



PRODUCT GUIDE

Composite Resins and Gelcoats

Unsaturated Polyester Resins

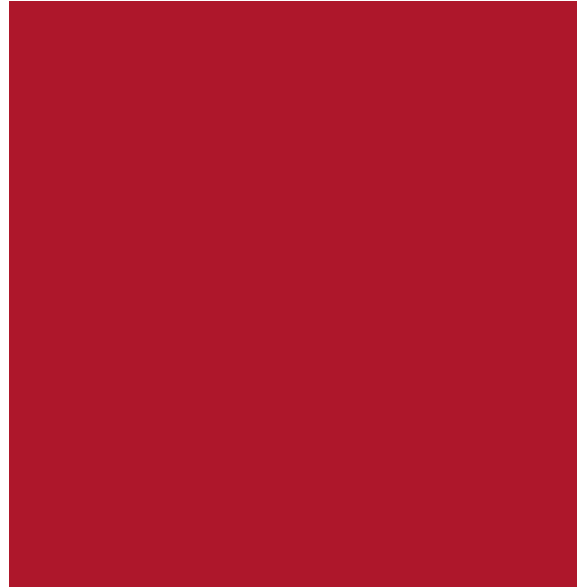
Gelcoats

Vinyl Ester Resins

Pigment Pastes

Auxiliary Products

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We are leading the coatings and composite industry with yesterday's experience and tomorrow's technology!

Erco history began in 1982...



Modern Production Facilities

Istanbul Tuzla 8,000 m²
Kocaeli Gebkim 49,000 m²



30,000 Tons/Year
Production Capacity



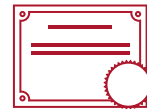
R&D Center
June 2017



Export to more than
30 countries



Full Automation



Sustainable Quality



About Us

Erco is leading supplier of polyester and vinyl ester resins, gelcoats and specialty materials used for the composites industry. With strong capabilities in manufacturing and science, we deliver quality, service and reliability for today, while creating innovative solutions for tomorrow.

Established in 1982, Ece Boya Kimya is one of the leading companies in Türkiye in the coating and resin manufacturing with its well know brand Erco. The company's strategy is based on rigorous R&D studies to develop new technologies providing innovative solutions by anticipating the needs and demands of the industry and being a global brand in its sector.

Ece Boya Kimya produces resins, gelcoats and pigment pastes for the composite industry and provides high quality products to different segments of composite industry for long years.

Driven by a strategy to strengthen our brand image with our strong expert staff and two production

facilities covering a total area of 8,000 m² in Tuzla and 49,000 m² modern production facility in Gebkim, Ece Boya Kimya has emerged as a reliable global brand.

Believing in the power of science and technology, Ece Boya Kimya maintains its position as a reliable and sustainable supplier thanks to its quality systems and product certifications, manufacturing consistent and quality products in its high-tech production facilities.

Our mission is to serve the customers the products they want with excellent service. As a result, reinvesting the reasonable profits made by our sales and supplying you the best you can get.



Unsaturated Polyester Resins

Erco is one of the well-known unsaturated polyester resin brands in composites industry and presents a wide product range, which enables reliable and long-term solutions for the customers. We develop our resins and derivatives in collaboration with our customers in various industries and provide the optimum solution for them.

Our experienced technical team is dedicated to improving the products by new approaches and solutions to meet market's future needs. After almost 40 years, our brand represents high-quality and reliability in composites raw materials. We deliver our innovative solutions to more than 30 countries in various types of applications in different sectors.

Supporting our customers is a company philosophy in Ece Boya Kimya. We establish long term collaborations with our customers, and we support them in every phase of their processes.






Hand Lay up/Spray Up

Hand lay-up and spray-up resins are very common, and they are widely used in glass fiber industry.

Erco has a wide range of resins with superior wetting features, which has different physical and chemical properties.

We always offer easy application with the help of optimum gel time and other characteristics. These resins are used in many products like boats, cabins, trucks and construction elements.

Erco FRP type resins are used in countries with different climate conditions and appreciated with its high quality, high resistance to exterior conditions and easy application.

Product	Description	Chemical Nature	Viscosity (cP)	El. at Br. (%)	HDT (ISO 75-B) (°C)	Remarks
E07	General purpose	Ortho	450	2,75	74	 Lloyd's Register
E07 FR	Flame retardant, halogen-free, filled system	Ortho	Thix	3,15		 Lloyd's Register
E07 TA	Preaccelerated, thixotropic	Ortho	Thix	2,85	74	 Lloyd's Register
E08	General purpose, high transparency	Ortho	475	4,65		
E11	General purpose	Ortho	425	4,40	60	
E12	General purpose, good impact resistance	DCPD	475			
E14	High-quality	Ortho	400			
E44	Chemical resistant, weatherability	ISO/NPG	1050	2,65	91	
E50	DCPD modified low styrene emission	DCPD	1450	4,65		
E50 /STMA	High-strength PS foam resin	DCPD	900	5,50	72	
E50 FR	Flame retardant filled	DCPD	700	5,25		
E60	High HDT hand lay-up resin	Ortho	650	2,25	75	Rigid
E74	Chemical resistant, lower water absorption	Iso	900	5,60	102	



Casting Type

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Casting resins are used to produce many different products which usually do not include glass fiber reinforcement inside.

They are mostly combined with various fillers to produce end-products such as kitchen countertops, sinks, souvenirs and decorative items. With a high filler-loading capacity and user-friendly solutions, Erco casting type resins are widely preferred.

Products produced with Erco casting type resins can have very high chemical resistance and durability. We also introduce different key-features to almost all resins.

Product	Description	Chemical Nature	Viscosity (cP)	El. at Br. (%)	HDT (ISO 75-B) (°C)	Remarks
E02	Highly rigid	Ortho	1000	2,20	82	
E06	General purpose	Ortho	550	8,40	55	
E06 FR	Flame retardant, filled system	Ortho	1000	9,50		UL94 V0
E06 W	High mechanical performance, high filler loading	Ortho	500			
E06 SW	Low viscosity, higher filler loading	Ortho	300	8,25	54	
E09	Economical	Ortho	600	3,30		
E15	High performance, dimensional stability	Ortho	850	5,45	85	
E22	Crystal clear application	Ortho	700	11,45		
E43	Low reactivity	ISO/NPG	1400	3,95		
E43 SW	High performance, dimensional stability	ISO/NPG	1000	3,55		
E44	Scratch-resistant, weatherability	ISO/NPG	1000	4,20		
E46	High-resistant stain-free	ISO/NPG	1050	3,90		
E47	High-resistant	ISO/NPG	1400	4,55		
E206	High-strength general purpose	Ortho	650	3,35	75	
F02	VOC-free	Ortho	1050	9,50	49	
F04	VOC-free	ISO/NPG	1050			



SMC/BMC

These types of resins are unsaturated polyester resins that are specially designed for high temperature molding.

They feature high level of reactivity thanks to the high number of unsaturated groups, which results with high exothermic reaction temperature.

Final products made with LSA (low shrink additive) and LPA (low profile additive) combination have very smooth and good appearance. Being the most preferred brand in Türkiye in SMC/BMC industry, Erco always presents innovative and reliable solutions to its customers. SMC/BMC molding method is used widely from automotive to conduit boxes, from street lighting to heavy duty parts. It is possible to reduce/remove total volumetric shrinkage or get expansion with LPA resins.

Product	Description	Chemical Nature	Viscosity (cP)	El. at Br. (%)	HDT (ISO 75-B) (°C)	Remarks
E90	Highly reactive SMC	Ortho	1100	6,95	110	
E91	Medium reactivity	Ortho	1100	8,75	105	
E92	Chemical resistant	Iso	1750	11,50	141	
E93	Chemical resistant, high weatherability	ISO/NPG	1750	8,40	144	
E94	General purpose	Ortho	1100	5,75		
E94/3 PET	PET-recycled	Ortho	850			Recycled product
E96	Virgin maleic	Maleic	3600	9,05	125	
E98	General purpose, fast reaction	Ortho	1750	3,64		
E99	Low reactivity BMC	Ortho	1500	10,75		Eco
E670	Low Profile Additive (Saturated polyester)		200	4,55		For class A high quality surfaces
D01	Low Profile Additive (PMMA)		1000			
D13	Low Profile Additive (PVAc)		1950			
D21	Low Profile Additive (PS)					



Button Type

Polyester resins used for production of buttons should be transparent, flexible and processable.

It is very important to be able to process the shape and polish afterwards. They usually have low to medium reactivity.

Their technical properties are set for maximum performance and durability even with pigment pastes. There are 2 main different casting methods to produce buttons, centrifugal and rod casting. ERCO offers high performance solutions for both groups to different producers in many countries.

Product	Description	Chemical Nature	Viscosity (cP)	El. at Br. (%)	HDT (ISO 75-B) (°C)	Remarks
E22	Centrifugal casting	Ortho	725	11,45		
E24 T	Rod casting	Ortho	Thix	11,90		
E26	Class A clear centrifugal casting	Ortho	725	14,35	52,6	
E27	Flexible, clear resin	Ortho	290	11,50		



Putty Type

Putty/adhesive type polyester resins are commonly used as the main raw material in car refinish putties and marble adhesive.

Other putties such as wood putty and adhesives are also produced from these resins. They are formulated together with fillers and additives for intensity and consistency. Some of the resins in this group are DCPD (dicyclopentadiene) modified. With high amounts of DCPD in formulation, filler loading capacity and mechanical resistance values are very high. In addition, styrene emission and consumption is lower. Hardness can be manipulated with use of multiple resins.

Putty/adhesive type polyester resins mostly contain polymeric amines as accelerator and it is recommended to use BPO initiator for maximum performance.

Product	Description	Chemical Nature	Viscosity (cP)	El. at Br. (%)	HDT (ISO 75-B) (°C)	Remarks
E30	Multi-purpose, putty	DCPD	680	7,60		
E31	Multi-purpose, adhesive	Ortho	700	4,35	90	
E33	Low reactivity	Ortho	850			
E34	Marble adhesive, rigid	Ortho	550	5,45	90	
E35	Marble adhesive	Ortho	1750	2,85		
E36	General purpose, rigid	DCPD	525	5,30	82,6	
E37	General purpose, flexible	DCPD	550	18,30		
E38	Marble adhesive, flexible	Ortho	800	9,80		
F03	VOC-Free	DCPD	750			




RTM

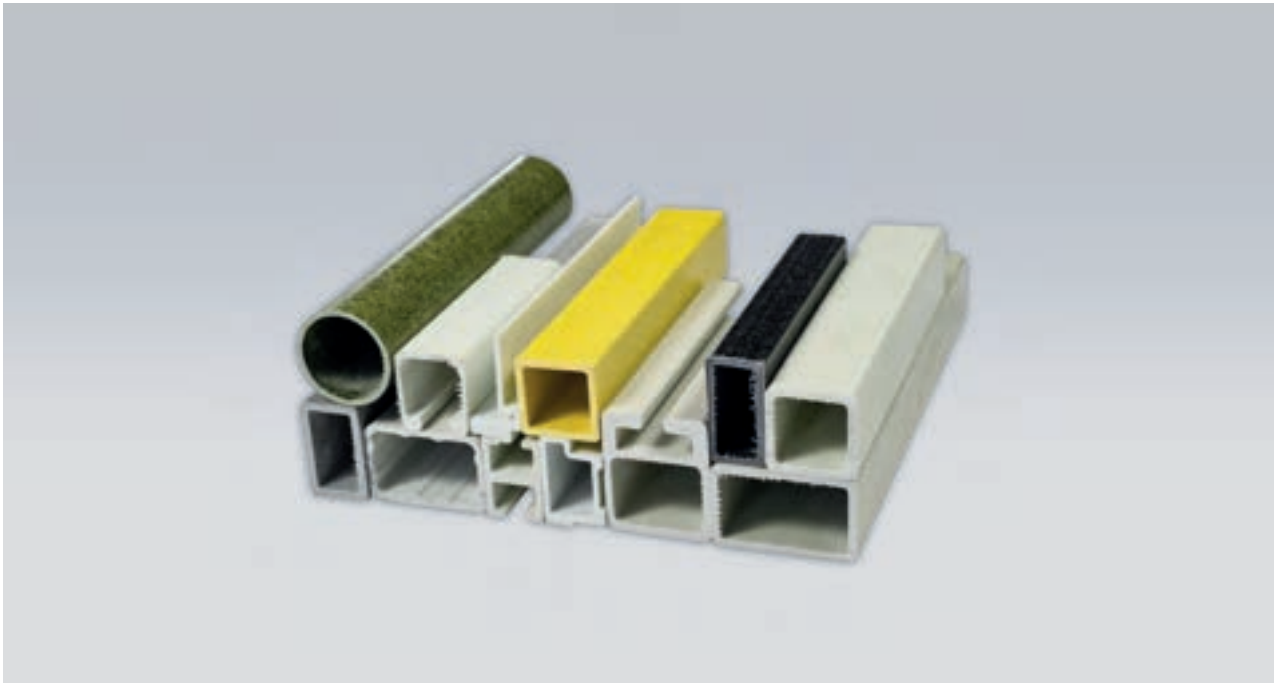
RTM (Resin Transfer Molding) is basically transferring and curing the UPR inside a glass fiber laid closed mold.

RTM type resins have high mechanical properties after hardening even though they have low viscosity. VARTM (Vacuum Assisted Resin Transfer Molding) is preferred while the vacuum enables the resin to impregnate the glass fiber inside the mold in a balanced and fast way.

Use of closed mold systems is growing every day since it saves time and labor during production when compared to hand lay-up or spray-up applications. RTM production method eliminates human mistakes, reduces styrene emissions and results as better and consistent composite parts.

We produce custom-made resins for different RTM production lines.

Product	Description	Chemical Nature	Viscosity (cP)	El. at Br. (%)	HDT (ISO 75-B) (°C)	Remarks
E50	High-impact resistance	DCPD	150	4,65		
E51	Flexible	DCPD	200	6,55		
E53	DCPD modified, high reactivity low viscosity	DCPD	210	5,05		
E54	General Purpose, rigid	Ortho	150	3,10	65	
E55	Rigid, dimensional stability	Ortho	150	2,70	69	
E57	General Purpose, medium rigidity	Ortho	200	4,65		Eco
E58	Chemical resistant, rigid	Iso	200	2,90		
E59	Chemical resistant	Iso	220	3,45	90	Premium, 



Pultrusion

Pultrusion is continuous production method, where glass fiber woven and braids are pulled and impregnated with resin/filler inside a bath and the mixture cures while passing through a heat source.

Produced profiles have constant cross-section and high density of glass fiber. These resins have medium viscosity and cures fast with the help of high reactivity and special initiators.

Filler and glass fiber amounts are high in this method, so wetting properties are very important have excellent bonding. These resins are mostly used in production of structural profiles, slatted floors and poles.

Product	Description	Chemical Nature	Viscosity (cP)	El. at Br. (%)	HDT (ISO 75-B) (°C)	Remarks
E63	High quality, dimensional stability	Iso	1100	4,50	90	
E63 FR	Flame Retardant halogen-free, filled system	Iso	1600	5,60	100	
E64	Continuous lamination	Ortho	1300	5,00	79	
E66	Continuous lamination	Ortho	240	5,10	78	
E67	General purpose	Iso	3000	12,10	97	
E67 SW	Low viscosity, higher filler loading	Iso	1000	11,15	78	
E67 PET	PET-recycled	PET	1000	14,50		Recycled product
E68 SW	General purpose, higher filler loading	Ortho	450	8,65		



Other Resins

You can find other resins used in composites and other industries.

These resins are results of projects, where we specially design upon customers requests. They are suitable for serial production. From various coatings such as gelcoat and varnish, to pigment paste, a lot of polyester-based semi-finished goods can be produced with these resins.

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Product	Description	Chemical Nature	Viscosity (cP)	El. at Br. (%)
E03	Filament Winding	Ortho	225	3,30
E04TA	General purpose tooling resin	Ortho	Thix	3,20
E17	General purpose tooling resin	Ortho	400	4,65
E18	Acrylic Backing resin	Ortho	600	
E19	Acrylic Backing resin	Ortho	600	
E21	Flexible resin, additive	Ortho	325	63,65
E41	Ortho gelcoat base resin	Ortho	900	7,85
E45	ISO/NPG gelcoat base resin	ISO/NPG	650	3,04
E46/2	In mould resin	ISO/NPG	850	
E49	Medium reactivity ISO/NPG gelcoat base resin, economic	ISO/NPG	1250	6,65
E69	Coatings primer resin	Ortho	700	
E72	ISO gelcoat base resin, rigid, lower water absorption	Iso	700	2,75
E73	ISO gelcoat base resin	Iso	900	3,20
E76	ISO gelcoat base resin, higher reactivity	Iso		2,90
E82	Allylic modified fast air drying	Ortho	1650	10,80
E88	Wax-free fast air drying	DCPD	7000	2,70
E421	Flexible, impact resistant resin	ISO/NPG	475	6,2
E651	Pigment paste resin		2000	
E652	Low viscosity pigment paste resin		275	
E658	Pigment paste resin (higher pigment loading)			
V60	Bonding Paste, pre-accelerated, thix.	VE	90000	



Gelcoats

Erco presents new generation of gelcoats with long-lasting ultra-high UV, chemical and physical resistance. Having developed upon inquiries and demands of customers and tested in the new application center, these gelcoats offer almost infinite life for composite parts.

In addition to protection of the material against aggressive chemicals and impacts, gelcoats should also provide aesthetic appearance. Erco gelcoats are tested for impact & scratch resistance, exposed to various chemicals. Overall appearance, gloss and color stability are checked with accelerated tests, which guarantee superior results for composite manufacturers.

We offer a wide gelcoat range from general purpose gelcoats to high performance molding gelcoats.

Glossy and mat topcoats are available together with VOC-free and many other modifications.

For your quick or small needs, we offer Coatint gelcoat tinting system, where customers can get small sized orders within few minutes!

All our gelcoats are offered either transparent or pre-colored. Any colored gelcoat is produced with RAL, Pantone or other national/special codes. We can also work on any color sample both in Coatint and industrial production.

Color repeatability is very important, that's why we promise color stability from batch to batch.



Antistatic Gelcoat

A new antistatic gelcoat series have been developed by Erco, which offers wide range of colors except white and super-bright, while having the advantage of high-performance gelcoat with excellent aesthetics and chemical resistance.

Our products have been produced as children’s slides, stadium and subway seats, molds and tanks. New innovative products are upcoming! It is mostly preferred in places with high explosion and fire risk, also where electrical conductivity without any use of metal parts.

Product	Description	Chemical Nature	Remarks
G18-60	Spray	ISO/NPG Acrylic	Topcoat
G19-60	Brush	ISO/NPG Acrylic	Topcoat
G26	Spray	ISO/NPG Acrylic	Gelcoat
G27	Brush	ISO/NPG Acrylic	Gelcoat



Orthophthalic Gelcoat

Orthophthalic gelcoats are used in general purpose applications. They are preferred for indoor products, where chemical resistance comes in the second place. They are more cost-saving than other gelcoats. Gloss and color saturation levels are high.

Isophthalic Gelcoat

Isophthalic based gelcoats are used in the production of composites to be used outdoors where chemical resistance matters. They will retain gloss and color outdoors for many years.

Thanks to high physical resistance, impacts and heavy loads on composites are no issue. They have great resistance to water and not aggressive chemicals and can withstand exposure to sunlight in atmospheric conditions in long term.

NPG/Isophthalic Gelcoat

Isophthalic and NPG (Neopentyl glycol) based gelcoats are used for high chemical resistance where other orthophthalic and isophthalic gelcoats are insufficient. Being preferred in many industries, this product is resistant to harsh climatic conditions and various aggressive chemicals.

Acrylic modification present in the resin medium in addition to isophthalic-NPG polymer backbone maximizes the chemical resistance. UV resistance is at maximum level. They feature perfect gloss and surface smoothness.

These gelcoats are preferred where the composite parts are designed to work in constant contact with aggressive chemicals, saline water and high UV exposure.

Product	Description	Chemical Nature	Viscosity (cP)
G10	Brush	Iso	7500
G11	Spray	Iso	2500
G20	Brush	ISO-NPG Acrylic	7000
G21	Spray	ISO-NPG Acrylic	2200
G23	New generation brush	ISO-NPG Acrylic	6500
G24	New generation spray	ISO-NPG Acrylic	1100
G30	Brush	Ortho	7000
G31	Spray	Ortho	2500
G50	Sandable, Brush	DCPD	2000
G51	Sandable, Spray	DCPD	7500
G80	VOC free	ISO-NPG	6750



Glossy & Mat Topcoat

One of the key products developed for the composites industry is the Glossy Topcoat. A topcoat is applied after the composite part is manufactured in contrary with the conventional gelcoats, which are applied first in the mold. Glossy ones let you achieve perfect glossy surfaces rather than mat surfaces, which are obtained with standard topcoat gelcoats.

They are used mostly for repair work. Panels coated with glossy topcoats have great shiny surfaces as much as 90-100 gloss. Topcoats are very important for big composite parts such as water slides, yachts, and pipes for finish painting, repairing and maintenance.

Glossy topcoat brings easy solutions for composite part manufacturers and is used more every day; while mat topcoat is another fast finishing option for composites industry.



VOC Free Gelcoat

Sometimes it's an issue to work with chemicals with emissions. You may not have necessary ventilation in your workshop, or you may just want to make a quick repair in your home. This is where VOC-free alternatives come in the picture and offer similar experience without any smell or hazard.

VOC-free gelcoats have no smell like conventional ones. Thus, no air circulation is required while working with them. Not only during storage but also curing, the room do not need any ventilation.

They do not contain any chemical which have flash point below 200 °C. That's why they are not hazardous, there is no risk of catching fire upon sparks or other fire resources.

Tooling Gelcoat

Erco offers few different tooling (mold making) gelcoats, which are based on vinyl ester and polyester resins. Since vinyl ester is the most durable resin and for mold surfaces it is the best when it comes to price and quality, tooling gelcoats based on vinyl ester are mostly preferred. Polyester based ones are used for small and short life-cycle molds, they will be more cost-effective.

Tooling gelcoats are applied like general purpose ones, while having outstanding properties. VE-based gelcoats feature very high chemical and thermal resistance since they are made from Bisphenol-A based vinyl ester resins. Surfaces should be very carefully handled during the production of molds.

Detailed information about tool making is available upon request.

Product	Description	Chemical Nature	Viscosity (cP)	HDT (ISO 75-B) (°C)
G10-60	Spray, glossy, topcoat	DCPD	9500	
G11-60	Spray, matte, topcoat	Iso	2500	
G21-60	Spray, matte, topcoat	ISO-NPG	2500	
G28	General purpose, spray	ISO-NPG	2700	
G60	Brush, glossy, topcoat	Ortho	7000	
G61	Spray, glossy, topcoat	Ortho	2000	
G70	High quality, brush	BPA VE	8000	105
G71	High quality, spray	BPA VE	1200	105
G83	High quality, brush	Novolac VE	8000	
G84	High quality, spray	Novolac VE	1200	



Vinyl Ester Resins

Vinyl Ester Resins feature a different composition compared to unsaturated polyester resins. They contain styrene just like polyester resins and can be cured with Cobalt / MEK-P or other peroxides.

VE resins are resistant to many aggressive chemicals thanks to the polymer backbone and functional groups they contain. Distinguished by their mechanical values too, vinyl ester resins are compatible with both glass fiber and carbon fiber. Their heat resistance is also at maximum level. Their HDT (Heat Deflection Temperature) values are higher compared to polyester resins, can go up to 150 °C (ISO 75 A). They are mostly used in marine, wind turbine wing production and automotive sectors. They can also be used in barrier coat in pool and waterslides production. Production of advanced structural panels in aviation industry is also made by VE resins.

Please contact our sales department for more information about vinyl ester products and requests for special applications.

Product	Description	Chemical Nature	Viscosity (cP)	El. at Br. (%)	HDT (ISO 75-B) (°C)
V75	Standard BPA epoxy based vinyl ester resin	BPA VE	450	4,10	107,6
V75 TA	Thixotropic, preaccelerated	BPA VE	Thix	4,05	
V75 HTA	Highly thixotropic, preaccelerated	BPA VE	Thix	4,05	
V76	Amine accelerated BPA epoxy vinyl ester resin	BPA VE	450	4,20	
V77	DCPD modified vinyl ester resin	DCPD VE	200	6,55	
V77 HTA	Highly thixotropic, preaccelerated	DCPD VE	700	6,20	
V78	Urethane modified BPA epoxy vinyl ester resin	Urethane-BPA VE		9,50	
V85	Standard epoxy novolac based vinyl ester resin	Novolac VE	350	3,80	149
V90	Epoxy based vinyl ester resin for SMC	Epoxy VE	1050	2,60	



Pigment Pastes

Polyester pigment pastes are used to color any composite resin and gelcoat. They contain polyester resin and pigments, specially designed for maximum compatibility with other products. These pastes are produced by grinding powder pigments with polyester resin featuring special formulations. There is no monomer inside, so their shelf life is quite long when compared with unsaturated polyester resins.

We suggest use of pigment pastes in the range of 1-20%, you can add pigment pastes in resins or gelcoats as much as you desire, depending on the color tone and saturation. These pastes are compatible with some other resins systems like polyurethanes.

Pigment paste may cause certain changes in physical attributes of the resin. Shortly, more paste usually means less physical resistance. Moreover, consider the level of accelerator and catalyst to prevent undesired color differences. All factors should be considered while coloring the resin systems.

Please contact our sales department for more information and colors. We provide a very wide range of polyester pigment pastes for different applications like pultrusion, SMC/BMC, casting, etc.

Product	Description
C30-00-XXXX*	Standard pigment paste
C35-00-XXXX*	Low viscosity pigment paste
C3X-14-XXXX*	UV resistant pigment paste

*: XXXX RAL colours



Auxiliary Products

This group includes accelerators, initiators, solvents, monomers and cleaning products used in polyester products and used for the final properties of polyester products.

Each product has different ratios of use. It is recommended to use them in the ratios used.



Accelerators

These chemicals are used to control gelling and curing times of polyester resins and derivatives. They are mostly metal salts, while some of them are amines or other molecules. What they have in common is that they support free radical polymerization by speeding up the electron transfer.

The most widely used accelerator is cobalt octoate. They work in harmony with MEK-P (Methyl ethyl ketone peroxide), giving the best combination in term of performance, compatibility, and price. Accelerators, which are used for adjusting the pot life of the applied material, should be used carefully according to working temperature. Working at low temperatures require more accelerator than the amount you need at room temperature.

Concentration of the accelerator used is also important. Most widely used one is 6% cobalt octoate in the market. Some applications like automated casting may require less cobalt concentration to fine tune the pot like of the casting mixture.

Some systems may not need accelerators. Most SMC/BMC applications are done at high temperatures (around 140 °C), it's not necessary to accelerate the reaction. Not using accelerator with MEK-P at room temperature; the reaction may take days to finalize. We also offer few kinds of high-quality transparent accelerators for translucent casting and other applications.

Please contact our sales department for various accelerators in different concentrations and combinations.

Cobalt Accelerators	Cobalt Content (%)
Y00-50	0,5
Y01-00	1,0
Y03-00	3,0
Y06-00	6,0

Transparent Accelerators	Type
Y01-18	Slow
Y02-18	Fast
Y03-18	Very fast

Initiators

Unsaturated polyester resins have polymer backbones with unsaturated C=C groups and double bond containing monomers. These groups react in between each other; thus, the resin gets cured. This reaction is called Free Radical Polymerization, where free radicals are generated and attack the C=C groups in the polymer backbone and monomers, which start a chain reaction. Chemicals that are needed to start this reaction are called initiators. They are also known as catalysts, hardeners, starters or even medicine.

Most widely used initiator is MEK-P (Methyl ethyl ketone peroxide). It is mostly used together with cobalt accelerators. We can name next 3 popular peroxides as AAP, TBPB and BPO.

Reaction starts immediately with the addition of the initiator. Time passed until the point, when the mixture is no longer liquid and starts taking the shape of the mold, is called gel time.

The mixture will then heat up aggressively and reach to highest recorded temperature, it's the end of the curing time. The temperature observed is called exothermic temperature. Please contact our sales department for our other starters. We have tested and distribute NOROX initiators produced by United Initiators in Germany.

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Cleaning Products

"Polyester Cleaner" is used for cleaning the tools that are used in factories and workshops where polyester resin is used. These products dissolve resin and derivatives easily, so unwanted residues can be removed by means of cloth or similar cleaning products.

It is used to solve the polyester resin that hasn't hardened and that is in liquid form thanks to the special raw materials. Since chemical resistance of cured resins is much higher than the uncured ones, using conventional cleaning products are not recommended, since they will not yield good result.



Monomers

These chemicals are used to dilute the resin, to decrease their viscosity, only when it's necessary. Polyester resins already contain around 30-50% of monomer inside. They are used to bring the resin used in material production to the suitable viscosity interval. Most widely used monomer is styrene, while other monomers such as methyl methacrylate (MMA) and vinyl toluene (VT) are used for different purposes.

We do not recommend adding monomer to any ready-to-use product, since it will affect the overall performance and curing characteristics of the material. It is well known that excessively used styrene has negative effects on the product. Please contact our technical department for your inquiries about maximum styrene amount to be used.

Please contact our sales department for styrene and other monomers which might be needed for special applications.

Supporting Materials

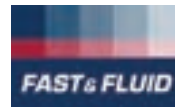
Reinforcing materials are the other vital components of composites. They increase the mechanical properties of the composite produced. Amount, type, and design of the reinforcement is very important to create strong and durable parts.

Glass fiber is the leading supporting material in the world. It is a material consisting of numerous extremely fine fibers of glass. One of the main materials in GRP (Glass Reinforced Plastic/Polyester) is glass fiber, while the other one is unsaturated polyester resin.

We supply different kinds of glass fiber to our customers upon their requests. In composites industry there are other reinforcement materials used with unsaturated polyester resins and vinyl ester resins. Carbon fiber is the most popular one used. Basalt fiber is also used for some special applications. Natural fibers are getting popular each day, as they are derived from feedstock and have much less carbon footprint.

Auxiliary Products

Solution Code	Description
D02	Polyester defoamer
D04	Polymerization promoter
D05	Paraffin wax solution
D06	Polyester brightener solutions
D07	Gel time retarder
D11	Amine accelerator
D15	Putty stabilizer
D16	Anti-scratch additive
D17	Shelf life extender
D18	UV resistance enhancer solution
D19	Top coat additive solution
D21	Dispersing solution



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 +90 (262) 644 45 44

 +90 (262) 644 45 40

Ercoturkiye 

Ece Boya Kimya 

Ercoc Ece Boya Kimya 

www.eceboya.com 