





Eternal Materials

UNSATURATED POLYESTER RESIN

VINYLESTER RESIN

FIRE RETARDANT RESIN

EPOXY SYSTEM

STRUCTURAL ADHESIVE



Offering the most advanced resin system for the most demanding requirement in Marine, Building Material, Transportation and Composites markets.



Eternal Materials Profile

Core Business : Manufacturing, processing and sales

Founding : in 1964 , Headquarters in Kaohsiung, Taiwan

Year of Listed on Taiwan Stock Exchange : 1994

Chairman : Allen K. L. Kao

Number of Employees : 4,747

Number of Production Sites : 23 (3 in Taiwan, 13 in Mainland China, 1 in United States,
1 in Thailand, 3 in Japan, 1 in Malaysia and 1 in Italy)

Overall Sales Revenue in 2018 : USD 1,436 million

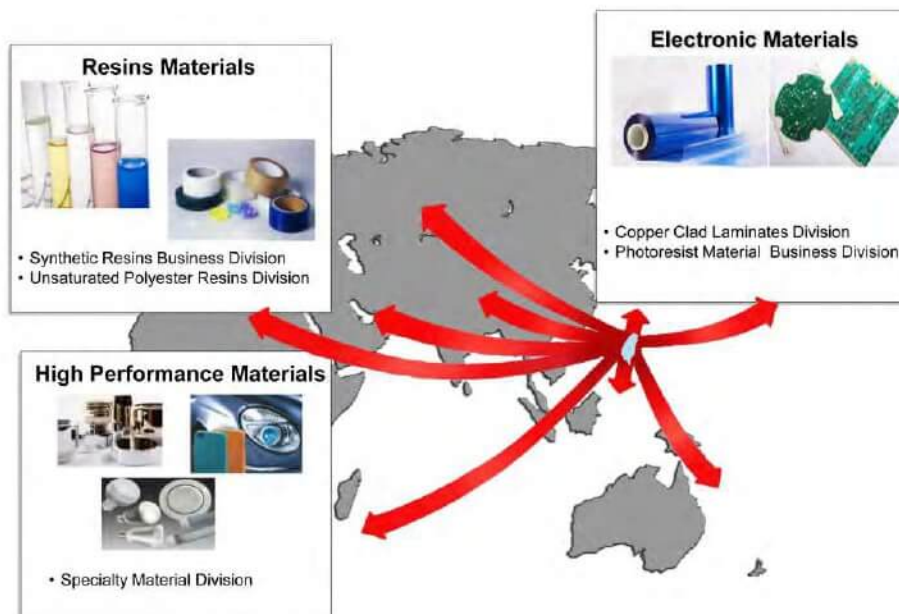
Headcounts of Researchers : 559 (R&D expenditures accounted for 3% of sales revenue)

Eternal's Position:

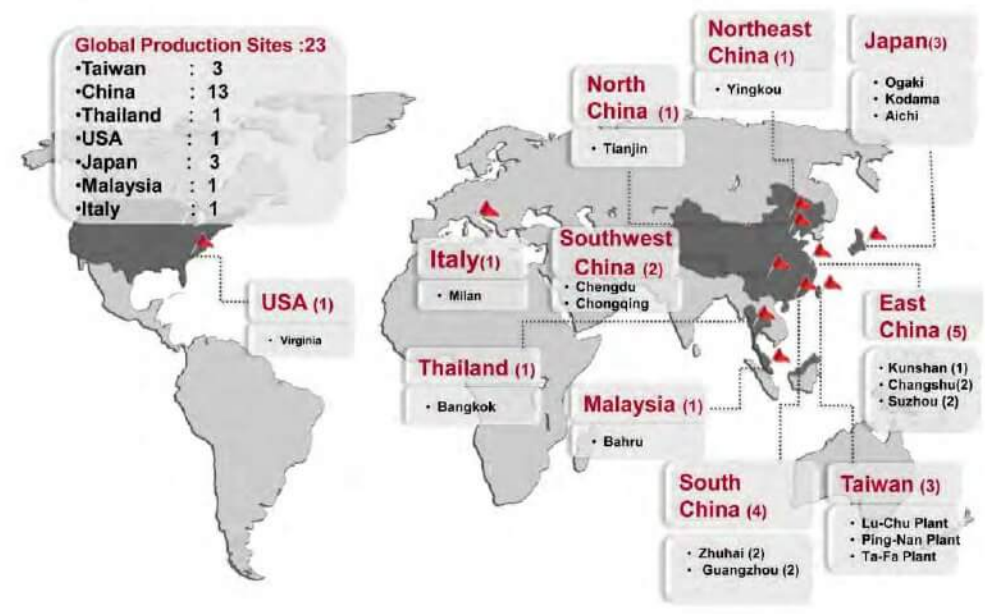
- One of the leading suppliers of Dry film photoresist in the world.
- One of three largest UV curable Monomers & Oligomers material suppliers.
- One of the leading suppliers of synthetic resin in Asian.



Business Groups



Global Production Sites





Unsaturated Polyester Resins Division

Eternal has experienced in unsaturated polyester resins field for over 40 years, and our product cover most application in the market. On the base of unsaturated polyester resin, we further expand our product portfolio and now we are also a key supplier of vinyl ester resin, epoxy system, fire retardant resin, structural adhesive and polyester polyol.

With long-term commitment in supplying competitive and consistent quality products, our products have met stringent domestic and international quality standards, including Lloyd's, DNV and NK, and export to over 30 countries worldwide.

Contents

PRODUCT LINE

A. UNSATURATED POLYESTER RESIN

- 1 HAND LAY-UP AND SPRAY-UP 01
- 2 PRESS MOLDING 01
- 3 SMC/BMC 02
- 4 CHEMICAL-RESISTANCE 03
- 5 CORRUGATED SHEET 03
- 6 BOATS AND YACHT 04
- 7 DECORATIVE PANEL 05
- 8 CASTING 05
- 9 GEL COAT 06
- 10 BUTTON 07
- 11 SYNTHETIC MARBLE 09
- 12 AUTOMOTIVE PUTTY 10
- 13 RESIN CONCRETE 11
- 14 CURED-IN-PLACE PIPES (CIPP) 12
- 15 FIRE RETARDANT 13
- 16 ACCESSORIES 15

B. EPOXY SYSTEM 16

C. ADHESIVE 18

- 1 UP/VER ADHESIVE 18
 - 2 MARINE FILLER 19
 - 3 HIGH PERFORMANCE ADHESIVE (ACRYLIC) 20
 - 4 HIGH PERFORMANCE ADHESIVE (EPOXY) 21
 - 5 STONE GLUE 22
 - 6 ADHESIVE PRIMER 23
-

A. UNSATURATED POLYESTER RESIN

1 HAND LAY-UP AND SPRAY-UP

Item Name	Type	Viscosity(cps) (25°C)	tg(min.) (25°C) _(a)	Properties	Features	Applications
ETERSET 2504PT	Ortho	200 - 600	15 - 35	Medium reactivity, thixotropic.		Small FRP products.
ETERSET 2504APT	Ortho	200 - 550	8 - 30	Medium reactivity, waxed, thixotropic.		Small FRP products.
ETERSET 2505PT	Ortho	200 - 550	8 - 30	Medium reactivity, thixotropic.	Excellent wet-out	Small FRP products.
ETERSET 2507APT	Ortho	350 - 600	15 - 35	Waxed, thixotropic.		Small FRP products.
ETERSET 2660PT-2	ISO	380 - 450	28 - 35	Heat and chemical resistance	High heat-distortion temperature.	Tank, pipe.
ETERSET 2660PL	ISO	200 - 300	35 - 45	Heat and chemical resistance	High heat-distortion temperature.	Tank, pipe.
ETERSET 2930PT	TPA	200 - 600	15 - 35	Medium reactivity, thixotropic.		Small FRP products.
ETERSET 2930APT	TPA	200 - 550	8 - 30	Medium reactivity, waxed, thixotropic.		Small FRP products.

(a)Time to Gel : 1% MEKP(55%)

2 PRESS MOLDING

Item Name	Type	Viscosity(cps) (25°C)	tg(min.)	Properties	Features	Processing Technique	Applications
ETERSET 2585	Ortho	400 - 600	6 - 9 _(b)	Resilient.	Good impact strength	Pultrusion	Umbrella rod, hollow fishing rod and etc.
ETERSET 2833	ISO	400 - 800	3 - 6 _(b)	Water and heat resistance	Fast wet-out, heat resistance and toughness.	Pultrusion	FRP products
ETERSET 2844	ISO	300 - 500	8 - 16	Resilient.	Good impact strength	Filament winding	Tank, pipe.
ETERSET 2832	ISO	650 - 750	4 - 5 _(b)		Fast wet-out, heat resistance and toughness	Pultrusion	FRP products

(b)Time to Gel : 2% BPO (50%) @80°C

3 SMC/BMC

Item Name	Type	Viscosity(cps) (25°C)	tg(min.) (b)	Properties / Features	Processing Technique
ETERSET 2030	Thickener carrier	250 - 300	20 - 25	High reactivity , low viscosity thickener paste	BMC, SMC.
ETERSET 2736	IPA	900 - 1200	14 - 16	Hot water and weather resistance , pigmentation	SMC
ETERSET 2810	THPA	700 - 800	8-10	high gloss , heat resistance	BMC, SMC.
ETERSET 2840	DCPD	900 - 1100	6-8	High reactivity , high gloss , low shrinkage	BMC, SMC.
ETERSET 2935	TPA	2000 - 3000	10-15	Hot water resistance, thickenable., pigmentation	SMC
ETERSET 2964	VER	1500-2500	15-25 ^(h)	Superior chemical resistance. Thickenable vinyl ester resin.	BMC, SMC.
ETERSET 2965	VER	8000-10000	2-4 ^(q)	Thickenable without filler especially for carbon fiber.	SMC.
ETERSET 3584-2	MA	1000 - 1300	4-6	High reactivity , high gloss	BMC, SMC.

(b)Time to Gel : 2% BPO(50%) @ 80°C

(h) Time to Gel : 2% BPO(50%) @ 82°C

(q) Time to Gel : 1% TBPB @ 130°C

• LOW SHRINKAGE/PROFILE ADDITIVE FOR SMC/BMC COMPOUND

Item Name	Chemistry	Viscosity(cps) (25°C)	Description
ETERSET 2006	PS	3200 - 4000	Low shrinkage additive
ETERSET 2031	PMMA	2200 - 2800	Low profile additive
ETERSET 2046	Saturated Polyester	140 - 170	Low profile additive

4 CHEMICAL-RESISTANCE

Item Name	Type	Viscosity(cps) (25°C)	tg(min.)	Features	Applications
ETERSET 2931P	TPA	360 - 440	20 - 25 _(a)	Excellent resistance to water spotting.	Filament winding tank, pipe.
ETERSET 2942	Bisphenol A	400 - 600	8 - 12 _(b)	Good corrosion resistance.	Corrosion control applications.
ETERSET 2960	Bisphenol A Vinyl Ester	300 - 600	15 - 40 _(g)	Superior chemical resistance. High strength and toughness.	Corrosion control applications.
ETERSET 2960-V	Bisphenol A Vinyl Ester	100 - 300	20-40 _(i)	Superior chemical resistance. Low viscosity and easy wetout .	Vacuum infusion.
ETERSET 2962	Novolac Vinyl Ester	300 - 600	15 - 25 _(p)	Superior chemical resistance. High HDT.	Corrosion control applications.
ETERSET 2964	Bisphenol A Vinyl Ester	1500 - 2500	15 - 25 _(h)	Superior chemical resistance. Thickenable vinyl ester resin.	BMC, SMC.
ETERSET 2967	Brominated Vinyl Ester	300 - 600	15 - 35 _(g)	Superior chemical resistance. Fire retardant without Sb ₂ O ₃ , oxygen index 42, UL-94 V-0 certified.	Corrosion and fire retardance control applications.

(a) Time to Gel : 1% MEKP(55%)

(b) Time to Gel : 2% BPO(50%) @ 80°C

(g) Time to Gel : 0.3% Co(6%) + 1% MEKP(55%)

(h) Time to Gel : 2% BPO(50%) @ 82°C

(i) Time to Gel : 0.7% PT-203 + 1% KP-100 (PT-203 is Eternal's promoter)

(p) Time to Gel : 0.4% Co(6%) + 0.05% DMA + 1.2% MEKP(55%) @ 25°C

Item Name	Type	Viscosity(cps) (25°C)	Working Time (min.)(25°C)	Heat Deformation Temperature(°C)	Features	Coverage Area (Kg/m ²)
ETERSET EP-60	Modified Vinyl Ester	150 - 250	15 - 25*	115	1. Prepromoted 2. Increase adhesion strength on concrete 3. Excellent chemical and heat resistance	0.3
ETERSET EP-68	Elastomer - modified Vinyl Ester	350 - 450	25 - 35**	80	1. Prepromoted 2. Increase adhesion strength on metal and concrete 3. Great toughness and elongation 4. Excellent chemical resistance	0.4

* 100g resin / 1.2% MEKPO / 25°C

**100g resin / 2% MEKPO/ 25°C

5 CORRUGATED SHEET

Item Name	Type	Viscosity(cps) (25°C)	tg(min.) (25°C)	Features	Applications
ETERSET 2132L	Ortho		5 - 7 _(b)	Good translucency, weathering resistance, high strength.	Continuous lamination, flat and corrugated sheet.
ETERSET 2133P	Ortho	240 - 280	15 - 20 _(a)	Excellent translucency, weathering resistance. good translucency	FRP corrugated sheet.
ETERSET 2136	Ortho	250 - 300	3 - 5 _(f)	Fast wet-out, good translucency, weathering resistance.	Continuous lamination, flat and corrugated sheet.
ETERSET 2449P-H	Ortho	230 - 280	11 - 13 _(a)	Excellent translucency, weathering resistance.	FRP corrugated sheet.

(a) Time to Gel : 1% MEKP(55%)

(b) Time to Gel : 2% BPO(50%) @ 80°C

(f) Time to Gel : 1% CHP @ 60°C

6 BOATS AND YACHT

Item Name	Type	Viscosity(cps) (25°C)	tg(min.) (25°C)	Features	Processing Technique/ Applications
ETERSET 1629PT	ISO	400 - 550	25 - 50	Heat and chemical resistance. Approved by DNV.	Fishing boats, yachts and pools etc.
ETERSET 1629	ISO	270 - 340	40 - 60	Excellent wet-out ; Low shrinkage. Approved by DNV.	SCRIMP, VARTM.
ETERSET 1629P-D	ISO	150 - 200	100 - 120	Excellent wet-out ; Low shrinkage. Approved by DNV.	SCRIMP, VARTM.
ETERSET 2597PT	Ortho	350 - 600	20 - 60	Excellent wet-out, ideal for large structures. Approved by DNV.	Fishing boats, yachts and pools etc.
ETERSET 2597PTC	Ortho	300 - 1200	20 - 90	Excellent wet-out, ideal for large structures. Color indicated.	Fishing boats, yachts and pools etc.
ETERSET 2597PTCL	Ortho	300 - 1200	20 - 90	Excellent wet-out, ideal for large structures. Color indicated, low styrene emission.	Fishing boats, yachts and pools etc.
ETERSET 2597-I	Ortho	250 - 350	50 - 60	Excellent wet-out ; Low shrinkage. Approved by DNV.	SCRIMP, VARTM.
ETERSET 2597P-I	Ortho	250 - 350	50 - 60	Excellent wet-out ; Low shrinkage. Approved by DNV.	SCRIMP, VARTM.

7 DECORATIVE PANEL

Item Name	Type	Viscosity(cps) (25°C)	tg(min.) (25°C) _(a)	Features	Applications
ETERSET 2210AP	Ortho	600 - 800	2 - 5	Good working ability, general type	Decorative panel for table top, door, etc.
ETERSET 2210AP-6	Ortho	300 - 600	2 - 5	Good working ability, low viscosity	Decorative panel for table top, door, etc.

(a) Time to Gel : 1% MEKPO (55% in DMP)

8 CASTING

Item Name	Type	Viscosity(cps) (25°C)	tg(min.) (25°C) _(a)	Features	Applications
ETERSET 2112AP	Ortho	300 - 600	5 - 15 _(a)	Flexible, low shrinkage.	Furniture part.
ETERSET 2121P-1	Ortho	300 - 600	10 - 20 _(a)	Low shrinkage, resistance to crack.	Large clear casting objects.
ETERSET 2121P-D	Ortho	300 - 600	10 - 15 _(a)	Low shrinkage, resistance to crack.	Large clear casting objects.
ETERSET 2126AP	Ortho	200 - 500	3 - 10 _(a)	Resistance to crack, semi-rigid.	General or hollow casting objects.

(a) Time to Gel : 1% MEKPO (55% in DMP)

9 GEL COAT

Item Name	Type	Viscosity(cps) (25°C)	tg(min.) (25°C)	Features	Applications
ETERSET 2010	Ortho	850 - 1200	-	Excellent wetting and grinding of pigments.	Pigment concentrates and pastes.
ETERSET 2592PT-2	Ortho	5000 - 6500	15 - 20 _(a)	Superior wet-out and mechanical properties, relatively high thixotropic index.	Ortho type gel coat base resin.
ETERSET 2731-1	ISO/NPG	500 - 1500	4 - 10 _(d)	Superior weathering resistance. Excellent chemical resistance and heat resistance.	ISO type gel coat base resin.
ETERSET 2731-2	ISO/NPG	1400 - 1600	10 - 14 _(d)	Superior weathering resistance. Excellent chemical resistance and heat resistance.	ISO type gel coat base resin.
ETERSET 2733	Ortho/NPG	700 - 1300	5 - 12 _(d)	High reactivity, excellent weathering resistance.	Base resin for gel coat manufacture.
ETERSET 2733-1	Ortho/NPG	6500 - 7500	6 - 9 _(d)	High reactivity, excellent weathering resistance.	Base resin for gel coat manufacture.
ETERSET 2740-2LN	Ortho/NPG	4500 - 5500	17 - 23 _(d)	High impact strength, excellent weathering resistance.	Gel coats for sanitary ware, cooling tower, chair, bath-tub, tank etc.
ETERSET 2740-2LNW	Ortho/NPG	4500 - 5500	17 - 23 _(d)	High impact strength, excellent weathering resistance.	Gel coats for sanitary ware, cooling tower, chair, bath-tub, tank etc.

(a) Time to Gel: 1% MEKP(55%)

(d) Time to Gel: 0.5% Co(6%) + 1% MEKP(55%) @ 25°C

• COLOR PASTE / DYE

Item Name	Form	Color
TONER 101	Paste	White
TONER 102	Paste	White
TONER 900	Paste	Black

10 BUTTON

Item Name	Type	Viscosity(cps) (25°C)	tg(min.) (30°C)(c)	Properties / Features	Applications
ETERSET 2110	Ortho	1500 - 2500	5 - 10	Resilient, low reactivity and low shrinkage.	Can be added into rigid resin (e.g. ETERSET 2446) to further enhance elasticity and impact strength.
ETERSET 2422	ISO	800 - 1600	2 - 5	Rigid, medium reactivity and high gloss.	Shirt button with centrifugal molding, recommended for thinner sheet.
ETERSET 2426 Series	Ortho	800 - 4000	2 - 5	Excellent dyeing properties.	Chalk and thicker button shirt button.
ETERSET 2430	Ortho	800 - 1600	2 - 5	High gloss, rigid.	Chalk and shirt button.
ETERSET 2433	Ortho	800 - 1600	2 - 5	Flexible, resistance to crack and craze.	Rod button.
ETERSET 2440-3	Ortho	800 - 1600	2 - 5	Rigid, medium reactivity, high gloss.	Shirt and chalk button, molded button.
ETERSET 2440A-S	Ortho	800 - 1600	2 - 5	Rigid, medium reactivity, high gloss and brightness.	Shirt and chalk button, molded button.
ETERSET 2446 Series	Ortho	800 - 2500	2 - 10	Rigid, medium reactivity and high gloss.	Shirt and chalk button, molded button.
ETERSET 2446-H	Ortho	800 - 2500	2 - 10	Rigid, medium reactivity, high gloss and resistance to steam.	Shirt and chalk button, molded button.
ETERSET 2475 Series	ISO	800 - 3000	5 - 10	Medium reactivity, high gloss, resistance to crack and craze.	High impact button.
ETERSET 2492A	Ortho	800 - 2500	2 - 10	Rigid, medium reactivity and high gloss.	SM Free
ETERSET 2426T-2	Ortho	800 - 1600	3 - 15	Good pattern fixation.	Rod button.
ETERSET 2446T	Ortho	80,000 - 120,000	3 - 15	Good pattern fixation.	Rod button additive.

(c) Time to Gel : 0.5% PT-121 + 1% MEKP (55%)(PT-121 is Eternal's promoter)

• PEARL ESSENCE

Item Name	Form	Color	Properties	Applications
P-HG 65	Paste	White	Containing 65% Lead Carbonate	Pearl Button
P-HG 35	Paste	Red/Green/Yellow/Black	Containing 35% Lead Carbonate	Pearl Button
BIFLAIR 88	Paste	White	Lead and Phthalate free	Pearl Button
UPFMT0000	Paste	White	Lead and Phthalate free	Pearl Button

• COLOR PASTE / DYE

Item Name	Form	Color	Properties	Applications
JC-3003S B	Paste	Black	Lead and Phthalate free	Button
JC-1194S W	Paste	White	Lead and Phthalate free	Button

11 SYNTHETIC MARBLE

Item Name	Type	Viscosity(cps) (25°C)	tg(min.) (25°C)	Features	Applications
ETERSET 2166	Ortho	1600 - 2000	3 - 5 _(e)	Exhibits good adhesion to marble, stone, polyester, and metal substrates	Binder for highly filled knifing fillers and stoppers for marble, stone and adhesives.
ETERSET 2226-1	Ortho	450 - 550	7 - 10 _(d)	High filler loading, low shrinkage, high strength	Block (Breton)
ETERSET 2426P Series	Ortho	1800 - 3000	13 - 30 _(l)	High filler loading, high strength	Marble
ETERSET 2447 Series	Ortho	400 - 800	6 - 8 _(m)	High strength and excellent wet out ability	Slab (Breton)
ETERSET 2467-2	Ortho	800 - 1200	6 - 8 _(m)	High strength and excellent wet out ability	Slab (Chinese facility)
ETERSET 2738A	ISO/NPG	1000 - 2000	5 - 15 _(c)	Good chemical and heat resistance.	Solid surface.
ETERSET 2738AM-E	ISO/NPG	400 - 800	15 - 25 _(n)	Good chemical and heat resistance, acrylic modified	Solid surface.
ETERSET 2738AM-L2	ISO/NPG	400 - 800	10 - 20 _(d)	Good chemical and heat resistance, acrylic modified	Granite

(c) Time to Gel : 0.5% PT-121 + 1% MEKP (55%)(PT-121 is Eternal's promoter)

(d) Time to gel : 0.5% cobat (6%) + 1% MEKP (55%)@25°C

(e) Time to gel : 2%BPO (50%), 25°C

(l) Time to gel : 1.25% MEKP (55%)@25°C

(m) Time to gel : 0.5% cobat (1%) + 2.5% TBPB @ 80°C

(n) Time to gel : 0.5% cobat (1%) + 1% MEKP (55%)@25°C

12 PUTTY

Item Name	Viscosity(cps) (25°C)	Cure System	tg(min.)	Features	Applications
ETERSET 2316	500 - 800	BPO	4 - 8 _(e)	Flexible, good adhesion, good stability.	Automotive body filler, heavy vehicle putty, patching and sealing compound.
ETERSET 2318	450 - 750	BPO	4 - 7 _(e)	Flexible, good adhesion, good stability.	Automotive body filler, heavy vehicle putty, patching and sealing compound.
ETERSET 2319	450 - 750	BPO	4 - 8 _(e)	Semi-hard, air-drying and good sanding properties.	Automotive body filler, heavy vehicle putty, patching and sealing compound.
ETERSET 2320-3	550 - 750	BPO	5 - 7 _(e)	Hard, air-drying and good sanding properties	Automotive body filler, heavy vehicle putty, patching and sealing compound.
ETERSET 2332-1	400 - 700	BPO	4 - 7 _(j)	Flexible, good adhesion, good stability.	Automotive body filler, heavy vehicle putty, patching and sealing compound.
ETERSET 2327M-2	400 - 700	Co/MEKP	20 - 25 _(#)	Fast tack-free, excellent adhesion. Good sanding properties.	Vehicle repair putty, FRP mold, heavy vehicle putty ; Machine tool putty.
ETERSET 2325	300 - 400	Co/MEKP	20 - 30 _(#)	Fast tack-free, excellent adhesion, high filler loading	Vehicle repair putty, FRP mold, heavy vehicle putty ; Machine tool putty. Machine tool putty.
ETERSET 2328	500 - 600	Co/MEKP	20 - 30 _(#)	Flexible, good adhesion, good stability.	Vehicle repair putty, FRP mold, heavy vehicle putty ; Machine tool putty. Machine tool putty.
ETERSET 2360P	1500 - 2000	BPO	40 - 60 _(r)	Non-Styrene type, low odor and VOC, flexible, good adhesion.	Vehicle repair putty, FRP mold, heavy vehicle putty ; Machine tool putty. Machine tool putty.
ETERSET 2365P	1500 - 2000	BPO	2 - 6 _(e)	Non-Styrene type, low odor and VOC, good sanding properties	Automotive body filler, heavy vehicle putty, patching and sealing compound.

(e) Time to Gel : 2% BPO(50%) @ 25°C

(j) Time to Gel : 4% BPO(50%) @ 30°C

(#) Time to Gel : 0.8% Co(6%) + 2% MEKP(55%) @ 25°C

(r) Time to Gel : 4% BPO(50%) @25°C

13 RESIN CONCRETE

Item Name	Type	Viscosity(cps) (25°C)	tg(min.) (25°C)	Features	Applications
ETERSET 2210	Ortho	550 - 1550	5 - 11 _(d)	Superior mechanical properties, high filler loading, high heat-distortion temperature.	Artificial garden landscape, escape canal, waste-pipe, electric cable trough, human hole.
ETERSET 2510P	Ortho	430 - 500	11.5 - 14.5 _(d)	Superior mechanical properties, high filler loading, high heat-distortion temperature.	Artificial garden landscape, escape canal, waste-pipe, electric cable trough, human hole.
ETERSET 2516P	ISO	250 - 300	12 - 15 _(a)	High filler loading, good shine.	Top-coating of pipes.
ETERSET 2518-1	Ortho	360 - 440	11 - 17 _(d)	Fast curing, high filler loading, high heat-distortion temperature.	Artificial garden landscape, escape canal, waste-pipe, electric cable trough, human hole.
ETERSET 2519P	Ortho	500 - 600	10 - 13 _(a)	High filler loading, high heat-distortion temperature.	Artificial garden landscape, escape canal, waste-pipe, electric cable trough, human hole.

(a) Time to Gel : 1% MEKP(55%)

(d) Time to Gel : 0.5% Co(6%) + 1% MEKP(55%)

● LOW SHRINKAGE ADDITIVE FOR RESIN CONCRETE

Item Name	Chemistry	Viscosity(cps) (25°C)	Features
ETERSET 2006-1	PS	3500-4000	<ul style="list-style-type: none"> • Excellent shrinkage control and dimensional stability • Non-acid function group and can take as MgO carrier in B-side • Permits higher filler loading • Excellent pigmentation • Excellent surface smoothness and gloss
ETERSET 2006-2	PS	1400-1800	

14 CURED-IN-PLACE PIPES (CIPP)

Item Name	Type	Viscosity(cps) (25°C)	tg(min.) (25°C)*	Features	Applications
ETERSET 2651-VC	VER/Styrene free	2800 - 3200	UV cure	Thickenable, styrene-free, good glass fiber impregnation properties, high toughness, exhibits excellent chemical resistance.	<ul style="list-style-type: none"> • UV curable resin, styrene-free • General purpose for Cured In Place Pipe (CIPP) • Repair of sewage systems • Mechanical processing or vacuum forming methods
ETERSET 2858T-S	ISO	1400 - 1600	18 - 21 _(o)	High thixotropy, good glass fiber impregnation properties, high toughness, exhibits well chemical resistance. Pass 50 year Creep test (JIS K7116).	<ul style="list-style-type: none"> • Heat curable resin • General purpose for Cured In Place Pipe (CIPP) • Repair of sewage systems • Mechanical processing or vacuum forming methods
ETERSET 2858T-60	ISO/VER	1800 - 2200	18 - 21 _(o)	High thixotropy, good glass fiber impregnation properties, high toughness, exhibits excellent chemical resistance. Pass 50 year Creep test (JIS K7116).	<ul style="list-style-type: none"> • Heat curable resin • General purpose for Cured In Place Pipe (CIPP) • Repair of sewage systems • Mechanical processing or vacuum forming methods
ETERSET 2858-VC	ISO/VER	350 - 450	UV cure	Thickenable, good glass fiber impregnation properties, high toughness, exhibits well chemical resistance.	<ul style="list-style-type: none"> • UV curable resin • General purpose for Cured In Place Pipe (CIPP) • Repair of sewage systems • Mechanical processing or vacuum forming methods
ETERSET 2955-VC	VER	450 - 550	UV cure	Thickenable, good glass fiber impregnation properties, high toughness, exhibits excellent chemical resistance.	<ul style="list-style-type: none"> • UV curable resin • General purpose for Cured In Place Pipe (CIPP) • Repair of sewage systems • Mechanical processing or vacuum forming methods

(o) 50g resins, 2%BCHPC @ 50°C

15 FIRE RETARDANT

Process Method	Item Name	Type	LOI	Fire Retardant Characteristics										Application & Remarks	
				UL-94	ASTM E162	ASTM E662	BS 6853:1999 B.2	BS 476 Part7	BS 6853:1999	GB 8624	ASTM E84 /E108	DIN 5510-2	NF F16-101		EN 45545-2
Hand Lay up	ETERSET 2504TI	Additive	33	V0											Non-halogenated and low smoke density.
	ETERSET 2504TF-M	Additional Additive	40					1							Building materialsNon-halogenated and low smoke density.
	ETERSET 2504TF-A	Additional Additive	50					1		A/A					Building materialsNon-halogenated and low smoke density.
	ETERSET 2960TF-A	Additional Additive	52						B1	A					Building materialsNon-halogenated and low smoke density.
	ETERSET 2910PTI	Additive	35		≤ 35	Ds < 100 D4 < 200	R < 1	1			S4/ST2/SR2	M1/F1			Railway interior. Non-halogenated and low smoke density. Suitable for railway interior.
	ETERSET 2910PTI-LSH	Additive	35									M1/F1	HL2		Railway interior. Non-halogenated and low smoke density.
	ETERSET 2910PTI-LS	Additive	42										HL2		Railway interior. Excellent size stability. Non-halogenated, low smoke density,

15 FIRE RETARDANT

Process Method	Item Name	Type	LOI	Fire Retardant Characteristics										Application & Remarks		
				UL-94	ASTM E162	ASTM E662	BS 6853:1999 B.2	BS 476 Part7	BS 6853:1999	GB 8624	ASTM E84 /E108	DIN 5510-2	NF F16-101		EN 45545-2	IMO 1006
Hand Lay up	ETERSET 2901PTI	Additive	51				R<1	1	1a	B1				HL3		Subway interior. High LOI, non-halogenated.
	ETERSET 2929	Reactive/ Additional Additive	28	V0				1/2/3					M1/F1	Passed/ Grade 1		Suitable for continuous lamination, flat and corrugated sheet.
	ETERSET 2929-J	Additional Additive	25							B/s2/d0	A/A					Suitable for building material (with 150phr ATH added).
SMC/ BMC	ETERSET 2927	Reactive	28	V0												High impact strength, fast cure, superior wet-out, and great mechanical properties. Reach to UL94V-0.
SCRIMP/ RTM	ETERSET 2911PF	Additive	33									S4/ST2/SR2				Railway interior. Non-halogenated. Suitable for VIP + RTM
Pultrusion	ETERSET 2929AF	Reactive	33	V0												Railway interior. halogenated, reaches to UL94V-0

16 ACCESSORIES

Item	Appearance	Description
ACCELERATOR		
PT-24	Purple liquid	Promoter for G.P. type resin. Cobalt Octoate (Co.6%).
PT-14	Purple liquid	Promoter for casting resin.
PT-121	Purple liquid	Promoter for button resin.
PT-100	Purple liquid	Promoter for clear casting resin.
WAX		
PSW-30	Yellow/ Brownish/ Transparent	Wax for button resin.
THIXOTROPIC ADDITIVE		
2085	White powder	For rheological control

B. EPOXY SYSTEM

Item	Mix ratio	Mix viscosity (cps@25°C)	Gel time (min@ 25°C)	Tg (DSC°C)	Applications
High Performance Matrix					
ER1105/EH1330	100:30	200 - 300	50 - 70	80 - 90	Good wetting property with several fabric, Room temperature curing, Very low viscosity after mixed
ER1105/EH1777	100:30	500 - 600	300 - 360	85 - 95	Long operating time, Good wetting property with several fabric,
ER1355/EH1232	100:25	400 - 500	60 - 80	120 - 130	High temperature resistance up to 130°C, Good wetting property with several fabric, low shrinkage
ER1565/EH1015	100:35	2000 - 3000	30 - 35	85 - 95	Good wetting property with several fabric, Fast post curing at 80 °C
ER1565/EH1012	100:35	1000 - 2000	25 - 30	85 - 95	Good wetting property with several fabric, Fast post curing at 80 °C
UV Resistant					
ER1107/EH1310	100:25	250 - 350	15 - 25	80 - 90	UV resistant for composite life long ,Good wetting property with several fabric, Short gel time
ER1107/EH1325	100:25	250 - 350	45 - 55	85 - 95	UV resistant for composite life long, Good wetting property with several fabric, Room temperature curing
ER1125/EH1336	100:20	250 - 350	80 - 100	120 - 130	Long operating time, Good wetting property with several fabric, High temperature resistance up to 130°C
ER1455/EH3110	100:50	500 - 700	20 - 30	50 - 60	UV resistant for composite life long ,Good wetting property with several fabric
ER1455/EH3115	100:50	700 - 900	30 - 40	50 - 60	UV resistant for composite life long ,Good wetting property with several fabric

B. EPOXY SYSTEM

Item	Mix ratio	Mix viscosity (cps@25°C)	Gel time (min@25°C)	Tg (DSC°C)	Applications
Tooling					
ER1105/EH1250	100:30	500 - 700	140 - 170	90 - 100	Dimensional stability, Good wetting property with several fabric, Room temperature curing
ER1205/EH1464	100:25	650 - 750	200 - 250	120 - 130	Dimensional stability, Good wetting property with several fabric, Thermal stability
ER2525/EH1242	100:15	1900 - 2400	100V130	150 - 160	Dimensional stability, Good wetting property with several fabric, good mechanical properties
ER5075/EH5208	100:120	600 - 800	10 - 20(90°C)	210 - 230	Dimensional stability, Good wetting property with several fabric, Heat deflection temperature of composite(final product) up to 250 °C
Surfaces repair					
ER0680/EH1308	100:50	9000 - 12000	10 - 20	100 - 120	Suitable for pinholes diameter >1mm , Good wetting properties, UV resistant for composite life long
ER1060/EH1311	100:50	150 - 250	15 - 25	100 - 120	Suitable for pinholes diameter <1mm used, Good wetting properties, UV resistant for composite life long
Casting					
ER1081/EH1434	100:50	200 - 300	70 - 100	50 - 60	UV resistant, Not brittle
ER1081/EH1462	100:50	400 - 500	200 - 250	50 - 60	UV resistant, Not brittle
Fire Retardant					
ER3200/EH2650/2057	100:22:130	1500 - 2500	120 - 200	90 - 100	Non-halogenated, reaches to UL94V-0.
Filament Winding					
ER0670/EH5146	100:100	500 - 700	130 - 160(90°C)	130 - 140	Good wetting property with several fabric, Long pot life at room temperature and demonstrates excellent UV resistant properties

C. ADHESIVE

1 UP/VER ADHESIVE

Item Name	Type	Viscosity(cps) (25°C)	tg(min.) (25°C)*	Lap shear strength (Mpa)***	Features	Applications
ETERSET 2958PT-60	Vinyl Ester	800,000 - 1,200,000	55 - 70*	20 - 22	1. High thixotropy 2. High strength 3. Low exotherm 4. General purpose	It is commonly used for bonding metal / FRP or FRP/FRP together, and which perform high lap shear strength. It provides well chemical resistance and high heat deformation temperature.
ETERSET 2968PT-689	Elastomer - modified Vinyl Ester	800,000 - 1,200,000	50 - 70*	12 - 15	1. High thixotropy 2. High elongation 3. Superior toughness 4. Well impact strength 5. Well adhesion between metal, FRP, wood, core materials 6. Low exotherm 7. DNV approval	It is commonly used for bonding metal/ FRP or FRP/FRP together with bond-line thickness up to 3mm. It provides well toughness and impact strength on joint. It is easy to apply with no run on vertical surfaces.
ETERSET 2976PT	Isophthalic	500,000 - 900,000	50 - 70**	10 - 15	1. Isophthalic 2. Lightweight 3. Low exotherm 4. FRP, wood, foam core materials	It is commonly used for chamfer filling, and applying before 2nd hand-lay-up. Colour indicator describe the state of cure.
ETERSET 2977PT	Isophthalic	1,500,000 - 2,500,000	25 - 35****	16 - 18	1. Isophthalic 2. Reinforced with 3 mm glass fibres 3. General purpose 4. High viscosity 5. High thixotropy	It is a pre-accelerated ISO type UP bonding paste, which contains glass fiber and a blue indicator of catalyse. The paste is suitable for fixing FRP hull mold and for bonding among FRP, wood and gel coat. Colour indicator describe the state of cure.
ETERSET 2978PT	Isophthalic	35,000 - 65,000	50 - 70*****	-	1. Isophthalic 2. Ultra-lightweight 3. Low exotherm 4. DNV approval 5. Low viscosity 6. Thixotropy	It is a pre-promoted Iso type UP bonding paste for core material. The paste is suitable for bonding with FRP and PVC foam, and well ability for gap filling. Colour indicator describe the state of cure.

* 100g resin / 2% MEKPO / 25°C

** 50g resin / 1% MEKPO / 25°C

*** ASTM D1002 / 304 stainless steel / 25°C

**** 100g resin / 1.5% MEKPO / 25°C

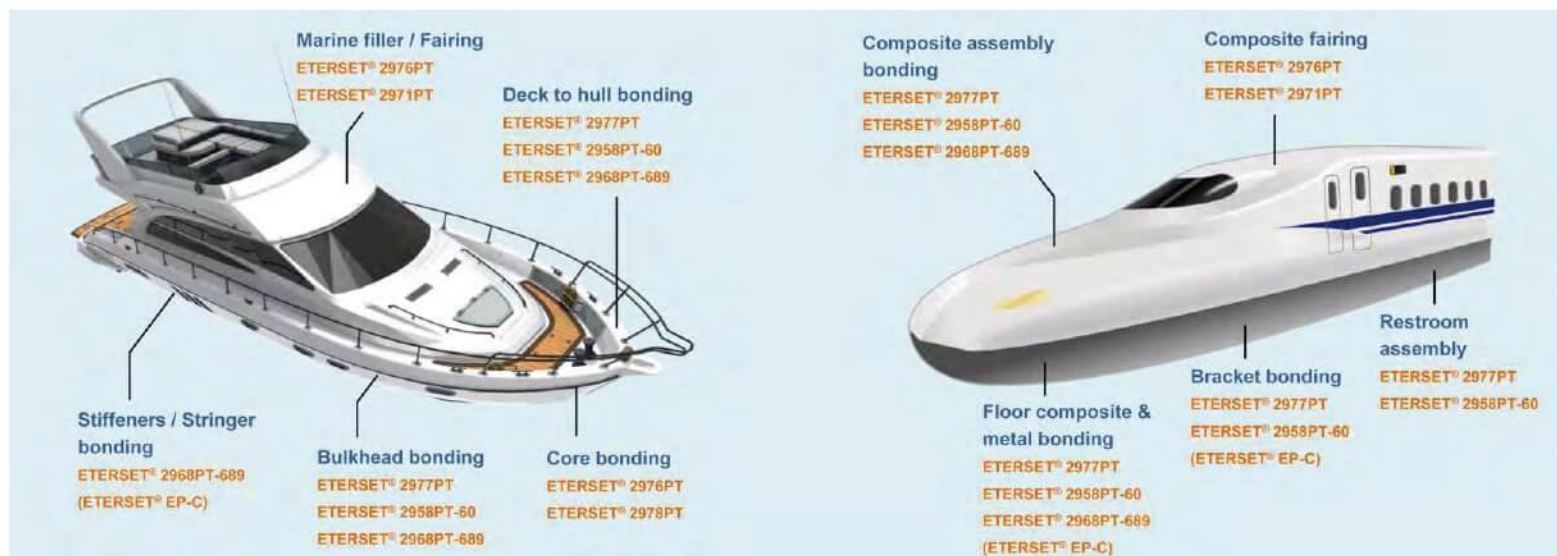
***** 70g resin / 1% MEKPO / 30°C

2 MARINE FILLER

Item Name	Type	Viscosity(cps) (25°C)	tg(min.) (25°C)	Features	Applications
ETERSET 2971PT	Vinyl Eser	150,000 - 300,000	20 - 28*	<ol style="list-style-type: none"> 1. Light weight/ Ultra low density 2. High thixotropic 3. Low shrinkage 4. Excellent adhesion 5. Good air-drying 6. Liable to spread and sand 	ETERSET 2971PT and 2973PT are pre-promoted vinyl ester filler/putty for marine manufacture, and suitable for the surface repair of fiber-reinforced polymer composite materials and hull. The formation have outstanding operation after filler/putty is completely cured.
ETERSET 2973PT	Vinyl Eser	150,000 - 250,000	15 - 25**	<ol style="list-style-type: none"> 1. High thixotropic 2. Low shrinkage 3. Excellent adhesion 4. Good air-drying 5. Liable to spread and sand 	

* 70g resin / 2% BPO(50%) / 25°C

** 100g resin / 2% BPO(50%) / 25°C



3 HIGH PERFORMANCE ADHESIVE (ACRYLIC)

Item Name	Type	Viscosity(cps) (25°C)	tg(min.) (25°C)	Lap shear strength (Mpa)*	Features	Applications
ETERBOND AC901	2K - Acrylic	70,000 - 100,000	5 - 8***	18 - 20	<ol style="list-style-type: none"> 1. General purpose with 10 : 1 (v/v) mixing ratio 2. (Fast) curing at room temperature 3. Excellent shear and peel strength 4. High Toughness and impact strength 5. Superior fatigue and environmental resistance 6. Gap filling and sag resistant properties 7. Bonding most metals without need of a primer 8. Bonding plastics and composites with minimal surface treatment 	AC901 / AC902 / AC903 are room-temperature-curable, two-part acrylic structural adhesives with 10:1 (v/v) mixing ratio. These toughened adhesives have excellent shear, peel, and impact strength, superior fatigue and environmental resistance along with good durability. This product can be used for structurally bonding metals without a primer and also suitable for bonding engineering plastics and composite assemblies with minimal to no surface preparation.
ETERBOND AC902	2K - Acrylic	70,000 - 100,000	10 - 14***	18 - 20		
ETERBOND AC903	2K - Acrylic	70,000 - 100,000	15 - 20***	18 - 20		

* ASTM D1002 / 304 stainless steel / 25°C

** 50g (Mix ratio = 100 : 100) / 25°C

*** 55g (Mix ratio = 10 : 1) / 25°C

4 HIGH PERFORMANCE ADHESIVE (EPOXY)

Item Name	Type	Viscosity(cps) (25°C)	tg(min.) (25°C)	Lap shear strength (Mpa)*	Features	Applications
ETERBOND EP104	2K - Epoxy	70,000 - 300,000	15 - 20**	20 - 25	1. Curing at room temperature 2. Excellent lap shear strength 3. Approaching developed handling strength quickly 4. Great adhesion between concrete and rubber 5. General purpose	EP104 and EP125 are room temperature curing, thixotropic, two-part epoxy structural adhesives with 1:1 mixing ratio. The epoxy structural adhesives have high lap shear strength, toughness, and are suitable for bonding various metals (i.e., steel, aluminium, copper), FRP, engineering thermoplastics, and among others. The EP series also have good adhesion to rubber.
ETERBOND EP125	2K - Epoxy	90,000 - 700,000	80 - 120**	20 - 25		
ETERBOND EP012	1K - Epoxy	Paste	2-3****	30-35*****	1. Heat activated 2. One component 3. Excellent lap shear strength and T-peel strength 4. Thermal shock resistance and wet/heat aging resistance 5. Fatigue resistance 6. Gap filling properties 7. ISO 4210 approval	EP012, EP012P and EP040H are high temperature curing, thixotropic, one-part epoxy structural adhesives. The epoxy structural adhesives have the characteristics of anti-sagging, high bonding strength at high temperature and long operating time at room temperature. It can be used for bonding between common substrates and various materials, such as stainless steel, aluminum, FRP, etc.
ETERBOND EP012P	1K - Epoxy	Paste	2-3****	30-35*****		
ETERBOND EP040H	1K - Epoxy	Paste	20-25****	30-35*****		

* ASTM D1002 / 304 stainless steel / 25°C

****1g, 150°C

*****165°C, 45 mins

*****180°C, 30 mins

5 STONE GLUE

Item Name	Type	Viscosity(cps) (25°C)	tg(min.) (25°C)	Features	Applications
ETERBOND AC502	Acrylic	10,000 - 20,000	5 - 10	<ol style="list-style-type: none"> 1. Fast curing and operating time can be adjusted according to the proportion of hardener 2. High transparency, and possess good color stability to the sun light, and high temperature resistance and water resistance. 3. High temperature molding for indoor countertop design 	ETERBOND AC502 is an acrylate glue used for acrylic solid surface bonding or repairing. According to the color of acrylic solid surface, color paste or stone powder can be added to adjust the color of the glue.
ETERBOND UP702	Orthophthalic	200,000 - 400,000	5 - 10	<ol style="list-style-type: none"> 1. Fast curing and operating time can be adjusted according to the proportion of hardener 2. With high thixotropic so as to be suitable for non-horizontal or vertical surface construction 3. Customers can add color paste or stone powder according to the color of natural stone to achieve seamless effect 	ETERBOND UP702 is a prepromoted unsaturated polyester stone glue with high thixotropic. It has no fluidity under static conditions. However, fluidity presents under high shear force. It is suitable for non-horizontal or vertical surface construction and can be hardened at room temperature. It is mainly used for natural stone bonding, repairing or seamless processing. According to the color of natural stone, color paste or stone powder can be added to adjust to the color of the glue.

* 100g resin / 2% BPO / 25°C

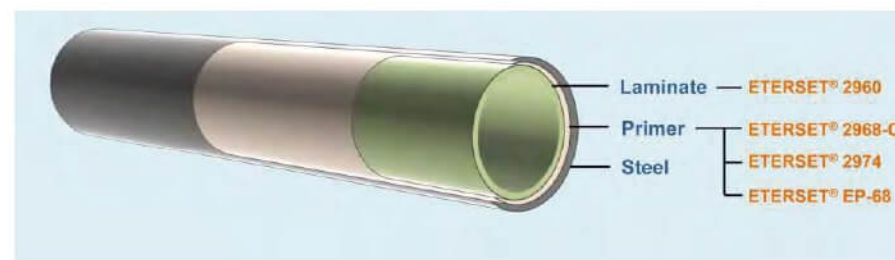
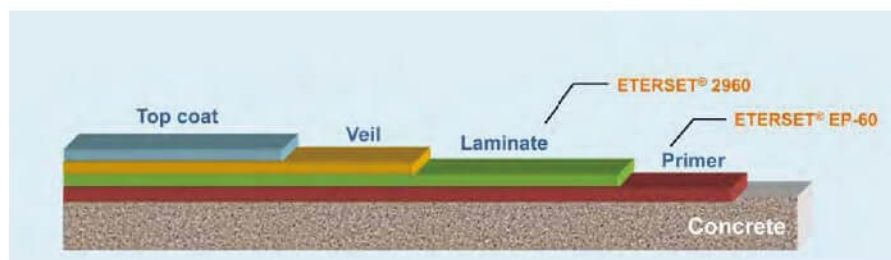
6 ADHESIVE PRIMER

Item Name	Type	Viscosity(cps) (25°C)	Working Time (min.)(25°C)	Heat Deformation Temperature(°C)	Features	Coverage Area (Kg/m ²)
ETERSET EP-60	Modified Vinyl Ester	150 - 250	15 - 25*	115	1. Prepromoted 2. Increase adhesion strength on concrete 3. Excellent chemical and heat resistance	0.3
ETERSET EP-68	Elastomer - modified Vinyl Ester	350 - 450	25 - 35**	80	1. Premixed 2. Increase adhesion strength on metal and concrete 3. Great toughness and elongation 4. Excellent chemical resistance	0.4
ETERSET 2974	Modified Vinyl Ester	200 - 300	20 - 25***	115	1. Increase adhesion strength on metal 2. Excellent chemical and heat resistance	0.3
ETERSET EP-C	Modified alcohol	3	NA	NA	1. Conditioner 2. Improve long term bond durability for adhering aluminium and stainless steel assemblies 3. Produce a bond which can resist long term exposure to salt water 4. Can be applied without hardener so as to provide convenient way to use	0.1

* 100g resin / 1.2% MEKPO / 25°C

** 100g resin / 2% MEKPO/ 25°C

*** 100g resin / 1.5% MEKPO, 0.5% Co-6% / 25°C





ETERNAL MATERIALS

■ **ETERNAL MATERIALS CO., LTD.**

578 Chienkung Road, Kaohsiung 807, Taiwan, R.O.C.

Tel: +886-7-3838181 Fax: +886-7-3858622

<http://www.eternal-group.com>

■ **ETERNAL SYNTHETIC RESINS (CHANGSHU) CO., LTD.**

15 Xinggang Road, Riverside Industrial Park Changshu, Jiangsu 215536, China

<http://www.eternal-up.com>

Tel: +86-512-5286-006 Fax: +86-512-5286-0007

■ **Eternal Materials (Guangdong) Co., Ltd.**

No.9523 Zhuhai Road, Nanshui Town, Zhuhai, Guangdong 519050, China

Tel: +86-756-726-5566 Fax: +86-756-398-5577

■ **Eternal Materials (Malaysia) Sdn.Bhd.**

PTD 5044, Jalan Rumbia 2, Tanjung Langsat Industrial Estate,

Mukim Sungai Tiram, 81700 Pasir Gudang Johor, Malaysia

TEL: +607-277 8600 FAX: +607-277 8609/+607-277 8610

Sales Contact

Tel: +886-7-3838181 ext. 602

E-mail: berlin_chou@eternal-group.com