



Resin Art Between Beauty and Function

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ABSTRACT

Background:

Resin material is a type of liquid plastic that has the ability to solidify once it is exposed to air and after adding the hardener, which is a chemical molecule manufactured for an oil derivative. The chemical compound consists of carbon and hydrogen, and these compounds consist of a series of carbons and hydrogen atoms. Connected to this series, when the resin material interacts with the hardener, vapors and gases rise in the case of different proportions imposed between the two materials. After hardening, a transparent, unbreakable glassy material is formed. This study aims to get acquainted with resin and the chemical compositions of resin.

Problem statement:

The main problem regarding resin art is to devise the impressive rising trajectory for exploring the resins markets. The materials are used as transparent and unbreakable materials for different resin arts.

Proposition:

It also shows the importance of using resin in various fields, the role of resin art in some small projects, and the functional and aesthetic values of this material, as there are many artists who still use resin as a creative and productive medium in their artwork. Henceforth, epoxy resin markets are most likely to thrive and succeed even in the larger segment in the upcoming years with its initial advancements to the corporate sectors as well, whereas, space exploration and aeronautics industry have already witnessed the crucial impact on the impressive development and rising trajectory of the epoxy resins market.

Keywords: Resin, aesthetic, function of resins, resin arts, glass materials, chemical composition and others.

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1. Introduction

A resin is a solid or semisolid material that will typically transparent, hard, and brittle. The following report will discuss the concept of Resin. The chemical composition of the Resin will be also described. Resin and chemical composition, it will be a strong or semisolid material that is commonly straightforward, hard, and fragile. Tar workmanship will a moderately new medium that has acquired fame lately because of its novel properties and flexibility. Resin is used in safeguards the plant from bugs and microbes. Important artists that use Resin art will be also evaluated. Pitches jumble a large number of herbivores, bugs, and microbes, while the unstable phenolic mixtures might draw in supporters, for example, parasitoids or hunters of the herbivores that assault the plant. The most important artists' names in works are Peter Alexander, Helen Frankenthaler, Chuck Close and others. Resin arts are mostly

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used as background of different chemical components and potential of using in different projects. It is mixed as epoxy or casting as main suppliers. It is defined to focus on engaging the chemical components for different arts and projects. Furthermore, the use of this type of art will be also included in this report section. The scope of the study is to develop the research on resin arts, chemical composition, and functional uses of resin arts for small projects productions.

2. Resin and the chemical composition

Resin refers to the mixture of natural and synthetic compounds that share their physical and chemical properties. This is the most famous art which can be used for various purposes by famous artists. Resin uses viscous substances as its code ingredients and is also capable to make their solid form by the process of polymerization (Wang et al., 2019). This can be used for thousands of years in various applications such as coating, sculpting and others purposes. The chemical composition of the resin can depend on the types of materials that can be considered in the following ingredient. The organic compounds are composed in the making of resins and also use carbon, oxygen atoms, hydrogen and others (Pałka et al., 2020). Some resins may also contain different ingredients like nitrogen, sulphur and others which can create beautiful art and attract most of artists. The chemical structure of the resins can be divided into two parts such as natural resins and synthetic resins.

Synthetic Resins:

Engineered tars are man-made materials that are made through a course of substance blends. They are ordinarily made out of various natural and inorganic mixtures, including polymers, monomers, and added substances. A few normal instances of manufactured pitches include:

a) Epoxy Resin: The epoxy pitch is an engineered sap that is shaped by the response of epichlorohydrin and bisphenol-A. It is usually utilised as a cement, covering, and projecting material (Pałka et al., 2020).

b) Polyester Resin: Polyester sap is a manufactured pitch that is shaped by the response of styrene and polyester. It is ordinarily utilised as a projecting material, as well as in the development of fibreglass and other composite materials

c) Polyurethane Resin: Polyurethane tar is an engineered pitch that is framed by the response of isocyanate and polyol. It is usually utilized as a covering and projecting material, as well as in the development of froth items (Lewis et al. 2021).

Physical Properties of Resin:

The actual properties of sap differ enormously contingent upon the kind of tar being thought of. Notwithstanding, there are a few general properties that are normal to numerous tars:

Viscosity: Tars are regularly exceptionally thick, and that implies that they have high protection from the stream. This makes them valuable as cement and coatings, as they can be applied in a thick layer that won't run or dribble (Wang et al., 2019).

Hardness: Gums can solidify into a strong structure through the course of polymerization. The hardness of the subsequent material can differ contingent upon the particular tar utilized and the circumstances under which it was relieved.

Chemical Resistance: Tars are for the most part impervious to a great many synthetics, including acids, bases, and solvents. This makes them valuable in various modern applications where protection from compound erosion is significant.

Transparency: Numerous gums are straightforward or clear, which makes them helpful for applications where optical lucidity is significant. Models incorporate focal points, coatings for electronic presentations, and ornamental things.

Strength: Tars can be planned to have a serious level of solidarity and durability, making them reasonable for use in primary applications. For instance, epoxy tars are usually utilized as a network material in composite materials, for example, carbon fibre-supported plastic.

3. Resin Art

Resin is basically a beautiful material that is often extracted following a very natural procedure from the bark of certain trees belonging to the Pinaceae, legume families and Dipterocarpus. It is henceforth amalgamated with a chemical called epoxy to produce a runny, viscous texture to hold a piece

of art. The chemical composition of the resin can depend on the types of materials that can be considered in the following ingredient. The organic compounds are composed in the making of resins and also use carbon, oxygen atoms, hydrogen and others. Some resins may also contain different ingredients like nitrogen, sulphur and others which can create beautiful art and attract most of artists. Combined with various colours and pigments, this gives the substance a beautiful look. Once dried, this colourful substance is transferred into any piece of art, which gives the art form a beautiful glass-like finish which is popularly known as resin art. This piece of the waterproof, art form is encouraged widely worldwide and as many people are directly or indirectly involved in the business of resin art, the employment sector is witnessing a hike with this new form of artwork. Several job opportunities along with the production and consumption of this artwork have been seen to be beneficiary in the market value as well. (Torres, 2019). Resin refers to the mixture of natural and synthetic compounds that share their physical and chemical properties.

Being the most versatile and beautiful natural element found, artists all around the globe have developed a unique method in order to preserve the memoirs of their loved ones through the form of this exquisite artwork. Resin is quite durable and long-lasting which makes it even more special to wield with even woodwork and furniture.

With the enormous commercialization of resin in manufacturing jewellery, sculptures, ornamental decors and even furniture, it is undoubtedly being used in the most inventive ways possible. Resin art or painting is quite literally different from the conventional painting methods with no involvement of watercolour, typical brush strokes and acrylic or oil paints to create a piece of work.

According to the view of Volk et al. (2022), Epoxy resin being first discovered in the 1930s was used to adhere items or preserve objects and therefore, it was already patented as its own product. Undergoing the chemical reaction and change in its original form and texture, it has however become a trending art form ever since. With the growth of people involved in the business, the resin industries are also flourishing and time and again providing a worthy scope for the enlargement of the business (Mendes-Felipe et al. 2019).

Epoxy resin has been completely evolving through the tarnish of time and through this an incentive of interior designing is also sought by designers as a perfect opportunity. Architects and designers, globally, are inculcating art forms which are fashionable, elegant and even exquisite to look at (Mulligan et al. 2022). As a result of this heavily growing industry and expansion of the business in the marketplace, the resin has now been added to the must-have list for Architects and interior designers all across the globe.

Artists use resin in their works

Some of the most important and contemporary artists who infused resin in their artworks and crafts are listed as follows:

1. Mike Mozart

He started off his career with graffiti and doodle art back in the '70s and since then his art has been popularized worldwide. Much of his art forms comprises of the appropriation of Hasbro's Mr Monopoly man, often found to be connotation and in compromising positions. His most infamous resin artwork includes the vintage monopoly game boards that are coated in Art Resin and his various artworks are even displayed at the 212 Art Gallery in New York City.

2. Bree Ramirez

Being another important contemporary artist, she evokes lucid and vivid images of the beach, ocean, surf and freedom through the employment of resin in her artwork. The unique semblance of her marbled and lacy resin techniques through her strokes with various shades of the same colour makes her and her work distinctive from other artists.

3. Keng Lye

Being a Singapore-based artist, he sculpts a three-dimensional illusive portrait with animals painted within the layers of resin emphasizing his magical cumulative thoughts into the magical world. He draws inspiration from RiusukeFukahori, who is considered to be the master of resin art.

4. Marc Scheff

He is an award-winning, New York-based artist known for his conceptual portraits in his unique dimensions in layers of resin. He makes a very interesting insight about his conceptualizing his artwork

through his imagination, where he states that, unlike the subconscious mind, the layers of resin in his art are completely exposed and vulnerable.

5. Emily Mullet

Another well-known contemporary mixed media artist who has a diversified art backdrop ranging from ceramics to painting. At current times, she collages screen-printed imagery between multiple layers of reflective resin. According to her, the usage of resin, being a very unique and innovative material in itself ponders one to think about the depth and subtlety of the tones and patterns in her work. She uses floral imagery which emphasizes on the feminine aspect of identification of certain themes like growth, identity, independence and overall human bonding and emotional connection.

The scope of resin art is humongous besides being innovative and artistically equipped as it provides opportunities for growth worldwide. Alongside, each form of artwork or art form is unique and holds an age-old tradition with it; in order to preserve the archaic forms and uphold the beauty of this art form, a larger mass of people should pursue to endure the aesthetics of the work. (Patekar *et al.* 2022)

4. The functional use of resin art through the production of small projects

Apart from dealing with the innate beauty and aesthetics of the substance, it also seems to have adverse benefits in the field of commerce. There are around 12 types of resins and each is attributed to different properties and applications. The use of resin art is functional attributing to the growth and development of smaller projects in consideration of large-scale production as well.

With the changing lifestyle and continuous growth of the population worldwide, there is an expected boost for the development of the construction industry and with that, the demand for paints and coatings go hand in hand. With this said, the further growth owing to the rise in demand of the automobile industry is again complementary with the paints and coatings industries and this in return expects the high onset of the demand for epoxy resin in the market. Once, the dependency of all the industries is linked together, the revenue outcome and the market value also increase and this hike gives in a useful hand even in small projects and commercial profits in all spheres.

The advantage of the industries using epoxy resin has its own perks which take a heavy toll on the growth of various other industries along with using lesser energy than that compared to other heat-cured powder coatings. Side by side, paints and coatings comprising epoxy resin are more durable, pocket friendly, trustworthy and even cost-effective. It is also more environmentally friendly than other chemicals.

According to Wei *et al.* (2020), The Global Epoxy Resin Market is estimated to grow at CARG of 5.24% to reach USD 10,620.5 million by the end of 2023. The most influential and vital factors in the positive success of the increasing epoxy-based composites include demands from the automotive and transportation industry and a steady, strategic growth of the construction industry. Epoxy resin-based coatings are used for the manufacture and production of a number of important day to day useful items as well as household equipment. Ranging from food storage, tank lining, seal coats, waterproofing and decorative finishes the useful material has the potential to expand businesses into larger sectors.

Some of the most useful techniques used by the epoxy resin markets are as follows;

- **Wooden resin art:** Epoxy resin hardens to create a sturdy, long-lasting medium for wooden resin art. The use of resin art to turn ordinary, plain wooden furniture into one-of-a-kind works of art has made this widely known. As an alternative, the resin can be mixed with wood chips and colours to produce natural materials for use in different types of art (Kumari *et al.* 2019).

- **Picture art:** Resin is also utilised as a protective covering for photographs due to its compatibility with numerous dried inks. This also stops the pigments from deteriorating due to UV light, protecting precious memories of cherished ones.

- **Jewellery and ornaments:** Dainty resin jewellery or decorations can be made using smaller silicone moulds. Personalized resin pieces make wonderful presents for friends, family, or coworkers because they frequently combine natural components like flowers, shells, valuable stones, or any preserved item (Wei *et al.* 2020).

- **Crockery:** Given that it is suitable for use as dishware, resin art could add flair to any event. Although resin cannot be put in the dishwasher, it can be cleaned with warm, soapy water. There are

moulds available to make beautiful cups, vases, and plates that are sure to impress and leave a lasting impression on anyone.

Painting and coatings came in second place with a 34.0% market share of the whole worldwide epoxy resin market in 2015. Due to the rise in demand for high-strength, lightweight composite products from the aerospace, automotive, and defence industries, composites are also anticipating future growth (Kumari et al.2019).

5. Conclusion

Beginners are encouraged to practise and eventually master the straightforward methods used to produce amazing resin art by making resin art. Epoxy resin offers countless creative possibilities due to its unique properties and compatibility with a wide range of materials.

The price of getting started with resin art will vary depending on the scope of your endeavour and how frugal you are while buying the required supplies. Your new hobby will cost more as your ideas develop.

Favourable properties such as high thermal stability, mechanical strength, moisture resistivity, heat resistance and adhesion make epoxy the most suitable and viable option for various end-use applications and Industrialization use. To sum up, the explosion of the construction industry globally has indirectly driven for the production and manufacture of epoxy resin in the market and as the demand for epoxy resin in the market increases so do the paints and coatings industries. This proved to be a boon for the stability of important industries linking to massive rapid growth which is likely to be seen in the coming years.

While developing on possible implications for the future in the use of resin for art making, there are several implications for developing and creating “beautiful castings, paintings, and surfaces for furnishing”. It can also be used for construction tools and engineering firms. The global epoxy resins market has been probing to be beneficiary of the steady growth in the aviation sector. Another vital analogy of the epoxy resin is its reduction in weight which enabled the usage of the resin in the field of the aerospace industry since it results in significant control of the expenditure on fuel emissions. Henceforth, epoxy resin markets are most likely to thrive and succeed even in the larger segment in the coming years with its initial advancements to the corporate sectors as well, whereas, space exploration and aeronautics industry have already witnessed the crucial impact on the impressive development and rising trajectory of the epoxy resins market.

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