Maximum sustainability in the paint and coating industry: The pioneering initiatives of Regent Paints

Contributed

SUSTAINABILITY is a key concern and perhaps the most discussed topic in the paint and coating industry. Essentially, the purpose of paints is to provide durability and protection to an object while enhancing its appearance and prolonging its life. In light of this fact, the contribution of the paint industry towards global sustainable development can be enormous. Paints and coatings manufacturers are starting to come up with innovative solutions to play their part.

The best way to start is by optimizing and using the available resources to their best use. The reduction of waste on the paint manufacturing floor is a critical aspect to consider in order to achieve maximum sustainability.

Today's manufacturers have several options for land burying or fuel blending of paint-related materials to get rid of the waste. However, the dependency on a secondary recycler or vendor is inevitable and so is waste generation.

Fortunately, the industry is beginning to advance in the right direction. The reuse of paint items, in particular, is a commendable step forward in bringing sustainability in the industry. Nevertheless, it's high time now that one takes an initiative to reduce waste creation in the factory itself, says Mr Matawala.

By creating a coating product from waste streams within the facility, one cannot only reduce a lot of waste but secure savings in the import of raw materials and the extraction of natural resources as well.

The contribution of Huzaifa Matawala

One name that comes to mind when one talks about bringing a revolution in the paint and coating industry on the journey toward maximum sustainability is Huzaifa Matawala, President of Regent Paints Inc. He is a paint and chemical recyclist who has created revolutionary formulations and innovative products to prevent land burials and fuel blending of several million pounds of materials.

The result is lesser waste in factories along with economical reuse solutions. The concept of cutting down waste generation is coming to life with this initiative, which seeks the best environmental solutions for recycling paint-related waste. Reutilizing paints and raw materials in the most sustainable way possible is the way to go.

One can begin by discussing about the common paint binders that is used before intone goes into the details of the process.

Three paint binders commonly used

The three most important binders or resins used in modern paints are:

1. Acrylic Polymers

Acrylic polymers that is commonly used in emulsion paints are based on homopolymers or copolymers of ethenyl ethanoate (vinyl acetate) and a propenoate (acrylic) ester. They are either carried in water or organic solvents. The former is more environmental-friendly than the latter.

Both water-borne emulsion paints and solvent-borne paints are good options for industrial paints. Solvent-borne industrial paints give a solid layer of protective finish. It is usually used as topcoats on cars and other objects. For this type of paints, one has to implement extra, careful processes as every batch is special. The products are so diverse in terms of properties and the resins they contain.

2. Alkyd resin

This complex polyester forms film in some paints and clear coatings. Alkyd-based enamel paints are oil-modified and have been one of the most popular and important types of surface coatings. With the addition of volatile organic solvents, they

can easily beat the newer polymer systems.

Nevertheless, manufacturers still use alkyd resins in low-performance industrial coatings and architectural paints.

3. Epoxy resins

They are usually used in industrial coatings to give the paint powerful adhesive abilities. They are also highly resistant to chemicals and corrosion. This makes them an excellent choice for ships and tanks that store chemicals.

An excellent initiative by Regent Paints

Regent Paints Inc. is known for its amazing technical and reprocessing capabilities. They strive to utilize their plants in several locations to come up with an environmental-friendly solution for reducing paint-related waste. The idea is to evaluate, classify, and use paint waste in specific paint batches as a whole new product.

They have incorporated a system for reusing waste products, raw materials, wash streams, expired products, mistint paints, batches gone wrong, discontinued lines, closeouts, and all kinds of off-specs. Thier goal is to create new products from these materials in all factory locations, stores, and warehouses instead of waste. They make a list of items that are obsolete, unsaleable or beyond repair and focus on the basic details before categorizing them into different groups. Simply put, they don't treat them as 'waste'.

As per their approach, fuel blending is an appropriate option for petrochemicals, oils and flammable items only. Solvent-based paints on the other hand, including alkyd enamels, alkyd resins, stains, hardeners, ink products, tank-washed solvents, primers, epoxies, and paint thinners can all be reused.

That being said, Mr. Huzaifa Matawala has been waiting for the U.S. Patents and Trademark Office to approve patents for his oil paint formulations and recycling processes. The intent is to use solvent-based items to recreate a product. This process is similar to the latex recycling process.They go through the details of the ingredients and assess the chains the resins have formed due to chemical reactions. The study of the binders and resins in the paint also plays a vital role in determining the results of the final batch.

The Process

According to the Company, for water-based paints, the process is simple.

- Color-wise sorting
- Bulking
- Filtering
- Blending
- Packing

These stages involve the initial sorting of the paints on the basis of:

a. All kinds of decorative enamels, epoxies, polyurethane and industrial coatings and primers. They always ask for TDS, specs, a sample report, or an in-person visit before finalizing the contract so that one has a clear idea of what has been collected. Most of the items are mineral spirits-based while most general resins are soya-based or based on long/medium oil.

b. Compatibility with other matte and glossy paints. They use Glosso-Meter and density checks to determine the item's strength and its resin content. Every barrel that is received is unique. However, the final product is a primer of matte/eggshell finish or a bitumen item. The final product is often a basic economic coating for walls, metals, or wood.

c. Density and ingredient check. Finally, they carefully evaluate the product mixing in the batches of their patented primers and coatings.

Their final products are made to be used by local buyers. *While these coatings may not be so valuable in developed* countries, they can serve as a major resource in countries with ongoing infrastructural development.

Made with solvents and oil paints, their final products are highly durable and healthy. These items are used as an economical coating in several markets.

They use low-priced resins and solvents in our formulations to produce bitumen paints and other coatings. Such primers serve as an excellent undercoat.

Now, they have replaced bitumen coat formulations with recycled paints. They have also produced different primers for metal and wood. They understand that the coating must be resilient enough to stand salty, humid, and dry climates.

It must be able to protect the surface, prevent wall erosion, and promote the strength of the structure in the long run. For the revised formulations, they have listed technical datasheets containing alkyd elements and its CAS details with the Kuwait Ministry. These products have been tested and approved in the market, as they meet all requirements.

At Regent Paints Inc., they believe that oil paints are packed with important ingredients that can be better utilized as paints. By burning them into fuel, they end up burning the resins, premium solvents, wax, metallic driers, pigments, additives, and other valuable ingredients.

They also realize that the process of creating a pigment is not only resource-costly but also warrants lots of energy. The heaps of resources, energy, power, and rare blends of nature and technology that one uses for fuel blending can be utilized in a better way.

By fuel blending these specialty items, they do nothing but waste an opportunity to save them. To create new resins, pigments, solvents, additives, and metallic driers, they have to extract more gums from trees, minerals from the mountains, or retrieve oils from the sea. It takes so much to create specialty hydrocarbons and monomers for premium specialty coatings.

Wouldn't it be better and far more environmentally appropriate to reuse oil paints and paint-related items to save ourselves the cost, time, and energy of new raw material generation?

Of course, it will be! According to the company, re-utilization of oil paints also helps one save many natural resources. Not to forget, in most cases, the paints of certain grades do not help the burning process rather increase the fuel blending costs.

Mr. Huzaifa Matawala's approach

Mr. Huzaifa Matawala is the President of Regent Paints Inc. He is also an SCAA member since 2017 and has previously published papers in international coatings journals. Leading from the front, Mr. Huzaifa has advanced the paint industry by developing innovative and much-needed recycling processes for oil and latex-based paints. To date, his company has successfully recycled millions of paint gallons across the world through effective processes and programs.

Needless to say, it has been playing an integral role in the pledge to make the planet cleaner and greener. The business takes pride in providing high-quality paints, coatings, and related products in the most environmentally-friendly way possible to ensure the protection of health and wellbeing of the people and our beloved planet.

In 2019, Mr. Huzaifa presented a paper on Maximum Stability at Bio-based Coatings Summit APAC at Dallas.

Introducing the event, he offered the U.S. audience valuable insights into the latest industry developments, policy evaluations, and growth drivers. It was under his advisory that the ACI Europe team had created the first-ever Bio-based Coating Congress Summit and so, he was selected as a Chair for the event in 2019.

During the event, he shed light on the historic events, the issue of overexploitation of resources, and the possibility for creating environmentally-sustainable products with a minimum carbon footprint. The entire event was a significant first step toward the reality of Bio-based coatings, sustainable circular economy, and environmental-friendly industry.

Later in 2020, Mr. Huzaifa was selected to chair the Bio-based Coatings Asia Summit on the second day, which was held in Bangkok, Thailand. He gave a presentation and led panel discussions, highlighting the need for conservation of resources and the creation of sustainable circular economy. He also went into the details of how this much-needed change could be brought about in the paint and coating industry.

Mr. Huzaifa believes that we are living in an era of abundance. While our lives have become more comfortable with all kinds of accessories, exploitation of resources is a problem that one needs to think about.

There has to be a sustainable culture in the paint and coating industry to reclaim the value of unused and off-spec materials. One must contemplate waste creation in different stages and put these materials to good use instead of burying them or sending them to landfills.

With his paint manufacturing company based in the UAE and India, Mr. Huzaifa strives to reduce the carbon footprint of the industry. He has been successful in reusing over 14 million gallons of waste, which otherwise would have de-fertilized almost 60,000 square miles of land. He also believes that fuel blending does more harm than good and that modern paint and coating manufacturers need to think about the environment and global sustainability.

Mr. Huzaifa and Regent Paints Inc. are certainly changing the game for paint and coating industry when it comes to promoting paint waste reuse and global sustainability. Next, he will be speaking at the ACS Green Chemistry and Engineering Conference (GC&E) in Washington Seattle in June 2020.

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