






Pars Resin Kahkeshani Co.
The Phenomenon of Resin Manufacturing in Iran



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RESIN | CHEMICALS
Producer of Industrial Resins





about us :

Pars Resin Company, the leading producer of a wide variety of solvent-based alkyds, unsaturated polyesters, and paint driers, has been operating in Fars Province, Iran, since 2018. Pars Resin proudly produces 12,000 tons of products annually. While part of this production meets domestic demand, up to 80% of the company's capacity is exported to neighboring countries, the CIS, and regions as far as East Africa.

Pars Resin Company has succeeded in producing a diverse range of high-quality products and delivering them to target markets at the lowest cost, thanks to its well-equipped research and development and quality control laboratories staffed by experts. Another key strength of the company is its exceptional after-sales services. With the support of an advanced paint laboratory, in addition to supplying resins, the company provides customers with tailored paint formulations to ensure the best quality paints.

Currently, our factory is expanding rapidly across various sectors. Among the upcoming projects for the next year are the production of fast-drying paints, instant thinner, and the packaging of solvents and glycerin, which will be put into operation in a special economic

Pars Resin Products

Alkyd Resins

Long Oil {Codes 401-402-403-404-405-406}

Medium Oli {Codes 501-502-503-504}

Short Oil {Codes 601-602-603-604}

Driers

Cobalt

Calcium

Lead

Zirconium

Unsaturated Polyesters

General

GPR



The Applications of Long Oil

- Production of gloss architectural paints
- Coating for wood and metal
- Production of stainless paints
- Production of decorative paints

The Properties of Long Oil

- High flexibility and low hardness
- Weather and yellowing resistant
- Adhesion and lack of brittleness
- Good brush retention
- Gloss

Long Oil

They contain between 55-75% oil and are typically produced using vegetable fatty acids, such as soy or sunflower. These resins take longer to dry and are soluble in aliphatic solvents.

Long Oil Alkyd

| Product | Oil | Oil Length | Solvent | Solid % | Acid Value (mgrKOH/gr) | Viscosity (Stoke) | Color (Gardner) | uses |
|--------------|--------------------|------------|--------------|---------|------------------------|-------------------|-----------------|--|
| Long Oil 400 | Soybean Fatty Acid | 57 | white spirit | 70% | 6-10 | 800-1400 | 2 | High gloss paint enamels, Varnishes |
| Long Oil 401 | Soybean Fatty Acid | 57 | white spirit | 70% | 6-10 | 600-1100 | 3 | Primers, Under coats, Architectural finishes, Industrial enamels |
| Long Oil 402 | Soybean Fatty Acid | 57 | white spirit | 70% | 6-12 | 600-1300 | 4 | Primers, Under coats, Architectural finishes, Industrial enamels |
| Long Oil 470 | Soybean Fatty Acid | 54 | white spirit | 70% | 6-10 | 800-1200 | 2 | High gloss paint enamels, Varnishes |
| Long Oil 471 | Soybean Fatty Acid | 54 | white spirit | 70% | 6-10 | 600-1000 | 3 | Primers, Under coats, Architectural finishes, Industrial enamels |
| Long Oil 405 | Soybean Fatty Acid | 54 | white spirit | 70% | 6-12 | 600-1000 | 4 | Primers, Under coats, Architectural finishes, Industrial enamels |





Short Oil

This type of resin is based on non-drying oils and is mainly used in industrial applications. It is used in making quick-dry nitrocellulose paints and furnace paints.

The Properties of Short Oil

- High viscosity
- Good chemical resistance
- Low flexibility and high hardness
- Oil content between 25 to 40%
- Typically applied via spraying
- Good solubility in aromatic solvents (Toluene and Xylene)
- Requires heating to dry and form a paint film
- Mixed with Chlorinated Rubber resin to produce pool paints and traffic paints
- Mixed with Urea-formaldehyde resin to produce acid curing varnish (dry acid) for wood
- Mixed with Nitrocellulose resin to produce fast drying car paints, sealer and matte and clear varnishes for wood

Short Oil Alkyd

| Product | Oil | Oil Length | Solvent | Solid % | Acid Value (mgrKOH/gr) | Viscosity (Stoke) | Color (Gardner) | uses |
|---------------|--------------------|------------|---------|---------|------------------------|-------------------|-----------------|--|
| Short Oil 600 | Soybean Fatty Acid | 30 | xylene | 60% | 6-10 | 50-100 | 2 | Quick dry, Hammer paints |
| Short Oil 601 | Soybean Fatty Acid | 36 | xylene | 60% | 6-12 | 120-250 | 3 | Stoving enamels excellent color retention, NC & Amino resins |
| Short Oil 602 | Soybean Fatty Acid | 30 | xylene | 60% | 6-12 | 150-250 | 3 | Quick dry, Hammer paints |
| Short Oil 603 | Soybean Fatty Acid | 30 | xylene | 65% | 6-10 | 150-250 | 2 | Quick dry, Hammer paints |
| Short Oil 604 | Soybean Fatty Acid | 36 | xylene | 65% | 6-12 | 300-550 | 3 | excellent color retention, NC & Amino resins |
| Short Oil 605 | Soybean Fatty Acid | 30 | xylene | 65% | 6-12 | 150-250 | 3 | Quick dry, Hammer paints |





Medium Oil

The Properties of Medium Oil

- Oil content between 40 to 60%
- Soluble in a mixture of aromatic and aliphatic solvents

The Applications of Medium Oil

- Semi-industrial applications in oil-based anti-corrosion paints
- Industrial applications in the production of car repair paints

Medium Oil Alkyd

| Product | Oil | Oil Length | Solvent | Solid % | Acid Value (mgrKOH/gr) | Viscosity (Stoke) | Color (Gardner) | uses |
|----------------|--------------------|------------|-----------------------|---------|------------------------|-------------------|-----------------|--|
| Medium Oil 501 | Soybean Fatty Acid | 44 | white spirit | 60% | 6-10 | 300-500 | 3 | Metal structural paints, Industrial machinery coating, Industrial air-drying |
| Medium Oil 502 | Soybean Fatty Acid | 45 | white spirit | 60% | 6-12 | 300-500 | 3 | Metal structural paints, Industrial machinery coating, Industrial air-drying |
| Medium Oil 503 | Soybean Fatty Acid | 44 | Xylene / white spirit | 60% | 6-12 | 100-150 | 3 | Industrial air-drying, Metallic, traffic |

Driers:

Dryers such as cobalt octoate, calcium octoate, and zirconium octoate accelerate the drying process of paints and coatings. These catalysts enhance oxidation and polymerization reactions, resulting in faster drying times and improved film properties. The precise dosage of these dryers is essential to avoid potential issues with the paint layer.

Calcium Octoate:

Calcium is widely used as an auxiliary drier in the paint industry, while calcium octoate may not have strong drying properties by itself, but it plays an important role in increasing the effectiveness of secondary driers such as lead and zirconium. In particular, calcium driers are used as wetting agents and pigment dispersers and help to improve the hardness and gloss of the paint layer. In addition, the presence of calcium significantly reduces the risk of losing dryness in the system and prevents the absorption of pigments by the primary dryer.

Cobalt Octoate:

Cobalt drier is a surface drier and strong oxidizing agent used in the paint and ink industry. It is usually combined with auxiliary driers. Overuse can cause surface wrinkling and increased film brittleness. Proper dosage control is essential for balanced, as excessive surface drying may prevent deep drying of the layer. Cobalt octoate also acts as a moisture barrier and is minimally sensitive to atmospheric moisture. Its polymerization rate increases the hardness and gloss of the paint layer while reducing brittleness. It also accelerates the catalytic reaction of methyl ethyl ketone peroxide (MEKP) in the polymerization of unsaturated polyester resins.

Zirconium Octoate:

Zirconium octoate, an effective auxiliary drier, is the most popular alternative to lead-based driers. When combined with cobalt in white paints, it ensures color retention and prevents yellowing. Unlike lead-based driers, zirconium octoate protects films from weathering effects, does not produce sulfide in sulfur-contaminated environments, and prevents black spot formation. Paint films dried with zirconium octoate exhibit greater flexibility, shorter drying times, and reduced hardness. However, at lower temperatures and in humid conditions, this process may be reversed.

Lead Octoate:

Lead octoate is a secondary drier that, via the drier, increases flexibility. It is crucial in applications requiring drying at temperatures below 10°C. However, it is not suitable for use in aluminum-based paints or vapor barrier paints due to its tendency to cause wrinkling. If there is sulfur in the polluted air, lead sulfide dryers produce black lead, which leads to darkening and reduction of glossiness of the paint film. Additionally, lead octoate is toxic due to its lead content, making C60 a safer alternative.

Unsaturated Polyester:

Unsaturated polyesters are synthetic copolymers that have applications as fibers, plastics, composites and coatings. Depending on the choice of monomers, initiators, curing agents, additives and modifiers used, it is possible to produce different types of these products that have a wide range of chemical and mechanical properties.