



News Letter

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Vinyl is an integral part
of our day to day life



From the desk of Editor

The world of plastics keeps moving on at even brisker pace as the business world's requirements keep going up, with the civilization requiring a flexible, malleable and versatile medium to fulfil its needs. PVC is perhaps one of the best available mediums to fulfil the needs of our modern-day needs.

There are however sounds of protests from some quarters about the negative implications of plastics. What is important for all of us to understand that plastics is not a bad word; and it is not replaceable. What is required is management of its waste and recycle it. If somehow, we can do this, and we have no choice but to do it, we would have found a better way to live and make the environment sustainable.

One of the recent issues pertaining to responsible living arose from an order of March 2021 from the Ministry of Environment, Forest and Clean Climate, giving a phase out plan for Lead stabilizers for the Indian PVC pipe sector. Accordingly, the PVC pipes made and used for water management applications need to shift to alternative stabilizer usage by March 2025 in a phased manner.

IVC along with others in the industry, took up the cudgels and interacted actively with BIS and CIPET to discuss the concerns of industry. Basically, the ministry was making BIS certification mandatory for all types of PVC pipes to adhere to proposed notifications. This would have made very difficult to manufacture pipes made out of in-house waste by small and medium scale manufacturers as they make different sizes with different formulations and for short production cycle. It would have also resulted in lack of innovations.

It is now agreed not to make BIS certification mandatory. The PVC industry would now on its own volition work towards a lead-free pipe manufacture by the dates mandated. Needless to mention, the Indian PVC pipe industry will make sure that they produce products that are responsible.

Arising out of the lead-free pipes, there is another challenge which will come up in the near future. What happens to all the old pipes which gets damaged and treated as scrap? These need to be recycled too. However, the old pipes will contain lead. How does the industry recycle them, when lead-free pipes are to be manufactured? IVC is going to focus on finding answers to this conundrum. How to recycle old PVC pipes (manufactured through lead stabilizers) in an eco-system which cannot have lead? It's a challenge, and we will try to get some answers.

The international commodity prices are stabilizing. The rampant increase in the recent months, perhaps are behind us. The logistics of import and exports are also looking much better.

The industry is upbeat. It is hoped that the virus called Omicron does not affect us severely and we are able to pass the menace with minimum damage. If it happens, we do believe that the business environment is likely to step into some positive momentum period.

Robin Banerjee
Managing Director
Caprihans India Ltd.



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All about the Indian Vinyl Council



The Indian Vinyl Council is set up and exclusively dedicated to the cause of entire PVC value chain. The objective of the forum is to serve all the stakeholders of Vinyl Family, that is, the resin producers, additives and related chemical producers, converters, processing and ancillary equipment manufacturers, recyclers of Vinyl products and the end users. With the active and harmonious participation; the members, end users and the public at large will all stand to reap considerable benefits.

The Council will play a pivotal role as the hub of advocacy between the government (state and central), policy makers, regulatory bodies and industry stakeholders to pave the way for the industry by eliminating obstacles and opening the doors to expand the market for the Vinyl industry.

Adding greater momentum to the growth of the Vinyl industry through networking will also be one of the core responsibilities of the Council. It will work towards increasing access to the industry's leaders and enabling them to connect seamlessly with suppliers, academia, regulators, scientists and experts through seminars, conferences, technical meetings and other events.

One of our top priorities is to ensure the efficient diffusion of knowledge to all our members, on the state of art technology, market perspectives, statistics & information and details of global initiatives on sustainability... all relevant to the Vinyl and allied industries.

Our focused approach is to work towards the welfare of mankind and encourage responsible care in an environmentally sustainable manner as practiced and specified in circular economy principles and models.

We strongly believe in supporting & encouraging innovation, and training & skill development within the Vinyl value chain, to facilitate raising the competency and the level of industry to global standards.

We are also committed to developing technical standards for maintaining quality and consistency to enhance the acceptance of Poly Vinyl Chloride and related products and multiply its application in all spheres of life.

IVC Objectives

- To promote and advocate all round development of the entire Vinyl industry comprising of all elements of the Vinyl value chain
- To build a positive image of Vinyl products in eyes of the end-users as well as society at large.
- To assist and collaborate with the government and non-government bodies and statutory authorities for formulating industry related policies including codes and standards and seek representations from such bodies.
- To promote and support standardisation and quality assurance programmes to encourage regulatory compliances.
- To create awareness and educate the end users of the value proposition of PVC products including energy conservation, eco-friendliness and sustainability.
- To support and encourage innovation, training and skill development within the Vinyl value chain and thereby raise the level of industry to global standards.
- To institute and/or fund scientific and economic research in the industry connected with PVC and its products.
- To provide a forum for member associations to collaborate for broadening the market for PVC products.

UPVC windows - India market - Opportunities and Challenges



Mr. Farid Khan,
Director and CEO,
Profine India Window Technology
Pvt. Ltd.

Indian fenestration industry is comprised of windows and doors made of aluminium, wood, steel and uPVC, where uPVC is the newest entrant in the market. Though the presence of uPVC window & door systems in India is almost 20 years old, but the material usage is still considered at a nascent stage. Reason: it occupies a small share of the overall window and door market i.e. 15% and need more awareness to make it popular and worth installing. Window and Door market is directly associated with the performance of the real estate industry and we know the construction sector in India has huge growth projections. That's why there is opportunity for uPVC window & door systems to grow and create bigger market space. Other reasons for pushing its growth are technical aspects of the modern uPVC window and door systems, which makes it highly durable, minimal maintenance, easy operation, availability of vast range of systems, optimum performance and sustainability.

In the recent times, the real estate industry has been drastically affected by the uncertain economic environment created by the pandemics. The first wave of the pandemics completely shut down not just the real estate industries but the economy as a whole, as there was a question of human survival. It created an imbalance in the supply and demand scenario, due to shortage of supplies, enhanced prices and shrinkage in demand. uPVC market is no different from this price surge and supply-demand disparity.

Being in the business of producing uPVC profiles, we are taking the heat of price variation frequently and to operate in this competitive market has become more challenging. India is a price sensitive market where end customers are more concerned with price than quality. Hence, selling quality products get very tricky and challenging.

In the uPVC window and door market case, prices of PVC resin has increased almost 125% in the last one year and still on upward trend as well as with other ingredients. This is making the market uncertain for the industry as a whole. At the same time, we can't increase prices for the finished product at the same ratio of increased raw material prices due to various reasons like competition with other material, price sensitivity of the market, fear of losing business etc. As a result being a manufacturer, we have to absorb a good portion of increased costs which affects the profitability of the business. In the longer run, this is not a favorable situation for the industry, as an enhanced cost is encouraging replacement and usage of other established and alternative material.

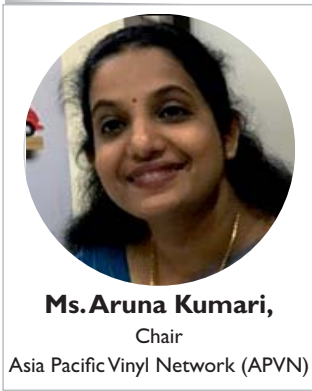
Now let's talk about, things which are positive for the economy and window and door industry. We can see the vaccination drive is in full swing and covid cases are declining, making the sentiments of the market positive. Real estate has started doing well throughout the country, as a result demand for construction material including

fenestration i.e. windows and doors have again increased. All materials for windows and doors market in India is estimated to be around INR 15,000 crore and based on the future projections, it will keep rising due to rapid urbanization and development of commercial buildings. Other growth drivers for the fenestration industry are: increased purchasing power of the middle class, increased awareness for advanced, energy efficient and sustainable window and door systems etc. Window and Door market in India comprises of aluminium, wood, steel and uPVC, where the share of wooden windows will keep decreasing due to environmental concerns i.e. deforestation. Therefore, growth of other material made windows and doors is natural and evident.

In spite of many advantages this product has, it needs more efforts and awareness programs both from Private and Government sector to make it popular amongst retail, commercial and government sectors. Private sector has already initiated various awareness campaigns at the national level which helped in gaining trust amongst the builders, architects, engineers, fenestration consultants and the end users. UWDMA is one such platform constituted by reputed names of the fenestration industry. It helps in promoting and propagating uPVC windows and doors and its benefits to the Indian construction industry and general public at large. On the other hand, Government should take initiative by giving special attention towards uPVC industry. As a manufacturer, our expectation from the Government is to establish quality parameters by standardizing it through BIS. As this product helps in providing environmental benefits and reduces CO2 emissions, it should be treated as a product of need for the green buildings. Government should also consider slashing of the GST rate so that it becomes affordable for the customers and help in reaching to a larger segment. Therefore three most important ask from the Government for the industry are 1) Quality Parameters & Standardization of Product; 2) Should be listed as a Green Product; and 3) Low GST rate

Based on my experience I am very optimistic about the future of the industry. The ongoing and expected future growth in infrastructure sector, increase in FDI and growing middle class gives a clear indication that uPVC window and door market will get more opportunities and growth at a good rate. With India's metro and big cities becoming noisy and polluted, uPVC windows and doors are expected to become a priority for people thinking about constructing new homes or renovating their existing ones. Also the sustainable part of these windows will also be the deciding factors in the near future. With the growing number of façade and window consultants in the country, the industry will mature and give focus on the quality rather than going for traditional and cheap quality material. At the same time, this segment needs more informative campaigns to create further awareness.

PVC - Past, Present & Future



Ms. Aruna Kumari,
Chair
Asia Pacific Vinyl Network (APVN)

Polyvinyl Chloride or PVC is a popular and adaptable material which has lots of commercial functions. PVC is a thermoplastic Polymer and the third most commonly used plastic after Polyethylene and Polypropylene.

PVC was accidentally discovered at least twice in the 19th century, first in 1835 by Henri Victor Regnault and in 1872 by Eugen Baumann. On both occasions the polymer appeared as a white solid

inside flasks of vinyl chloride that had been left exposed to sunlight. PVC was never patented until 1913. Inventor, Friedrich Heinrich August Klatte initiated the polymerization of vinyl chloride with sunlight. Fritz Klatte of the German chemical company Griesheim-Elektron was the first person to receive a patent for PVC. In the early 20th century the Russian chemist Ivan Ostromislensky and Fritz Klatte, both attempted to use PVC (polyvinyl chloride) in commercial products, but difficulties in processing the rigid, sometimes brittle polymer blocked their efforts.



PVC pipe Installation

The most significant breakthrough occurred in the United States when the company BF Goodrich hired the industrial scientist Waldo Semon to develop a synthetic replacement for the increasingly costly natural rubber. He was trying to dehydrohalogenate PVC in a high boiling solvent in order to obtain an unsaturated polymer that might bond rubber to metal or for any other useful purpose. He began experimenting with the discarded material by combining it with other chemicals and exposing it to heat. Waldo Semon and the B.F. Goodrich Company developed a method in 1926 to plasticize PVC by blending it with various additives. The result was plasticized polyvinyl chloride - which we now call PVC or vinyl - a flexible "gel" that had striking similarities to natural rubber.

Semon had been quoted as saying "People thought of PVC worthless back then, they would throw it in the trash".

Throughout the late 1920s, Semon continued to experiment with this new material, but BF Goodrich had a difficult time marketing it.

Semon received United States patents numbers 1,929,453 and 2,188,396 for the "Synthetic Rubber-like Composition and Method of Making Same; Method of Preparing Polyvinyl Halide Products."

During 1930s ... Vinyl (PVC or polyvinyl chloride) remained a laboratory curiosity until its first commercial use - shock absorber seals - opened the eyes of industry to other potential applications.

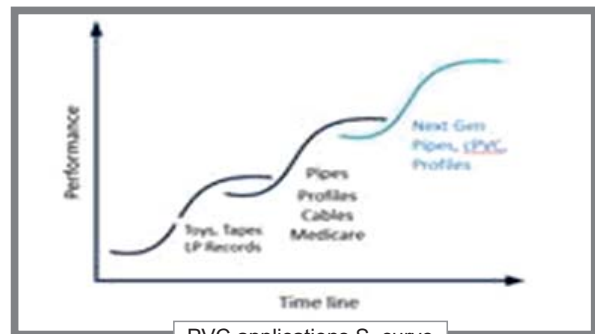
In 1940s ... Vinyl played a significant role for the armed forces during World War II, addressing severe shortages of natural rubber. As a result of its superior safety and performance as a nonflammable electrical wire coating, vinyl has remained the standard material for wire insulation.

From 1950s ... Vinyl's capabilities continued to diversify, as new formulations further expanded the material's physical properties and opened new markets. The most important innovation came when irrigation pipe made from rigid vinyl was introduced to the United States.



PVC Windows ..

Today PVC is used for manufacturing products like pipes, profiles to floorings, curtains to wire & cables as well as medical applications. PVC Industry is catering to various industries like Construction, medical, packaging, etc.



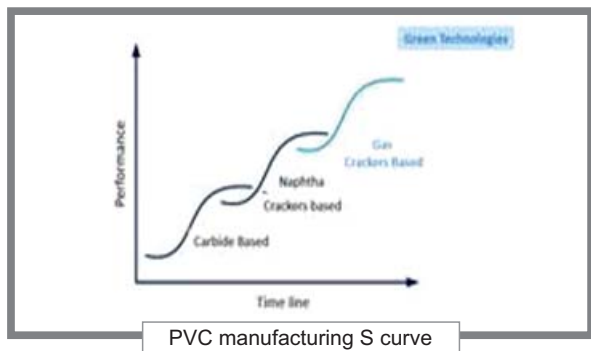
PVC applications S curve

Global consumption of PVC is growing with growth rate of 3% with broad base of 46 MMT. In India the consumption is increasing with double digit growth rate of ~5%.

Though the growth is observed for established applications, there is still a new horizon of applications to be opened for PVC products for specialized applications.

Recent Developments

Continual research for developing new PVC products is undertaken by various scientists across the globe. PVC -Calcium carbonate nanocomposites, grafting of plasticizers on PVC molecules, grafting of acrylic polymers with PVC for flexible medical applications are some of the research areas.



PVC manufacturing S curve

PVC nanocomposites can be manufactured by melt processing of PVC with nanofillers or in-situ preparation of PVC resin in presence of nanofillers. PVC nanocomposites will open a new market for applications like high pressure pipe manufacturing, rigid profiles for doors and windows as well as flame retardant wire insulations etc.

While grafting of plasticizer on PVC molecule provide product with suppressed plasticizer migration for medical applications. Flexible PVC formulations are extensively used for the production of many different articles in the medical field, such as blood or urine bags, transfusion tubing, etc. To obtain the desired flexibility and durability, PVC is sometimes mixed with plasticizers. Due to thermodynamic reasons, plasticizers tend to migrate to the surface of an article leading to a progressive loss of its initial properties and imply serious health hazards in some applications like toys.

Problem of migration can be solved by introducing covalent linkage of the plasticizer to the polymer chains. PVC can be chemically modified by partial substitution of its chlorine atoms.

Monomeric plasticizers have been used for PVC but its use is decreasing due to migration from PVC product. Various products were tried but no product found satisfactory. PVC composition can be plasticized by grafting acrylic polymers with vinyl chloride during polymerization. PVC grafted with acrylic polymers can be used for PVC flexible applications eliminating need of added plasticizers. Acrylic grafting provides internal plasticization to PVC making it desirable for products like shower curtains, rainwear, table covers, shower caps etc.

Acrylic grafted PVC resin can also be used for impact modified PVC pipe applications based on the percentage of acrylic content.

To reduce dependency on petroleum resources, Global polymer industry is developing technologies for bio-based plastics. For the production of bio-based PVC, ethylene is derived from dehydration of ethanol received from fermentation of biomass.

PVC is converted in to variety of products from flexible to rigid by formulating with various additives. PVC is always a soft target for environmentalists to attack on the ground of usage of toxic additives like lead, phthalates etc. Continual developments of new additives like calcium zinc based stabilizers, castor oil or citric acid based plasticizers are adding to sustainability of PVC.

Another critical aspect of PVC industry is waste management. Globally various programmes have been undertaken to solve the problem of waste management through reuse, recycling and energy recovery. Many products like pipes, profiles are recycled to manufacture products for non-critical applications. Billboards are used for making temporary shelters, handbags etc. Also methods for conversion of plastic waste to fuel are being developed in many countries.

Asian economic developments in last decade attracted the global PVC industry due to significant growth in consumption of PVC. Asia has witnessed double digit growth in consumption due to increase in per capita income. India and China are leading countries in Asia with huge investments in infrastructure resulting in increase in consumption of PVC. Huge demand supply gap in India is creating lucrative market for global PVC manufacturers as well additives and machinery manufacturers.

All these technological innovations will give new dimensions to Global PVC industry. We need to put efforts to maximize the horizon of applications to accept these innovations and make PVC industry sustainable.

Globally, acceptance of PVC products is increasing year after year due to performance evaluation on life cycle analysis. In India this concept is not yet developed. PVC products always score over traditional materials on evaluation of their total life cycle – from raw material production to land filling or energy recovery.

Due to their inherent advantages such as energy as well as resource conservation, PVC products are being well accepted in Green Buildings in US, Europe and Australia and now in India. In many countries PVC products are categorized as Green products for Building & Construction.

We need to work towards developing new products for Indian market, databases on life cycle analysis of various PVC products and create awareness about green aspects of PVC products.

PVC – Is it an Evil?



Mr. Satish Kumar
Group Business Development
Director – APAC
Deceuninck Profiles
India Pvt. Ltd

Today, it is very easy to put down any product or person. Twist some facts and publish on social media, get some followers to endorse your views and poof – the reputation of the product or person is tarnished! Often people rely on half truths or hearsay; and the real perpetrator cleverly isn't exposed in public. We have seen this in many cases before, and more recently, in the case of actor Sushant Singh Rajput. Some famous names simply put him off as depressed, distressed and even suicidal.

And as expected, the media latched on to the alleged rumours. Some self-professed experts on the issue have been trying to gather voices to prove otherwise, but as days will pass, this episode will also become just another news.

I recently read an article on Zohnerism – a story about a 14 year old boy – Nathan Zohner, from Eagle Rock Junior High in Idaho. For his 1997 Spring Science Project, he wrote and distributed an article on the ill effects of Di Hydrogen Mono Oxide / DHMO. His argument was so convincing that 43 in 50 of his classmates voted that this chemical should be banned. Some of his arguments:

1. DHMO caused death of thousands of Americans due to its excessive ingestion.
2. DHMO causes corrosion and rust in metals.
3. DHMO causes urination due to its ingestion.
4. DHMO is highly addictive
5. DHMO complete withdrawal can cause death.
6. DHMO is present in Acid Rain
7. Hot DHMO can scald the skin
8. DHMO is present in Tumor and Cancer-causing cells.

His paper titled How Gullible We Are? He went on to explain how easily people can be misled. He even won the Grand Prize that year at a Science Fair. I am sure some are wondering what DHMO is? The answer is simple! Di Hydrogen Mono Oxide – 2 Molecules of Hydrogen, one molecule of Oxygen = H₂O = Water.

Now read his arguments again – Swallowing excessive water i.e. drowning caused thousands of Americans to die, water can cause rusting and corrosion, water causes urination.....

Same way, the nay-sayers rubbish the achievements of PVC:

1. PVC is not stable. It has Chlorine. PVC leeches Chlorine. Chlorine kills.

Reality- PVC is very stable. Water pipelines are increasingly being produced by PVC or CPVC across the world. PVC pouches are even used to store blood! What more can you ask for!

2. PVC will disintegrate when exposed to Sunlight (UV).

Reality- Repeated tests up to even 5 years and UV exposure as high as 36 GJ/m² hasn't been able to discolour UPVC, leave alone disintegrate it.

3. PVC windows will catch fire.

Reality- The Oxygen Index (Oxygen required for a material to burn) is 45-50. Oxygen level in atmosphere is 21%. Interestingly, the Oxygen Index of ABS/ Poyamide is (used in Thermal Break Aluminum) 17 to 22.

4. PVC releases Hydrogen Chloride Gas during fire, which is highly toxic.

Reality- Results show that most of the deaths during Domestic fires are caused by inhalation of Carbon Monoxide. The percentage of Hydrogen Chloride Gas released by a framing material in a fire, which is raging at close to 1000°C, will be negligible. Human skin scalds at 100°C (Boiling water), while PVC starts to melt (Welding temperature) at 250°C.

5. PVC is not strong.

Reality- Impact strength can be gauged by dropping a 1 Kg ball from 1m height. Nothing happens to the profile. People should try hammering PVC and Aluminium Profile and see what happens to both.

6. PVC is brittle.

Reality- Tests conducted at -10°C have shown no problems. PVC has extensively been used as windows and door frames at lower temperatures across the world.

7. PVC becomes soft at high temperatures.

Reality- Tests using Vicat softening pegs it at more than 80°C. In addition during tests the PVC profile is heated upto 150°C to check if any blisters or cracks appear on the profile surface. PVC passes with flying colours.

8. PVC is not recyclable.

Reality- PVC can and is successfully being recycled across the world.

I can go on and on, but would like to stop here and ask you to think about – Zohnerism. It is not just a word. We will be the next victim if we don't analyze and understand the information we are given.

PVC is not an EVIL. Think about it!

Greiner - A Synonym for Extrusion Expertise.



Mr. Gerhard Hoffmann
GREINER
Head of Product Design & Innovations

Profile extrusion employs thermoplastics such as PVC, PP, PE, PMMA and TPE. In solid form, these materials are pressed through a shaping tooling in the extruder under high pressure and temperatures. This procedure is generally followed by water-cooled calibration, which completes moulding of the profile by pressing it against the calibration wall. As a rule, the profile bars are then cooled in a water bath before being cut into

6m-lengths. Depending upon the product type, further processing such as the addition of protective films, punching and seal insertion, etc. can be carried out on the extrusion line. The finished profiles then rest for 24 hours, prior to subsequent utilisation in the manufacture of windows or other technical products.

The extrusion process is ideally suited to the production of PVC windows owing to its ability to provide profiles with stable forms in sizeable lengths. In addition, these profiles can be designed to accommodate the complex features required for the manufacture and assembly of the various parts employed in high-quality windows.

Greiner Extrusion is the world's leading supplier of tooling, lines and turnkey plants for profile extrusion. Its core competences in this field extend from development and design to manufacturing and process optimisation, as well as a wide-ranging services portfolio. Thirteen locations in Europe, North America and Asia underpin these capabilities along with six tuning centres and fifteen permanently available extrusion lines, not to mention one of the largest development centres in the entire industry. It is this sophisticated network that generates the know-how and abilities required to provide customised solutions for the achievement of significant competitive advantages in every aspect of profile extrusion.

Extrusion is also more than able to comply with the current window design trends in India, having very long expertise in designing India specific profile systems since the last 14 years, which include narrower face widths for a lighter and more elegant appearance as well as improved sound and thermal insulation thereby saving energy. Several window extrusion leaders in India are testimony to a mutual beneficial partnership with Greiner Extrusion. Moreover, the use of plastics rather than metals echoes the developments in the automotive industry in relation to weight reductions and lower production costs.

During profile extrusion, lot of recent emphasis is on advances in the materials field. Accordingly, it uses recipes that include PVC heat stabilisers, which prevent polymer degradation and increase the thermal stability of the PVC compounds during processing, and thus safeguard the profiles at every stage. It also employs Ultradur® B4040 G11 HMG HP BK05110. This is a 55% glass fibre-reinforced PBT alloy produced by BASF, which provides high tensile strength, low warpage and good flowability at reduced processing temperatures, and is therefore ideally suited to metal replacement. Greiner is well adapted and experienced in all these developments.

Our latest creation is using DIGI.LINE technology, which represents the 4.0 extrusion future. DIGI.LINE constitutes a digitally controlled and real time optimised profile extrusion process that during exhaustive testing has been shown to deliver consistent profile reproducibility and superior quality. In addition, as compared to standard systems, material consumption and

Personnel costs can be reduced drastically and output increased, which on the bottom line results in measurable added value.

Apart from these production-related aspects, as a full-service provider with a vast range of experience and its own testing facilities, Greiner Extrusion is able to create special materials that can be implemented in terms of profile technology and tested for market maturity. Furthermore,

It offers extrusion profile production analyses, improvements, further developments and even rethinks. It is also an ideal partner for companies that are considering entry into the profile production field and require expert assistance for the highly efficient realisation of in-house manufacturing capacity.

During all its activities, Greiner has a constant focus upon profile diversity that not only precisely meets customer needs, but also end price and market considerations. In fact, Greiner Extrusion offers a comprehensive portfolio of profile solutions that incorporate the



Heat Stabilizers for Medical Applications of PVC



Ms. Sakshi Hazari
Goldstab Organics Pvt. Ltd.
Executive - Technical Services

The pandemic of 2020 has changed the world in many ways like never before. But there is a silver lining. Plastics have gained great respect in society in general, thanks to the contribution of PPE kits and medical devices in the fight against Covid-19. Plastics have been the undoubted hero in this battle that protected frontline workers as a shield and helped to protect patients in the form of medical devices.

heat stabilizers are the natural choice of processors. These stabilizers are also expected to provide final products high degree of clarity, good mechanical properties and excellent chemical resistance. Generally, for transparent applications, Calcium and Zinc based stabilizers are recommended to use.

Calcium Stearate and Zinc Stearate are the core stabilizing agents which are manufactured using plant-based stearic acid, calcium hydroxide and zinc oxide. Both of these ingredients can be used for food contact applications safely. But since these grades are to be used for medical applications, all raw materials used to manufacture stabilizers must be USP (US Pharmacopeia) compliant. Apart from metallic stearates, other organic and inorganic co-stabilizers are also used in the formulations. The inorganic stabilizers are mainly acid scavengers that restrict the release of toxic gases such as hydrochloric acid and organic co-stabilizers are used to improve the color hold and UV stability of the final product. Along with these stabilizers, many processors also use Epoxidized Soya-Bean Oil (ESBO) in the flexible compounds to improve heat stability and UV resistance of the final article. ESBO is also a bio-based product and can be used safely in all food contact or insertable parts of devices such as tubes.

Among all the plastics, Polyvinyl Chloride (PVC) is used in medical applications widely due to the unique combination of properties. PVC is an 'additive friendly' polymer, and with the help of various additives, it can be made either flexible or rigid, transparent, opaque or translucent. Other than these physical properties, PVC is durable, biocompatible and resistant to harsh chemicals. These properties may seem obvious at first glance, but it sets PVC apart from other materials if we look at it closely. For example, glass is very good for chemical resistivity and biocompatibility but there's a limitation due to the rigid and brittle nature of glass. It can't be used for all applications and careful handling is required. Whereas, PVC can replace glass in many applications as it not only provides required biocompatibility and chemical resistance but also the toughness of material in terms of mechanical properties and allows it to be used with little care. Similarly, PVC also gives an advantage over metal as it doesn't corrode and has great chemical resistance. Hence lipids, alcohol, acids and bases can be stored safely in a PVC container.

Moreover, PVC is being used in hospitals in the form of floorings and wall claddings in hygienic rooms. Hygienic surfaces need to be cleaned with various cleaning agents and due to chemical resistance, PVC claddings are preferred. The added advantages such as durability, low maintenance cost, and acoustic properties in the material, PVC is preferred by modern health care architects for the interior design of the hospitals. For such rigid applications, internal and external lubricants are also used in combination with the stabilizers to make processing easy.

Single-use medical applications of PVC like gloves, masks, sterile syringes, blood bags, IV bags, tablet packaging, are a game-changer. Sanitization is a constant challenge for the front line medical workers and historically multi-use medical devices were the main reason behind infections due to cross contaminations. Moreover, traditional sterilization facilities such as the use of ethylene dioxide, steam and autoclave were time-consuming. Whereas, new age sterilization techniques like gamma rays are very well suited for polymer-based medical equipment and can be sealed or made 'ready for use' in a very short time. PVC and its additives used in medical applications fulfill all the requirements of safety during the working period and retain the properties of the compound even after modern sterilization techniques.

The use of PVC and Ca-Zn based stabilizers is a sustainable solution. All single-use and multi-use articles can be recycled. Most material is transparent and made with premium grades of additives. Hence, once sterilized, it can be sold at a very good price to the recyclers. Secondly, in many other transparent applications, methyl tin stabilizers are used which are not compatible with Lead-based stabilizers. Since Ca/Zn stabilizers are primarily used in medical applications, the material can be recycled as Ca/Zn based stabilizers are compatible with all ingredients.

Since PVC is not stable when it is exposed to heat, the performance of PVC is largely dependent on the additives especially heat stabilizers. In the case of manufacturing medical devices, non-toxic and eco-friendly

Goldstab Organics manufactures Calcium-Zinc stabilizers which are designed particularly to provide excellent long-term retention of color, outstanding mechanical properties and a high level of weathering resistance. These products are widely accepted and appreciated all over the world due to ROHS and REACH compliance for flexible as well as rigid applications.

Industry Updates

Shri.Piyush Goyal asked the plastic manufacturing industry to aim to increase turnover

The plastic manufacturing Commerce and industry minister asked the plastic manufacturing industry to aim to increase their turnover to Rs 10 lakh crore from the present level of Rs 3 lakh crore in the next five years.

He said that dependence on using second hand machinery is not the way forward and that huge potential exists to increase the manufacturing of plastic machinery in India and reduce dependence on Imports

He said being is one of the biggest generator of employment in the country, it should now also aim to double the employment as well in five years time .Shri.Goyal asked the plastic industry participants to focus on quality and assured Bureau of Indian Standards would set up labs wherever needed to ensure best possible testing of plastic materials

Credit:ET Bureau

India's Plastic Waste Generation

Plastic waste generation has more than doubled in the last five years, with an average increase of 21.8%. A 2018-19 central pollution control, board study report puts India annual plastic waste generation at 3.3 million metric tons. Seven states – Maharashtra, Delhi, Karnataka, Uttar Pradesh, Gujarat, West Bengal and Tamil Nadu contribute to 66% of the country's total plastic generation.

And Goa, and Delhi's per capita plastic use is six times higher than the national average

According to CPCB 60% of plastic waste is recycled. Of this 70% is in registered facilities , 20%, is by the organized sector and 10% is at homes.

To its credit, India have several policy interventions to resolve plastic waste issue from the Plastic waste management rules 2016 which banned the use of plastics for sachets allowed only recyclable plastic , and introduced producer responsibility to collect plastic waste – to the 2018 announcement of phasing out of single use plastic by 2022,

Credit : HT

First investment by Reliance in the region strengthens ties between the UAE and India

Agreement advances progress at TA'ZIZ with continued strong local and international investor interest

Mumbai, December 7, 2021: Abu Dhabi Chemicals Derivatives Company RSC Ltd ("TA'ZIZ") and Reliance Industries Limited (RIL), have agreed to launch 'IA'ZIZ EDC & PVC', a world-scale chemical production partnership at the TA'ZIZ Industrial Chemicals Zone in Ruwais. The new Joint-venture will construct and operate a Chlor-Alkali, Ethylene Dichloride (EDC) and Polyvinyl Chloride (PVC) production facility. With an investment of more than \$2 billion representing the first production of these chemicals in the UAE, the project will enable the substitution of imports and the creation of new local value chains, while also meeting growing demand for these chemicals globally. The TA'ZIZ Industrial Chemicals Zone is a joint venture between Abu Dhabi National Oil Company (ADNOC) and ADA,

The project builds on ADNOC and Reliance's long-standing strategic partnership and is Reliance's first investment in the MENA region. The signing of the joint venture terms, which are subject to regulatory approvals, was witnessed by His Excellency Dr. Sultan Ahmed Al Jaber, UAE Minister of Industry and Advanced Technology and ADNOC Managing Director and Group CEO and Reliance Industries Chairman and Managing Director, Mr. Mukesh D Ambani. The joint venture terms were signed by Mr. Khaleefa Al Mheiri, Acting CEO of TA'ZIZ and Mr. Kamal Nanavaty, President Strategy and Business Development of Reliance Industries Limited.

Aruna Kumari from Reliance Industries reelected as chair of Asia Pacific Vinyl Network (APVN) for the year 2022

Asia Pacific Vinyl Network (APVN) general Assembly on November 18th 2021 reelected Ms. Aruna Kumari from Reliance Industries as chair for another one year and VCA chief executive Sophie Mac Millain was appointed as Vice Chair for two years. APVN is an association of the vinyl industry across Asia Pacific and shares information among members about the health safety and environmental aspects and performance of the vinyl industry in each country.



INDIAN VINYL COUNCIL

INDIAN VINYL COUNCIL

Admin. Office : 101/102, Terminal - 9 Building,
Nehru Road, Near Hotel Sahara Star, Vile Parle (East),
Mumbai - 400 099, Maharashtra. INDIA
Tel.: +91 22 67489899
Email ID : membership@indianvinylcouncil.com
Website: indianvinylcouncil.com

Reg. No. : GUJ/21190/Ahmedabad (Registrar of Societies)

MEMBERSHIP APPLICATION

Date of application: _____

Name of the organization : _____

Business Address : _____

City : _____ Pin : _____ State : _____

Tel. : _____ Email: _____ Website: _____

Factory Address (if applicable) : _____

City : _____ Pin : _____ State : _____

Tel. : _____ Email: _____ Website: _____

Date of Establishment

Category of Business (Please tick mark wherever applicable) (see page 3 and 4 for criteria of type of membership)

- Manufacturer of PVC resin Additives manufacturer Processor of PVC Equipment manufacturer
- Trader/Distributor Institution/Association Consulting firm Others

Annual Turnover of last financial year Rs.

Nature of business:

Name of Authorized Representatives	Designation	Specimen Signature	Mobile No	Email ID
_____	_____	_____	_____	_____

(Principle Member)

(Alternate Member)

Category of Membership Applied for (Please tick mark wherever applicable):

- Privilege Associate Donor

Name of the authorized Person: _____

SIGNATURE

FOR OFFICIAL USE

Received on:

Accepted at the Managing Committee Meeting held on

Sign of Hon. Secretary / Auth. Signatory

Send the filled form along with the cheque to :
Indian Vinyl Council, 101/102 terminal -9, Nehru Road, neat Hotel Sahara Star, Vile Parle (E) , Mumbai 400099 .India

FEE STRUCTURE

A) Privilege Members :Individuals in the Business of PVC, Corporate in PVC business , PVC compounders, PVC converters, PVC end product fabricators and any other company engaged in the field of PVC value chain or furthering the object of the Society, may be admitted as Privilege Member

Please tick as applicable category					
Turnover in INR --->	< 50 cr	50 - 100 cr	100 - 250 cr	250 - 1000 cr	> 1000 cr
Membership Fee	25,000	50,000	100,000	250,000	500,000
One Time Enrolment Fee	5,000	5,000	5,000	5,000	5,000
Total	30,000	55,000	105,000	255,000	505,000
Add GST 18%	5,400	9,900	18,900	45,900	90,900
Total	35,400	64,900	123,900	300,900	595,900
Less TDS @ 10% (for F/Y 21-22)	3000	5500	10500	25500	50500
Total Payable	32,400	59,400	113,400	275,400	545,400

B) Associate Member: Any society, association, chamber of commerce or other not-for-profit organization, trust, foundation etc. registered as per the applicable law and representing manufacturing industries, service providers, suppliers, end users, dealer etc. belonging to the Vinyl chain from the India, may be admitted as Associate Member of the Society

Membership Fee	10,000
One Time Enrolment Fee	5,000
Total	15,000
Add GST 18%	2700
Total	17700
Less TDS @ 10% (for F/Y 21-22)	1500
Total Payable	16200

Above mentioned are Annual fees and become due in April every year.

C) Donor Member: Individuals, firms, trusts, foundations, institutions, bodies corporate or associations supporting or desirous of supporting, or furthering the objects of the Society, may, on payment of the lump sum donations, as is fixed by the Society from time to time.

Donation will be accepted in multiples of Rs 1.0 Lakh and minimum of Rs 5.0 lakhs

PAN : AABTI7693E

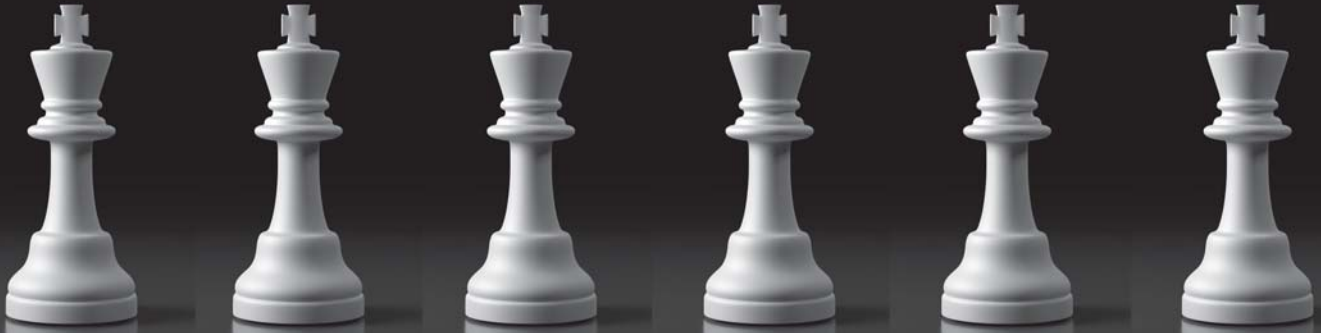
GSTIN : 24AABTI 7693 E1ZJ

VISIT OUR WEBSITE

www.indianvinylcouncil.com

**FOR ONLINE MEMBERSHIP
APPLICATION**

Privilege Members of IVC



1. Amisha Vinyls Private Limited
2. Baerlocher India Additives Private Limited
3. Basil Prompt Vinyl Private Limited
4. Bihani Manufacturing Company Private Limited
5. Caprihans India Limited
6. Deceuninck Profiles India Private Limited
7. Finolex Industries Limited
8. Goldstab Organics Private Limited
9. Indo-Reagens Polymer Additives Private Limited
10. Manish Packaging Private Limited
11. NCL Veka Limited
12. Ori-Plast Limited
13. Platinum Industries Private Limited
14. Quality Speciality Chemicals Limited
15. Reliance Industries Limited
16. The Supreme Industries Limited
17. Theysohn Extrusion
18. PVC Converters (India) Private Limited



INDIAN VINYL COUNCIL

Regd. Office :

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Ahmedabad, Gujarat -380006

Admin Office:

Terminal -9, Nehru Road, Near Hotel Sahara Star,
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T: 2267489888, F : 2267489898

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Visit our Website : www.indianvinylcouncil.com



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