| 2023

Pouya Shimi Avizhe

UP Resins and Organic Peroxides

About Us

Pouya Shimi Avizhe Company is a specialized producer of organic peroxides and unsaturated polyester resins in three types: ortho, iso, and pure maleic. With more than 20 years of experience in the production of unsaturated polyester resins, this company has recently expanded its product portfolio and started producing a variety of organic peroxides, including methyl ethyl ketone peroxide. The company has two production units located in Eshtehard and Shiraz, with an annual production capacity of 20,000 tons of unsaturated polyester resin.

The research and development unit of Pouya Shimi Avizhe Company is based in Sharif University of Technology. They collaborate with several professors from the university to develop new products and improve the quality of their existing products.

Organic Peroxides

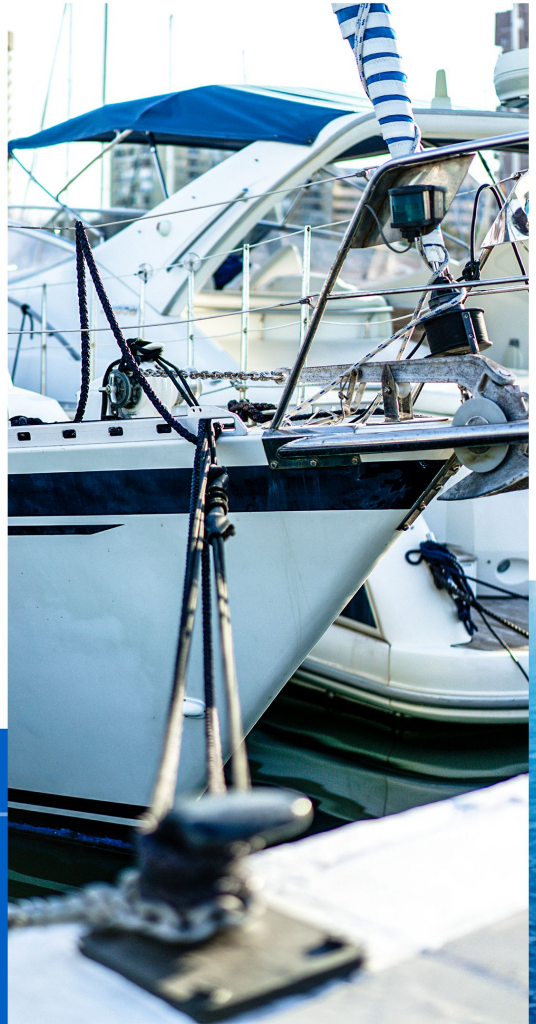
The products of Pouya Shimi Avizhe company in the category of organic peroxides include essential hardners for various applications, featuring:

- Methyl ethyl ketone peroxide (MEK-P)

- Tert-Butyl peroxybenzoate (TBPB)

- Benzoyl peroxide (BPO)

These meticulously crafted organic peroxides are designed to meet industry standards, ensuring optimal performance in processes such as resin curing and hardening systems.



Organic peroxides are pivotal as hardeners for polyester resins, contributing to the crucial curing process. Among these, methyl ethyl ketone peroxide (MEK-P) is particularly noteworthy, showcasing its efficacy at room temperature for initiating cross-binding reactions within the polyester resin matrix. Tert-butyl peroxybenzoate (TBPB) stands out in applications involving heat, such as in pultrusion processes and the production of Sheet Molding Compound (SMC) and Bulk Molding Compound (BMC). Its activation at elevated temperatures makes it instrumental in achieving controlled curing. Benzoyl peroxide (BPO), active at 80 °C, is another key component for hardening systems. It finds widespread use in polyester resin applications where an amine accelerator is employed at room temperature, ensuring a robust and tailored curing profile.

Artificial Stone

The resins produced by Pouya Shimi Avizhe company are suitable for the production of various types of artificial stones such as Quartz, Corian, and other engineered stones. These resins have exceptional chemical resistance against acidic and alkaline solutions. In addition to their good filler incorporation and adhesion, they exhibit transparency and color stability against UV light. They also have suitable heat resistance to prevent cracking during and after production.

Product Code	Resin Type	Viscosity (mPa.s)	Solid Percentage (%)	Color (Gardner)
PA-220	ISO	300 - 400	63 - 66	< 2
PA-60A	ORTHO	500 - 600	62 - 65	< 2
PA-140	ORTHO	300 - 400	62 - 65	< 2

- Strong resistance to acidic and alkaline solutions
- UV-resistant color stability
- Proper transparency
- High wettability

Polymer Concrete

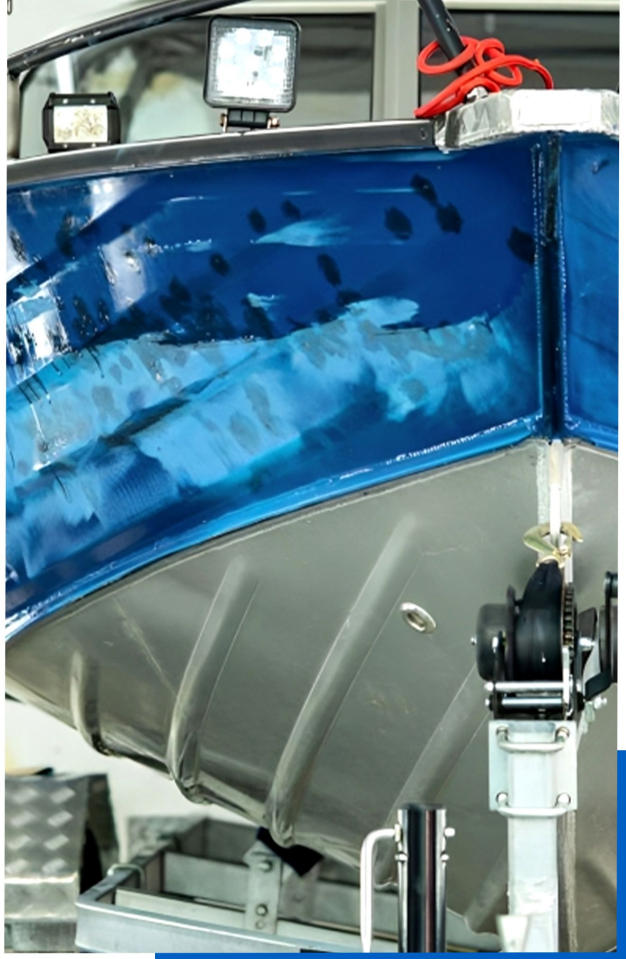
Due to the applications of polymer concrete in corrosive environments, the resin produced by Pouya Shimi Avizhe is characterized by its high adhesive properties, compressive and flexural strength, and good resistance to chemical corrosion, moisture, and temperature changes. The reasonable price and desirable quality of these resins have made them among the best-selling products of Pouya Shimi Avizhe.

Product Code	Resin Type	Viscosity (mPa.s)	Solid Percentage (%)	Color (Gardner)
PA-70B	ORTHO	500-600	62-65	< 2

- Reasonably priced
- Strong adhesive characteristics
- Excellent chemical corrosion resistance
- Strong adhesive characteristics

Marine Applications

Water-resistant polyester resins are required in the marine sector because their products are utilized in water. The Pouya Shimi Avizhe company produces resins with appropriate chemical resistance and water penetration resistance, allowing flotation products to be used in salinized waters. These kinds of resins are reasonably priced and have strong tensile and flexural strength, high heat deflection temperature (HDT), good flexibility, and long-term sPAerior UV resistance.

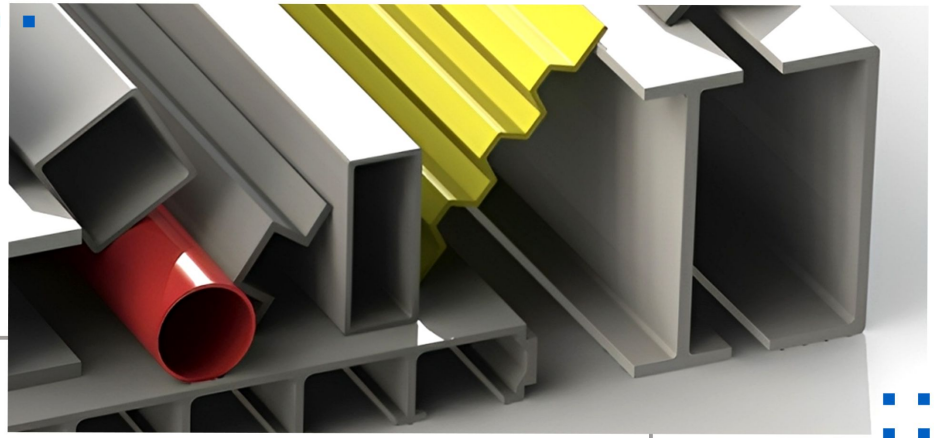


Product Code	Resin Type	Viscosity (mPa.s)	Solid Percentage (%)	Color (Gardner)
PA-250T	ISO	800-1000	62-65	< 3
PA-150T	ORTHO	700-1000	62-65	< 3
PA-75I	Terephthalic	600-750	62-66	< 2

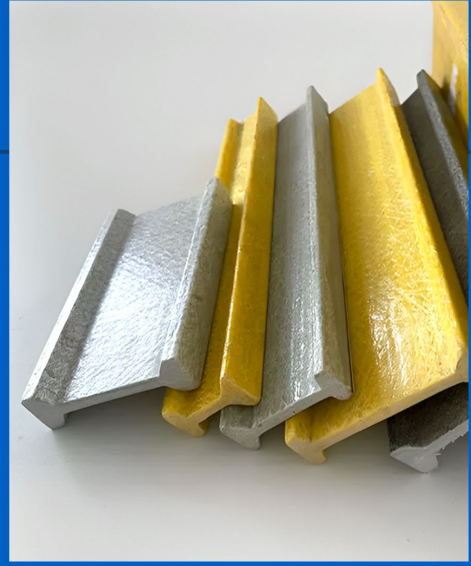
- Adequate chemical resistance
- Excellent water repellency
- UV-resistant color stability
- high HDT

Pultrusion Process

The resins that Pouya Shimi Avizhe company suggests for the pultrusion process have good wetting and adhesion capabilities along with a reasonably low viscosity. These resins are great for creating composites with outstanding strength-to-weight ratios because of their high strength-to-weight ratio. Furthermore, these resins have strong chemical resistance against corrosive conditions because they are used in humid and corrosive situations. They are frequently employed in the production of different fiberglass rods and profiles.



- High wettability
- Moderately low viscosity
- High strength-to-weight ratio
- Adequate chemical resistance



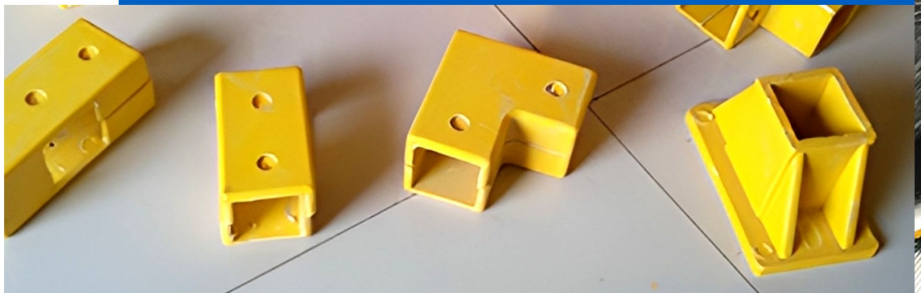
Product Code	Resin Type	Viscosity (mPa.s)	Solid Percentage (%)	Color (Gardner)
PA-220	ISO	300 - 400	63 - 66	< 2
PA-120	ORTHO	500 - 600	62 - 65	< 2
PA-300	ORTHO	300 - 400	63-66	< 2

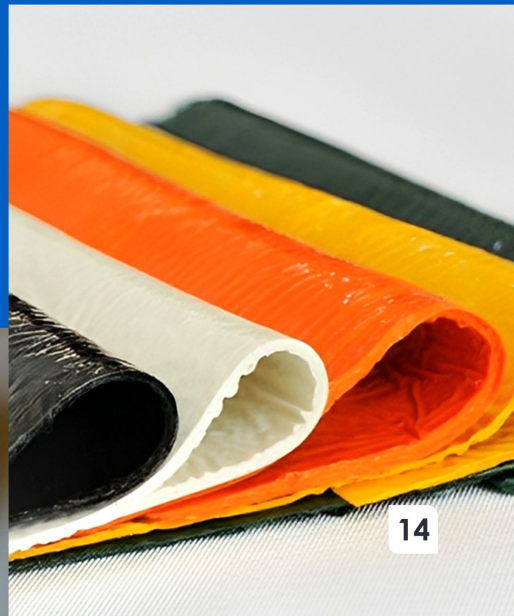
SMC/BMC Process

The resins recommended by Pouya Shimi Avizhe company have acceptable flowability, low shrinkage during the curing process, appropriate chemical resistance, and a reasonably high viscosity for use in the SMC/BMC method of product production. These characteristics make it possible to fill in molds' voids and sharp corners, which makes it easier to produce precise parts with intricate geometries and strong mechanical properties.

Product Code	Resin Type	Viscosity (mPa.s)	Solid Percentage (%)	Color (Gardner)
PAYA-60	ISO	900-1200	62-65	< 2
PAYA-63	ORTHO	900-1200	64-67	< 2
PAYA-65	Maleic	900-1200	64-68	< 2

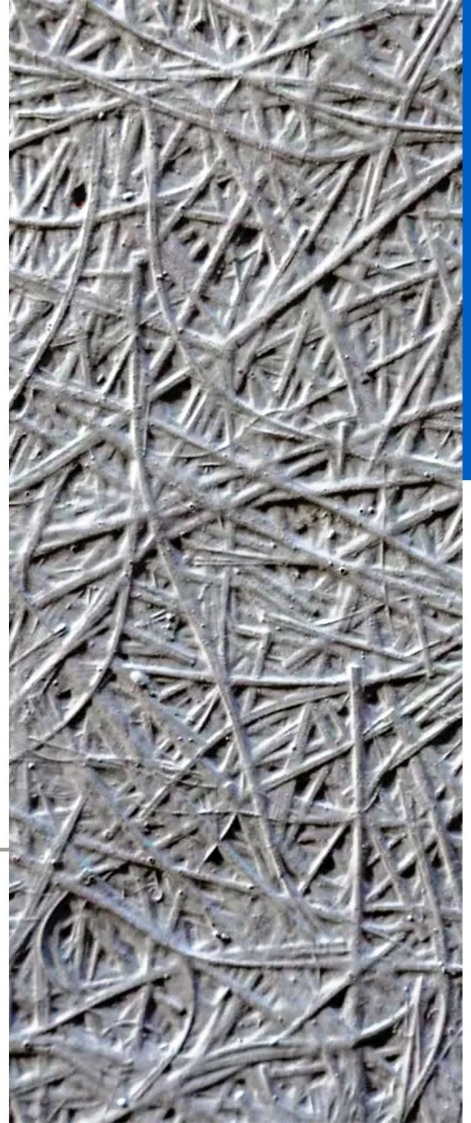
- Reasonable fluidity
- Minimal shrinkage during curing
- Moderately high viscosity
- Adequate chemical resistance





Cooling Tower

The resins that Pouya Shimi Avizhe company recommends for cooling tower manufacture are selected based on their ability to withstand outdoor conditions and constant exposure to chemicals and water. These resins show appropriate and durable resistance to UV radiation and corrosion. Furthermore, the resins employed prevent water from penetrating the structure, extending the product's usable life.



- Excellent UV resistance
- Adequate chemical resistance
- Excellent water repellency

Product Code	Resin Type	Viscosity (mPa.s)	Solid Percentage (%)	Color (Gardner)
PA-150T	ORTHO	700-1000	62-65	< 3
PA-120	ORTHO	500 - 600	62 - 65	< 2
PA-220	ISO	300 - 400	63-66	< 2

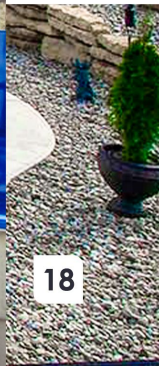
Prefabricated Pools

The exceptional resilience of Pouya Shimi Avizhe company's resins to chemicals and water makes them ideal for use in prefabricated pool buildings. This element makes sure that the structure of the pool doesn't deteriorate from long-term exposure to water, chlorine, or other disinfectants and that it stays watertight. The resin used in this application has a high compressive and flexural strength to prevent deformation and damage since precast swimming pools have water pressure.

Additionally, when prefabricated pools are placed in open areas, they are exposed to sunlight. As a result, the created resin structure's visual appeal and resistance to UV radiation are guaranteed by Pouya Shimi Avizhe company.

- Excellent UV resistance
- Adequate chemical resistance
- Excellent water repellency
- High strength-to-weight ratio

Product Code	Resin Type	Viscosity (mPa.s)	Solid Percentage (%)	Color (Gardner)
PA-220	ISO	300 - 400	63 - 66	< 2
PA-150T	ORTHO	700-1000	62 - 65	< 3
PA-120	ORTHO	500-600	62 - 65	< 2
PA-140	ORTHO	300-400	62-65	<2



Sink, Wash basins, Bathtub

The resins developed by Pouya Shimi Avizhe company to be used in the manufacturing of sinks, washbasins, and bathtubs are resistant to both water and cleaning agents since they come into contact with water and detergent substances. These resin varieties have been developed with the proper flexibility and transparency to allow for the production of items with different sizes.

Product Code	Resin Type	Viscosity (mPa.s)	Solid Percentage (%)	Color (Gardner)
PA-70B	ORTHO	500-600	62-65	< 2
PA-60A	ORTHO	500 - 600	62 - 65	< 2

- Adequate chemical resistance
- Proper transparency
- Excellent water repellency

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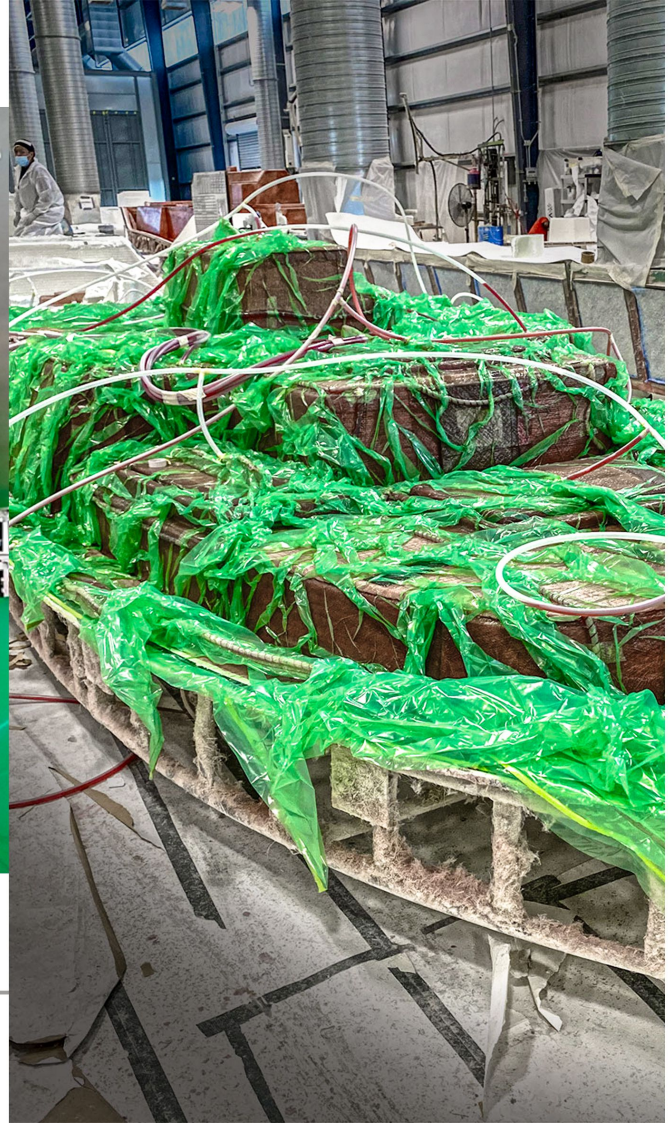
GRP Tanks and Pipes

The resins developed by Pouya Shimi Avizhe company for the construction of GRP (glass reinforced plastic) tanks and pipes have been specifically formulated to withstand exposure to acidic and alkaline chemical substances. Due to the application and construction method of GRP tanks and pipes, the recommended resins by Pouya Shimi Avizhe company have relatively low viscosity, a high strength-to-weight ratio, and a high HDT (heat deflection temperature) to ensure dimensional stability.

Product Code	Resin Type	Viscosity (mPa.s)	Solid Percentage (%)	Color (Gardner)
PA-95	ORTHO	250-350	62-64	< 2
PA-100	ISO	250-350	58-62	< 2
PA-120	ORTHO	500-600	62 - 65	< 2

- Strong resistance to acidic and alkaline solutions
- Moderately low viscosity
- High strength-to-weight ratio
- High HDT



RTM Process

The resins produced by Pouya Shimi Avizhe company for use in RTM industries for the production of composite parts are characterized by low viscosity, low shrinkage, good processability, and high mechanical properties. The relatively low viscosity of the resin allows for easier flow during the injection and better mixing with fibers. Additionally, this resin characteristic prevents the formation of voids or dry spots in the composite parts.
To achieve a faster production cycle, most of the recommended resins in this groPA have relatively short curing times.

Product Code	Resin Type	Viscosity (mPa.s)	Solid Percentage (%)	Color (Gardner)
PA-190	ORTHO	190-230	58-61	< 2

- Minimal shrinkage during curing
- Low viscosity
- Relatively short curing times.
- Proper transparency

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