



News Letter

A publication from IVC • VOL. 2 • ISSUE 4 • APRIL 2023

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Vinyl is an integral part
of our day to day life



From the desk of Editor

Published by Mr. Vivekanand Sane
on behalf of INDIAN VINYL COUNCIL,
1st Floor, Saffron Tower, Near Panchvati,
Ambawadi, Ahmedabad,
Gujarat -380006

Editor: Mr. Robin Banerjee

Editorial Board:
Mr. Vivekanand Sane
Dr. Shreekant Diwan
Mr. Rajeev Mehendale
Mrs. Aruna Kumari

IVC News Letter: Quarterly Publication of IVC

Contact: INDIAN VINYL COUNCIL (IVC)
101/102 Terminal -9, Nehru Road,
Near Hotel Sahara Star,
Vile Parle (East),
Mumbai - 400099 (India)
T: 2267489888,
F : 2267489898
E: info@indianvinylcouncil.com

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Plastic is one of the most malleable materials available to make and construct diverse things. Though plastic is a relatively recent discovery, it has single handedly changed the game of usage, due to its great attributes of usage and availability. Its versatility of creating from thin films to strong structures, makes it a material of choice and hard to beat.

There is no doubt that at the current times, plastic is the most preferred choice of thousands of industries. Be it packaging, bathroom fittings, utensils, pipes or toys, plastic becomes the automatic choice to make it from. It is polymers all the way.

Its robustness, strength and pliability has made plastic the number one choice to aid mankind to survive, progress and flourish.

Plastic production has risen from 2 Mln Tons in 1950, to around 400 Mln tons currently. This has created a global industry valued at over half a trillion dollars. It is expected that the industry will double its capacity by 2040.

However, there is one key downside, which creates a negative impact amongst the minds of many. Most of the plastic is not being recycled and is ending up in landfills or the ocean. Potential damage through microplastics is another worry area.

It is believed that in India, the industry is recycling about fifty percent of plastic being generated. The international number is much lower.

The answer to the polymer related problem is– recycling.

We will necessarily need to throw waste responsibly, collect it and recycle. The industry including our vinyl related businesses, will need to work on products which are recyclable. While all answers to this challenge may not be available today, we need to keep putting our heads together to make it happen.

In theory, vinyl is reusable, though not biodegradable. We need to all work towards making this world a circular economy. Fulfilling the extended producer responsibility-related obligations is a must for all of us in the industry.

Reducing waste, reusing and recycling our products, is the mantra for all of us to follow.

Be it plastic, polymer or vinyl, these are all essential ingredients to the modern human civilization. There is no substitute for these. But, if we become responsible for waste disposal, collection and reprocessing, the world will continue to remain a wonderful place to live in.

Robin Banerjee
Caprihans India Ltd.



You can write to us @ info@indianvinylcouncil.com

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, i.e. 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.

Corporate Talk

Mr. Jayen Modi
Managing Director,
Baerlocher India Additives Pvt. Ltd.



Interviewed by
Mr. Vivekanand Sane, President – IVC

Mr. Jayen Modi is the Managing Director of Baerlocher India Additives Pvt. Ltd. He holds a Master’s Degree in Organic Chemistry from Mumbai University and MBA from Jamnalal Bajaj Institute of Management Studies. He also holds other diplomas and has completed various management programs at IIM Ahmedabad.

Q1. How do you look at PVC as a material? What in your opinion is the future of PVC?

PVC is a highly versatile material and boasts of an impressive array of benefits, including exceptional durability, resistance to weathering and to various chemicals, and adaptability to a vast range of additives, making it an ideal choice for numerous applications in different end use sectors. From products of everyday use to critical application such as medical and healthcare, PVC’s properties have made it as material of choice in all walks of life.

When considering the total life cycle, PVC offers significant benefits v/s traditional materials including conservation of energy and natural resources and environmental protection. All of this is possible at affordable prices thereby bringing sustainable solutions to the masses.

As PVC approaches its 100th anniversary of commercial success, it is evident that the material will not only continue to be used in years to come but will experience healthy growth due to its technical superiority, versatility, sustainability, and economic viability.

Q2. The polymers sector including PVC was very badly affected by the COVID pandemic. What was the impact on the additives sector?

The COVID-19 pandemic had a profound impact on numerous industries worldwide, including the polymers sector. There were huge supply demand imbalances as the pandemic hit different regions with different intensities around the world impacting production, transportation, and distribution of many products.

The additive segment, which plays a crucial role in polymer industry, was no exception. The specific impact

on additives segment varied depending on several factors, including the type of additive, the end-use application and the regional market served.

Raw material shortages were rampant resulting in significant delays in availability, shipping and transportation delays further affected production and distribution of additives, leading to price volatility and supply chain commotions.

Despite these challenges, our additives segment displayed remarkable resilience. We quickly adapted to meet the changing needs of the market, sharpened our skills of inventory management, production planning and distribution network; thereby ensuring that no order was delayed, leave alone cancellation

Q3. How is the domestic PVC pipe industry’s response to phasing out of Lead based stabilisers?

As per the directive of Honourable National Green Tribunal (NGT), the Ministry of Environment, Forest, and Climate Change (MoEF&CC) has implemented a plan for the domestic PVC pipe sector to become Lead-free in a phased manner. While most of the large players of the industry quickly planned for compliance with the regulation, many medium and especially the small players were apprehensive due to prevailing myths about the alternative stabilizer systems. There were concerns about survival in a competitive pipe market.

In this scenario, we the stabilizer manufacturers stepped in to help dispel myths and provide guidance to support the transition. The pipe industry rose to the challenge and has put in significant efforts to prepare for the transition. We did our bit through education and handholding in enabling the PVC pipe sector to successfully adapt to the

change. A few large players are already leading the way and are completely Lead-free in all pipe applications. What is truly commendable is that several small and mid-sized pipe manufacturers are also in advanced stages of readiness to move ahead of the deadline.

Q4. A lot is being talked about replacement of PVC in various end use sectors. Is PVC really losing the market share in certain sectors?

PVC is on the cusp of celebrating 100 years of commercial success. Throughout its history, PVC has faced numerous challenges, including intense competition from other materials. Despite these obstacles, PVC has not only survived but has thrived, growing at rates that are comparable to other commodity polymers. This is only because of its technical superiority for meeting the end use requirements of the specific applications. The pandemic driven supply demand imbalances resulted in issues of both price and availability of PVC. As a result, some of the end-use sectors shifted to alternative materials. This situation is already changing fast, and PVC is regaining its position as the preferred material.

Specific to India, there have been announcements of new capacities in the country and with the assured supplies from the domestic sources – which is expected to happen by 2026 – Indian PVC industry is anticipated to see further growth well in excess of GDP growth rates.

Q5. PVC – a sustainable polymer using sustainable additives to give ‘green’ products to meet the end use requirements of various applications. What more can the industry do for sustainability?

Throughout its life cycle, PVC has demonstrated its sustainability as a polymer. The fields of polymer manufacturing, additives, and processing have all seen significant advancements towards achieving sustainability goals.

I think, it is now time for us to take this to the next level and focus on making the entire value chain more sustainable. This can be achieved by not only utilizing sustainable raw materials and additives, but also by using renewable resources, optimizing the usage of scarce

natural resources, rainwater harvesting, solar energy, reduce/ reuse materials wherever possible, and working towards making every stage in the value chain carbon neutral with zero waste discharge.

Finally, it is important that we also communicate the sustainable nature of PVC to all stakeholders with proper data so that our customers and end users can make educated choices to ensure a sustainable future for generations to come.

Q6. How do you compare the activities of associations in India vis-à-vis those in other parts of the world for the promotion of PVC?

The vinyl industry is supported by several associations around the world, playing a crucial role in promoting the use of PVC and addressing concerns related to production and use. While each association may have different goals and objectives, they share common activities such as providing technical guidance, sharing industry knowledge, hosting events, conducting research, advocating for policies, and promoting sustainability.

The members' voluntary commitment to achieving sustainable development goals is a vital aspect of these associations.

In India, various associations have been instrumental in contributing to the domestic vinyl industry's betterment and supporting its members. These associations' guidance has been immensely helpful for the sector, and a recent addition to this list is the Indian Vinyl Council (IVC), formed by industry members with a shared commitment to the vinyl sector's cause. IVC provides support for the industry members in most of the activities undertaken by global associations.

IVC aims to take up sustainability development activities and looks forward to more industry partners to join its ranks to promote PVC as a sustainable polymer.

Associations can only be successful with the support, and dedicated efforts by its members and wholehearted participation of all stakeholders. I would urge all vinyl industry associates to join IVC and contribute to build a better future for our future generations!

PVC and C-PVC pipe extrusion line selection criteria



Consumption of PVC polymer is the third largest after PE and PP in the world. In India more than 80% of PVC and C-PVC resin is consumed for pipes of different applications.

PVC and C-PVC resin are thermal sensitive polymers. Secondly PVC and C-PVC are not directly processable. PVC and C-PVC resin needs to be compounded with stabilizers, lubricants, processing aids and fillers.

Thermal sensitive property of PVC and C-PVC leads to the challenge to have good process control, good input material selection and most importantly, to have a good screw design. Process controls can be changed observing the performance and properties of the pipe. This can be done instantaneously. Input raw material can be tested with small quantities and selection can be done with various combination trials in a short span of time.

This is not the case with the extrusion lines. This needs meticulous study as once purchased, we cannot change the extrusion lines immediately. We are forced to compromise on the profits as well performance and properties of the finished product. The maximum profit can be achieved with 90 to 95+% capacity utilization of extrusion line with desired quality with cost optimization.

Twin-screw technology topped the experts' lists as the most significant extrusion development for the past 70 years. Commercial development dates to the late 1950s. Twin screw extruders have two intermeshing identical screws encased in a matching barrel. Screw & barrel can be parallel or conical. During twin screw extrusion, PVC / C-PVC is conveyed, compressed, de gassed, plasticated, sheared, kneaded, and fused at optimum level and homogenized before it enters the die. Fully intermeshing, counter rotating twin screw extruders are essentially positive displacement pumps and are designed for thermally sensitive polymers such as PVC or C- PVC. Full positive displacement cannot be achieved, due to clearance between screw flights and barrels. Hence, as the gap increases due to wear and tear, the output also decreases. Both parallel and conical screws are used for processing PVC and C-PVC.

Conical counter-rotating twin screw extruders were developed to create wider centre line distance to allow room for larger drive bearings on small twin-screws. Small parallel models had bearings that were too small and did not hold up under high load. Even today, conical counter rotating extruders are still the standard for small-to-medium-sized outputs for PVC and C-PVC extrusion lines. Conical extruder limitation comes when we need higher outputs which is more than 500 kg/hr. Gearbox becomes bulky and occupies more space. The development is compact thrust bearings has helped in development of parallel twin screw extruders for higher outputs.

In case of conical screw, the lower diameter in the metering section results in lower axial force on the screws. In conical extruders, plasticizing rate of PVC is mainly controlled by controlling temperature of screws and barrels, rather than by shear, which contributes to significantly lower amperage and higher power economy at higher rpm. Conical screw has controlled energy inputs through shear. On the other hand, in the metering section, the

intermeshing surface of the conical screws is less than the parallel screws. This provides lower shear energy inputs. Smaller diameter at the metering section further reduces the shear rate.

General considerations for Conical Vs, Parallel screws

1. Parallel screws lie so close that providing adequate thrust bearing is a problem. Obviously one screw shaft must extend beyond the other to accommodate appropriate thrust bearing. In the case of conical screws, this problem is solved due to more diameters at the feed end that provides wide spacing between the screws. This allows use of standard thrust bearings and simple, rugged distribution gear system.
2. Counter rotating conical extruders have large volume feed section that accommodates lower bulk density compound. This provides flexibility to handle a variety of compounds.
3. Over a period, due to wear and tear, the output in parallel screw decreases gradually. Whereas, in case of conical screws, the output can be maintained by periodically forwarding the screws.
4. As the polymer is plasticated, outward forces are applied to the screws. These forces increase with increasing polymer viscosity. The effect is that uneven forces are exerted on the screw shafts and bearings. Unbalanced forces acting on the screws do present a problem of deflection as the screws get longer. Conical twin screws have a distinct advantage as, a conical screw a more effective cantilever beam and resist bending better.
5. Compression zone provides a seal for the vent zone so that the powder is not drawn from the feed.

Thus, unwanted energy input into melt is avoided and pressure built up is achieved with less stress on the material. Lower shear rate means lower temp rise, and lower degradation. To minimize torque and wearing of screw and barrel, fusion of PVC / C – PVC is moved forward towards the metering zone. This is where the back pressure build-up takes place. As expected, the back pressure is directly related to the cross-sectional area of the metering zone of the screw.

Major points to be considered for selection of PVC extruder line

We all are aware that the major cost of any polymer product is raw material cost. The processor has least control over raw material price. One can optimize by well studying and forecasting PVC resin pricing trend. Processor only has control over the operating cost and this can be minimized by selection of most suitable twin screw extrusion line for PVC & C-PVC pipe production.

Points to be considered while selection of extrusion lines

1. Extruder main motor and gear box preferably should be directly coupled. This reduces the power loss due to belt slippage and recurring cost of belt replacement. This also reduces the maintenance down time.
2. Proper safety factor for gearbox. This will reduce the major down time due to failure of gearbox and extrusion line goes under maintenance for two to three weeks based on service availability.
3. The heart of extruder is screw and barrel. This is a highly specialized subject. The screw design is very important. Screw design help to reduce the cost of stabilizer and lubricant consumption. Well-designed screw will achieve better homogenization of PVC /C-PVC compound and gelation of PVC

/C-PVC compound at optimal cost. Screw is subjected to torsional force as well wear due to friction with PVC /C-PVC compound and barrel. Screw metallurgy is very important. Screw wear can also be slowed down by different wear resistance material coating. Screw wear is a major problem as this leads to reduction output and increase in power cost and all operating cost. This also could affect the inside surface quality of pipe and increase the heat stabilizer and lubricant consumption. Nitriding of screws have shorter screw barrel life compared with wear resistance coating on the screw. Long term prospective Nitrided screw is more expensive in case of higher output extruders.

4. Efficient chilled water spray in cooling tank will also contribute to higher output and will reduce the operating cost.
5. Achieving uniform thickness across cross section of pipe will help in raw material saving resulting in increased profit. This is possible with robust extrusion line which gives 90 to 95+% up time. Well-designed screw, die head and die bush mandrel design is required.

As we all know, the extrusion machine is a long-term asset to any

company. The cost of the machine is and will be a one-time investment which can in return save the production costs, production losses, savings in raw material, power and many other factors which are the main hidden costs to the company. To save these costs and have the best efficient machines for long term production, customers should select the best machines in the industry



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Industry Updates

APVN(Asia Pacific Vinyl Network) 2022:Annual Meeting Review

Mrs. Aruna Kumari (IVC member) the Chair of APVN conducted this international Annual meeting in Manila, Philippines.

Mrs.Aruna reports the discussion points and policies planning, advocating strongly for continued recognition of Best Environmental Practice for PVC by member countries of APVN.

APVN (Asia Pacific Vinyl Network) is an organization of Industries of Vinyl value chain in the Asia-Pacific region. Established in 1999, APVN is a legal entity registered in Japan as a limited liability non-profit corporation. Active members are from PVC resin manufacturers like Formosa, Shinetsu, TPC, Thai Vinyl, Engro, Reliance Industries, etc

Currently, around 20 organizations from 13 countries (including Australia, China, India, Indonesia, Japan. Korea, Malaysia, Pakistan, Philippines, Singapore, Thailand, Taiwan and Vietnam) are members of APVN. APVN has also developed global network with various associations/councils including the Global Vinyl Council (GVC), European Council of Vinyl Manufacturers (ECVM), Vinyl Institute (VI), Andeans PVC Forum, World Chlorine Council (WCC), that are working with the same goal.

In accordance with the current practice, APVN meetings are held annually. The location of the meeting is finalised based on rotational basis among all the member countries. The 2022 event was held in Manila, Philippines.

Highlights from member countries

Australia:

Australia is advocating strongly for continued recognition of Best Environmental Practice for PVC, a scheme originally developed by the Green Building Council of Australia in cooperation with the Vinyl Council and its members.

The new Green Star for Homes, a standard for residential buildings, require double glazed, thermally broken windows, which will further stimulate growth in this market.

Australia has launched a register of product certified for Best Environmental Practice PVC standard.

Korea:

The installation of plastic pipes in Korea is increasing steadily. 300mm or less diameter plastic pipes are mainly installed in the distribution and service network.

PVC products are for Mandatory Recycling from 1 Jan 2023

1. profile

2. flooring

3. pipe & fitting

4. cable for electric power/communication

Indonesia and Vietnam:

- Thai Industrial Standard Institute is enforcing the PVC Standard involved in Non-Lead Stabilizer i.e. PVC. Drinking Water Pipes (compulsory) and PVC Window Profiles (voluntary).

- The Revision Standard of PVC Portable Pipe (Lead-Free and compulsory) in Philippines has already been finalized.

- Majority Pipe Producers in Indonesia have shifted from Lead Stabilizer to Lead free ones, which cover more than 90% in the key big manufacturers and is now covering more than half of total pipe installation in Indonesia.

- Lead-Free pipe in Vietnam is on Voluntary basis, with about 60-70% currently being made by the major producers.

- Lead Replacement program in the ASEAN countries is now 70% implemented. Drinking Water pipe standard is fully enforced.

Taiwan:

- Taipei has banned beverage shops from providing single-use plastic drinking cups from 1st December 2022. The regulation will be implemented all over Taiwan by 31st December 2024.

- Taiwan is going to ban the production, import and sale of certain food which could be in contact with materials containing PVC from 1st July 2023. The ban applies to plate packaging materials, regulated recyclable containers and disposable tableware containing PVC, including those used for food, feed, dairy products, seasoning, fat and oil, drinking water, beverage and alcohol.

- Pharmaceuticals and health foods were also included in the banning scope of PVC packaging materials in the original draft. But due to the excellent gas barrier of PVC and the fact that there is no similar ban implementation elsewhere in the world, Pharmaceuticals and Health foods were finally excluded from the scope of the ban after APVN appealed to EPA.

Japan:

- Very interestingly Japan has the highest PVC recycling rate:

China:

- In 2022, China witnessed its PVC installed capacity growing at an accelerated rate, currently being 28 million tons. Ethylene PVC facilities are put into centralized production in East

China's coastal areas, with the proportion of the domestic ethylene-based PVC capacity has increased to 23%.

it mandatory for large producers of waste to reuse and recycle more.

Pakistan :

- “Think PVC” is the first of its kind display center for PVC-downstream products set up in Karachi to promote PVC as a ‘material of choice’ in the construction sector in Pakistan

Singapore

- By end 2022, all major businesses will have to report to the National Environment Authority, the type and the quantum of packaging they would put into the market. This step was pushed back from 2020 due to the pandemics.
- It's part of the mandatory reporting of packaging data and packaging reduction plans. This will include single-use plastic packaging. The recently introduced Sustainability Bill will make

India

- India team briefed on their lead replacement programs.
- New capacity expansion programs were briefed to the participants.



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Guidelines on Extended Producer Responsibility (EPR) for Plastic Packaging

SCHEDULE-II (PART II)

(Continued from earlier issue)

Plastic Waste Management Rule 2016 and compilation of amendments till date (Ref. Colour Code

As amended 27th March, 2018, As amended 12th August 2021, As amended 17th September 2021,

As amended 06th July 2022}, As amended 16th February 2022

- 8.0 Generation of surplus Extended Producer Responsibility certificates, carry forward and offsetting against previous year Extended Producer Responsibility targets and obligations, and sale and purchase of surplus Extended Producer Responsibility certificates:
- 8.1 A Brand Owner who has fulfilled their Extended Producer Responsibility targets, category-wise, can use the surplus for the following namely:
- i. Off setting previous year shortfall subject to clause 9.5;
 - ii. Carry forward for use in succeeding year;
 - iii. Sell it to other Producers, Importers & Brand-Owners.
- 8.2 Surplus in one category can only be used for off-setting, carry forward and sale in the same category. A surplus under reuse can be used for against reuse, recycling and also end of life disposal. A surplus under recycling can be used for recycling and end of life disposal. A surplus under end of life disposal cannot be used for reuse or recycle.
- 8.3 Producers, Importers & Brand-Owners can also meet their Extended Producer Responsibility obligations under a category by purchasing surplus Extended Producer Responsibility certificates from other Producers, Importers & Brand-Owners of the same category.
- 8.4 Such transactions shall be recorded and submitted by the Producers, Importers & Brand-Owners on the online portal while filing annual returns under the Extended Producer Responsibility framework. Central Pollution Control Board will develop mechanism for such exchange on the centralized portal.
8. Imposition of Environmental Compensation:
- 9.1 Environmental Compensation shall be levied based upon polluter pays principle, with respect to non- fulfilment of Extended Producer Responsibility targets by Producers, Importers & Brand Owners, for the purpose of protecting and improving the quality of the environment and preventing, controlling and abating environment pollution .
- 9.2 Central Pollution Control Board shall lay down guidelines for imposition and collection of environment compensation on Producers, Importers & Brand-Owners, recyclers and end of life processors, in case of non- fulfilment of obligations set out in these guidelines, and the same shall be notified. The Guidelines for Environmental Compensation shall be updated, as required.
- 9.3 The Environment Compensation, as applicable, shall be levied by Central Pollution Control Board on the Producers, Importers & Brand-Owners operating in more than two states with respect to non-fulfillment of their Extended Producer Responsibility targets, responsibilities and obligations in these guidelines.
- 9.4 The Environment Compensation, as applicable, shall be levied by respective State Pollution Control Board on the Producers, Importers & Brand-Owners operating in their jurisdiction (for Producers, Importers & Brand-Owners not operating in more than two states/Union Territory's), Plastic Waste Processors which includes recyclers and other waste processors – waste to energy, waste to oil, co-processors, with respect to non-fulfillment of their Extended Producer Responsibility targets or responsibilities and obligations set out under these guidelines. In case, the State Pollution Control Board or Pollution Control Committee does not take action in reasonable time, the Central Pollution Control Board shall issue directions to the State Pollution Control Board /Pollution Control Committee.
- 9.5 Payment of environmental compensation shall not absolve the Producers, Importers & Brand-Owners of the obligations set out in these guidelines. The unfulfilled Extended Producer Responsibility obligations for a particular year will be carried forward to the next year for a period of three years. In case, the shortfall of Extended Producer Responsibility obligation is addressed within three years. The environmental compensation levied shall be returned to the Producers, Importers & Brand-Owners as given below, namely
- (i) Within one year of levying of EC: 75% return;
 - (ii) Within two years 60% return;
 - (iii) Within three years 40% return,
- After completion of three years on environmental compensation getting due the entire environmental compensation amount shall be forfeited. This arrangement shall allow for collection and recycling of plastic packaging waste by Producers, Importers & Brand-Owners in later years as well.
- 9.6 The funds collected under environmental compensation shall be kept in a separate Escrow account by Central Pollution Control Board or State Pollution Control Board or Pollution Control Committee. The funds collected shall be utilized in collection, recycling and end of life disposal of uncollected and non-recycled or non- end of life disposal of plastic packaging waste, on which the environmental compensation is levied. Modalities for utilization of the funds for plastic waste management on an annual basis would be recommended by the Committee for Extended Producer Responsibility implementation and approved by the Competent Authority in the Ministry.

9. Role of Producers, Importers & Brand-Owners:

- 10.1 The Producers, Importers & Brand-Owners shall have to register through the online centralized portal developed by Central Pollution Control Board. The certificate of registration shall be issued using the portal.
 - 10.2 Producers, Importers & Brand-Owners shall provide Action Plan containing information on the Extended Producer Responsibility Target, category-wise, where applicable, through the online centralized portal developed by Central Pollution Control Board, along with application for registration or renewal of registration under Plastic Waste Management Rules, 2016. The Action Plan shall cover tenure of the Registration as per the provisions of Plastic Waste Management Rules, 2016. The standard operating procedure for registration and the action plan pro forma shall be developed by Central Pollution Control Board as per these guidelines.
 - 10.3 Brand Owner covered under clause 4 (iii) shall provide details of plastic packaging purchased from Producers and/or Importers covered under clause 4 (i) and 4 (ii) separately. The quantities attributed to each Producer and Importer covered under clause 4 (i) and 4 (ii) obligated upon Brand Owner shall be deducted from the obligation of Producers and Importers. The record of such purchase including category-wise quantity purchased, shall be maintained separately by Brand Owner.
 - 10.4 The Producers and Importers covered under clauses 4 (i) and 4 (ii) will maintain the record of the quantity of plastic packaging material made available to Brand Owner covered under clause 4 (iii). The record of such sale including category-wise quantity sold, will be maintained separately by Producers and Importers. In case such records are not maintained, they will have to fulfil the complete Extended Producer Responsibility obligation. The online platform shall cross-check the declaration of transactions among Producers, Importers & Brand-Owners.
 - 10.5 In order to develop a separate waste stream for collection of plastic packaging waste for directly fulfilling Extended Producer Responsibility obligations, the Producers, Importers & Brand-Owners may operate schemes such as deposit refund system or buy back or any other model. This will prevent mixing of plastic packaging waste with solid waste.
 - 10.6 The Producers, Importers & Brand-Owners shall file annual returns on the plastic packaging waste collected and processed towards fulfilling obligations under Extended Producer Responsibility with the Central Pollution Control Board or concerned State Pollution Control Board or Pollution Control Committee as per pro forma prescribed by Central Pollution Control Board by the 30th June of the next financial year. Information on the reuse and/or recycled content used for packaging purposes will also be provided.
10. Role of Plastic Waste Processors (Recyclers or Other Waste Processors including industrial composting facilities)
- 11.1 All plastic waste processors shall have to register with concerned State Pollution Control Board or Pollution Control Committee in accordance with provision 13(3) of Plastic Waste Management Rules, 2016 on the centralized portal developed by Central Pollution Control Board. Central Pollution Control Board shall lay down uniform procedure for registration within three months of the publication of these guidelines.
 - 11.2 The Plastic waste processors shall submit annual returns after end of every financial year by 30th April of the next financial year on the quantity of plastic waste processed category-wise as per prescribed pro forma on the centralized portal developed by Central Pollution Control Board.
 - 11.3 The total quantity of plastic waste processed by plastic waste processors and attributed to Producers, Importers & Brand-Owners, on an annual basis, will be made available on the centralized portal developed by Central Pollution Control Board as also on the website of Plastic waste processors.
 - 11.4 In case, at any stage it is found that the information provided by the plastic waste processor is false, the plastic waste processor shall be debarred by State Pollution Control Board, as per procedure laid down by Central Pollution Control Board, from operating under the Extended Producer Responsibility framework for a period of one year.
 - 11.5 Only plastic waste processors registered under Plastic Waste Management Rules, 2016, as amended, shall provide certificates for plastic waste processing, except in case of use of plastic waste in road construction. In case where plastic waste is used in road construction the Producers, Importers & Brand-Owners shall provide a self- declaration certificate in pro forma developed by Central Pollution Control Board. The certificate provided by only registered plastic waste processors shall be considered for fulfilment of Extended Producer Responsibility obligations by Producers, Importers & Brand-Owners.
 - 11.6 The pro forma for the certificate shall be developed by Central Pollution Control Board. In no case, the amount of plastic packaging waste recycled by the enterprise shall be more than installed capacity of the enterprise. The certificates will be for plastic packaging category-wise and shall include GST data of the enterprise.
 - 11.7 The certificate for plastic packaging waste provided by registered plastic waste processors shall be in the name of registered Producers, Importers & Brand-Owners or Local authorities, as applicable, based upon agreed modalities. Central Pollution Control Board will develop mechanism for issuance of such certificate on the centralized portal.
 - 11.8 The Plastic Waste Processors undertaking end-of-life disposal of plastic packaging waste viz. waste to energy, waste to oil, cement kilns (co processing) shall provide information on an annual basis as per prescribed pro forma, on the centralized portal developed by Central Pollution Control Board. These entities shall ensure the disposal of plastic packaging waste as per relevant rules, guidelines framed by regulatory bodies in an environmentally sound manner.
11. Role of Central Pollution Control Board
- 12.1 The Central Pollution Control Board shall register Producers, Importers & Brand-Owners who are operating in more than two states and plastic waste processors, through online portal. Central Pollution Control Board shall prescribe the standard operating procedure for registration of Producers, Importers & Brand-Owners under Plastic Waste Management Rules, 2016.

For details Refer Gazette

ANNEXURE

Examples for Clause 7

Extended Producer Responsibility Target and Minimum level of recycling of plastic packaging waste [Refer Clause 7.2 (a), (b) & (c), Clause 7.3 (a), (b) & (c), and Clause 7.4 (a), (b) & (c)]

Example 1:

Year 2022-23	
Plastic packaging introduced in the market category-wise (Category II Flexible plastic packaging)	100 MT
Extended Producer Responsibility Target @ 70 %	70 MT
Minimum level of recycling of plastic packaging waste collected under Extended Producer Responsibility - no threshold has been prescribed	Quantity of plastic packaging waste collected under Extended Producer Responsibility and recycled as per actuals Quantity of plastic packaging waste collected under Extended Producer Responsibility and used for energy recovery, co processing, road construction, waste to oil etc. as per actuals

Example 2:

Year 2024-25	
Plastic packaging introduced in the market category-wise (Category II Flexible plastic packaging)	100 MT
Extended Producer Responsibility Target @ 100 %	100 MT
Minimum level of recycling of plastic packaging waste collected under Extended Producer Responsibility @ 30%	Minimum 30 MT of plastic packaging waste collected under Extended Producer Responsibility needs to be recycled. Remaining plastic packaging waste collected (Maximum 70 MT) may be used for energy recovery, co-processing, road construction, waste to oil etc.

Example 3:

Year 2028-29	
Plastic packaging introduced in the market category-wise (Category II Flexible plastic packaging)	100 MT
Extended Producer Responsibility Target @ 100 %	100 MT

Reuse

[Refer Clause 7.4(b)] **Example 4:**

Year 2025 – 26 (Minimum obligation for reuse comes into effect)	
Plastic packaging introduced in the market category-wise (Category I Rigid Plastic Packaging)	100 MT
Reuse of Category	
l) rigid plastic packaging with volume or weight equal or more than 0.9 litres or kilogram's	14 MT (Reuse @ 15 %; minimum obligation for reuse 10 %)
b) Union Territory less than 4.9 litres or kilogram's	
Fresh plastic packaging introduced (A)	85 MT
Extended Producer Responsibility target for compliance @ 100% of (A)	85 MT
Minimum level of recycling of Category I plastic packaging waste collected under Extended Producer Responsibility @ 60%	Minimum 51 MT of plastic packaging waste collected under Extended Producer Responsibility needs to be recycled. A maximum of 34 MT plastic packaging waste collected may be used for energy recovery, co-processing, road construction, waste to oil etc.

Example 5:

For Year 2022-23	
Plastic packaging introduced in the market category-wise (Category I Rigid Plastic Packaging)	100 MT
Reuse of Category	
l) rigid plastic packaging with volume or weight equal or more than 0.9 litres or kilogram's	10 MT
b) Union Territory less than 4.9 litres or kilogram's	
Fresh plastic packaging introduced (A)	90 MT
Extended Producer Responsibility Target @ 35 % of (A)	31.5 MT

Use of recycled plastic content

[Refer Clause 7.2 (d), 7.3 (d)] Example 6:

Year 2025-26	
Plastic packaging introduced in the market category-wise (Category II Flexible plastic packaging)	100 MT
Extended Producer Responsibility Target as per clause 5.1	@ 100 % 100 MT
Minimum content of recycled plastic in packaging @ 10% plastic	10 MT of plastic content in the packaging should be recycled 90 MT of virgin plastic content in packaging

[F. No. 17/2/2001 – Part I - HSMD]
NARESH PAL GANGWAR, Addl. Secy.

Note :The principal rules were published in the Gazette of India, Extraordinary, Part II Section 3, Sub-Section (i) vide number G.S.R 320 (E) dated the 18th March, 2016 and subsequently amended vide notification numbers G.S.R 285 (E) dated the 27th March, 2018, G.S.R. 571 (E) dated the 12th August, 2021 and G.S.R. 647 (E) dated the 17th September, 2021.

FORMS –
Refer Gazette

Note: This PWM Rule is compiled by the **Dr. Priyank Arya, Founder Director, EHS Services (www.ehsservices.co.in, ehss.inquiry@gmail.com)** based on available PWM Rules for your better understanding. Before taking any action or decision, kindly refer to the original PWM Rules as published by MOEFCC/CPCB time to time.

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FOR REPORTS & NEWS



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 GST No.

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

Figures in Rupees

Please tick as applicable category					
Company Turnover	0-100 Cr	100-250 Cr	250-500 Cr	500-1000 Cr	1000+ Cr
ADMISSION CHARGE	5000	5000	5000	5000	5000
ANNUAL MEMBERSHIP FEE	25000	50000	75000	100000	250000
TOTAL	30000	55000	80000	105000	255000
ADD GST (18%)	5400	9900	14400	18900	45900
TOTAL	35400	64900	94400	123900	300900
LESS TDS (10%)	3000	5500	8000	10500	25500
TOTAL PAYABLE	32400	59400	86400	113400	275400

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

Figures in Rupees

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

VISIT OUR WEBSITE

www.indianvinylcouncil.com

**FOR ONLINE MEMBERSHIP
APPLICATION**

Privilege Members of IVC



- 1 Amisha Vinyls Private Limited
- 2 Asia Pacific Vinyl Network
- 3 Baerlocher India Additives Private Limited
- 4 Basil Prompt Vinyl Private Limited
- 5 Bharat Milling Industries
- 6 Bihani Manufacturing Company Private Limited
- 7 Caprihans India Limited
- 8 Deceuninck Profiles India Private Limited
- 9 Encraft India Private Limited
- 10 Finolex Industries Limited
- 11 Goldstab Organics Private Limited
- 12 Indo-Reagens Polymer Additives Private Limited
- 13 Karan Polymers Pvt. Ltd
- 14 Lubrizol
- 15 Manish Packaging Private Limited
- 16 NCL Veka Limited
- 17 Ori-Plast Limited
- 18 Pioneer Polyleathers Private Limited
- 19 Platinum Industries Private Limited
- 20 Prabhu Poly Pipes Ltd
- 21 PVC Converters (India) Private Limited
- 22 Reliance Industries Limited
- 23 Sun Ace Chemical India (Private) Limited
- 24 The Supreme Industries Limited
- 25 Theysohn Extrusion
- 26 Vihan Engineering Private Limited



INDIAN VINYL COUNCIL

Regd. Office :

1st Floor, Saffron Tower, Near Panchvati, Ambawadi,

Ahmedabad, Gujarat -380006

PAN : AABTI7693E

GSTIN : 24AABTI 7693 EIZJ

Admin Office:

Terminal -9, Nehru Road, Near Hotel Sahara Star,

Vile Parle (E), Mumbai - 400099 (India)

T: 2267489888, F : 2267489898

E: info@indianvinylcouncil.com

Visit our Website : www.indianvinylcouncil.com



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