings.
Mouldings which are coming in contact with water or foodstuff must be cured at 25º C for 24 hours and post cured 3 hours at 100º C. After achieving its mechanical properties, moulding must be thoroughly wet steam cleaned for at least 2 hour before being put in to use. Steam cleaning for four hours is preferred. When wet steam cleaning is not practical, then the vessel shaped mouldings should be filled with hot water (60ºC - 80ºC) containing non-perfumed detergent and allow to stand

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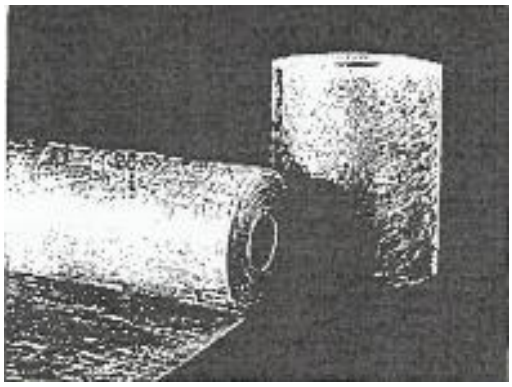
for 4 hours. It should be then emptied and thoroughly washed several times in repeated clean hot water to avoid smell of Styrene and change in properties of stored water. Above precautions are essential to avoid the tainting of water.

*Polypol-1003 can be supplied as per customer's specific requirement of Gel time and viscosity.

Fiber1 ECM1 is the trade mark of the shopped Strand mat which is manufactured by Glass fiber Technology Co. Ltd. Made from E-Glass chopped strands bonded with emulsion binder designed for use in orthophthalic and isopthalic polyester, vinylester, and epoxy resin systems.

Chopped strand mat is primarily use for Hand Lay-Up (HLU) process, Filament Winding (FW) process and Press Moulding of FRP products that includes Water Tanks, Boats, Bathroom Accessories, Pipes, Shelter, Building Materials, Automobiles, Furniture, Agro equipments and other FRP products.

E-Glass Chopped Strand Mat Emulsion Bonded Fiber1 ECM1



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NAMING:

Example: Fiber1 ECM1 – 450E/127

Fiber1 : Trademark of Glass Fiber Technology Co. Ltd (GFT)
ECM1 : GFT Code
450 : Density (g/m²)
E : Emulsion Bonded
127 : Mat Width in cm.

KEY FEATURES

- Fast & Easy Impregnation
- Fast-wet-Through and de-airing
- Excellent Conformability
- Good Mechanical Properties
- Low Resin Consumption

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- Silane Based Sizing on Strands

PRODUCTS AVAILABLE

The main advantage of **Fiber1 ECM1** chopped strand mat is the availability of an extensive range of widths and weights (widths from 25 to 260 cm, nominal weights from 150 to 900 g/m²). Most combinations of weights and widths can be supplied. Subject in some cases to minimum order quantities, extended lead times and complementary widths.

E-Glass Chopped Strand Mat Emulsion Bonded Fiber1 ECM1

PRODUCT PROPERTIES (Standard)

Weight (Density)	Tensile Strength (MPa)	Loss on Ignition (%)	Residual Moisture	Width (Standard)
225 g/m²	100 MPa	3.7% mass	0.02% mass	127 cm
300 g/m²	147 MPa	3.75% mass	0.02% mass	127 cm
450 g/m²	196 MPa	3.75% mass	0.02% mass	127 cm
600 g/m²	245 MPa	3.75% mass	0.03% mass	127 cm
Tolerance ± 8%	**186 ± 49**	**3.75 ± 0.5**	**0.2% max**	**± 3**

PACKING

Each roll is put into individual carton then palletized. For bulk packing for each pallet we put 16 rolls.

STORAGE

It is recommended that fiberglass I store vertically in a cool and dry environment, with recommended storage temperatures ranging between 10 ~ 30° C and its relative humidity between 50 ~ 75%, to avoid problems with humidity or static electricity, the glass product should be conditioned in the working area prior to use. This fiberglass should remain in the packaging prior to its use.