



News Letter

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Vinyl is an integral part
of our day to day life



From the desk of Editor

During the recent past, the world is under attack from repeated storms – two-year pandemics, an uncalled-for war since February 2022, and now the fear of inflation, recession and concomitant economic slow-down. India however seems yet broadly isolated from the global vagaries and is somehow holding-on to its growth projections of 7 percent for this current financial year, being one of the best amongst the large economies.

While the global industry is facing many turmoil, Indian industry is facing another challenge. The Indian Government is continuing its fight against certain forms of plastics which is believed to pollute our environment – and especially the single-use and thinner varieties of plastics. In line with the broader thinking of making the earth greener and sustainable, the government has issued guidelines requiring phasing out of certain types of single-use plastic products. By this year end, carry-bags are required to be over 120 microns.

Certain single-use plastic items usage has now been discontinued. These include wrapping or packaging films around sweet boxes, invitation cards, cigarette packets, banners less than 100-micron thickness, stirrers, plastic cutlery and straws.

The MIT Technology Review issued its second edition of Green Future Index 2022 showing comparative rankings of 76 nations on their ability to develop a sustainable, green and low-carbon future. With Iceland leading the pack, India has been ranked 42nd. A better ranking means the country embraces sustainability through actions such as recycling. India's ranking is obviously not encouraging

Earlier this year, UK introduced an environment tax, where businesses like food packaging, using 10 tonnes or more a year of plastic packaging that contains less than 30 per cent recycled plastic, will be taxed at £200 a tonne. Another novel way to encourage use of recycled material, and make the world more sustainable.

The Indian Vinyl Council have been advocating - plastics is not a bad word. It is however important to use and dispose it off, responsibly. Our council is doing everything possible to practice, promote and preach, responsible behaviour of its key ingredient and output, the PVC.

In the meantime, over the last three months or so, PVC global prices have started sliding down, after touching all time high levels about a year back. The wild fluctuations have been rather unique in the history of PVC. Global recessionary conditions have added to the ambiguity of its future pricing prognosis.

PVC is an important ingredient in the lives of the mankind. Replacing it, is an impossibility. However, we need to definitely make our mother earth sustainable and green. Let us all use this important material – PVC – responsibly, rationally and through recyclability.

Robin Banerjee
Managing Director
Caprihans India Ltd.



You can write to us @ info@indianvinylcouncil.com

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

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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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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

Shri. Shreevallabh G. Kabra
Chairman & Managing Director
Kolsite Group

Interviewed by Dr. E Sundaresan
Secretary General of IVC



Kolsite Group, a leader in Plastic Extrusion Machineries in India, commenced its operations in 1962. The group is known for being the pioneer of various technologically advanced plastic extrusion solutions. Kolsite group under its roof has 4 flagship companies dealing in different avenues like Extrusion Machinery, Master Batches, Secondary packaging, and Agency work.

Over the last 5 decades, SV Kabra has been the driving force behind the growth of Kolsite Family. He began this business in early 1960s with a clear vision and foresight of becoming the leading company for plastics extrusion machinery & Equipment. Since then, he has guided the company to be the flag-bearer of Plastics Extrusion in India & overseas.

SV Kabra has done BA in Economics (Honours) from Mumbai University. He was awarded with the Outstanding Achievement Award at Vinyl India 2013 conference.

1. Kabraji, 1962 was the year, you left traditional business and ventured into the plastics industry. Could you kindly enlighten us, in short, your journey so far and what made you venture into plastic processing machinery manufacturing?

1962 was the year, when Kolsite Group commenced its operations at a small factory in Tardeo that had a total area of 800 square feet. During that time, the industry was at a very nascent stage, and while processing we faced various issues with the available machineries. Hence, we decided to venture into manufacture of machineries for plastic extrusion. I visualized that to make technological advancement, it will be highly crucial. Hence, we strategically decided to enter into a joint venture with Battenfeld Extrusionstechnik (BEX) and India got its 1st high output twin screw extruder. The industry being in the nascent stage then, the group began by manufacturing machines of low output with the available resources. But with a keen eye on the rapidly changing trends and realizing the potential of plastic industry, the group entered into joint ventures with the Global players of this field to soon become a leader in Plastic Extrusion Machinery in India. Since then, we have pioneered various technologically advanced plastic extrusion plants.

2. Coming to the PVC pipe extrusion, Indian machinery manufacturers have more than 70% share in local market. Many extruders are also getting exported.

According to you how competitive is the Indian machinery manufacturer in the international markets. What initiatives and policies do you think the Government of India should take to make Indian machineries increase their share in the global market?

We are losing some of the international markets on account of cheap prices of the Chinese machinery manufacturers. I do not think that much can be done. Our Extrusion machines are better in technology and our after-sales service have been unbeatable. Therefore there is not much that government can take do. However the policy of 'Atmanirbhar Bharat' can go a long way to face the challenges of Chinese machinery manufacturers.

3. What is the main suggestion you have to meet the challenges from Chinese imports of the machineries?

The main suggestion is that the government should consider reducing import duty on components and bring it at par with imported machineries. This will make India made equipment, more competitive.

4. Does second hand machinery imports affect adversely your industry? If so, what needs to be done?

As regards Import of second hand machineries, in general we have represented to government on various platforms about imposing 50% import duty in order to discourage such imports.

5. Large quantities of finished products are imported especially Profiles and Fittings. What are your views how to make India, the power-house of plastic processing?

The government is already looking after imports in huge quantities of finished products such as profiles and fittings. To make India the power house of plastic processing, this could be done in a phase manner, however it is going to take time.

6. What are your views on emerging processing technologies like OPVC in pipe sector and the opportunities for Indian machinery manufactures?

As regards to emerging processing technology like OPVC in pipe sector, there is a definite performance advantage over conventional pipes in view of exceptional strength, ductility and high impact resistance. We are happy to inform that we are already supplying parts of post extrusion equipment and we tied up with M/s. MOLECOR with their technology.

7. PVC fittings are the integral part of pipes Installation. Do you feel the machinery sector can match the challenges of the Pipes and Fittings industry, in the changing global conditions, especially in India?

PVC fittings are the integral parts of pipe installation and we feel that Indian machinery manufacturers have enough capacity with latest know-how and therefore this should not be considered as a challenge.

8. Jal Mission Ministry has many water management projects. In this mission, Plastic pipes would play a vital role. As a machinery manufacturer, what shift you have observed in the selection of Extruders by the processing industry?

As regards Jal mission ministry of “Har Ghar Nal and Har Ghar Jal”, we have seen that the demand for HDPE pipes going up in all sizes, small and as well as large.

9. As one of the pillars for the formation of Plastic Machinery Manufacturer Association of India (PMMAI), according to you what role PMMAI will

play in the Indian Plastic Sector?

PMMA is working hard to convince the government about the important role our members are playing in this sector, making it competitive in the global level and also the significant benefits of our initiatives to the plastic processing sector. We have already taken some projects of common purchase and extending these facilities to many other items which are of mass consumption.

10. What is your take on the current and future manpower skill needs in plastic machinery and processing sectors?

The manpower requirements are mainly for semi-skilled and skilled sectors and it is an ever growing demand which is a concern to the industry. As a matter of fact, sometimes we find difficulties getting the right people. I understand that the Skill Development Councils of the concerned Ministry for both plastic processing and machinery sector, are addressing these issues in a broader platform.

11. Battrix is the future technologies division of Kabra Extrusion, dedicated to developing and producing green energy systems and solutions. How do you envision the growth of this sector?

Battrix is the future technologies division of Kabra Extrusiontechnik Ltd that will power the growth of India’s transition into green energy storage and electric transportation. These noble objectives are epitomized by the brand’s flagship product – advanced lithium-ion battery packs and modules for e-vehicles.

I foresee tremendous growth potential to this technology and domination of e-vehicles on Indian roads in the coming years. Power efficiency and long service life will be the success factor to battery packs. Battrix has technologically partnered with a renowned European player, thereby benefitting from a patented design and manufacturing process. The brand stands tall with state-of-the-art facilities for design, development and production in Chakan, Pune. The facility comprises of complete manufacturing, testing and validation equipment sourced from leading global players.

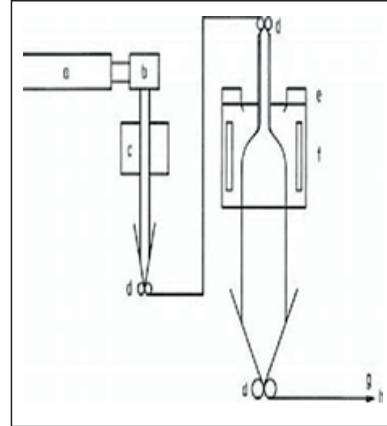
Process Technology: PVC shrink Film by Blown Film Process



Mr. Yashodhan Kanade,
M. Tech, FIPI
PVC Technologist
yashodhankanade@yahoo.co.in

Calendaring is the process of squeezing plastic melts between two or more counter rotating rolls to form a continuous film and sheet. It is commonly used for shaping high melt viscosity thermoplastic sheets and is particularly suitable for polymers susceptible to thermal degradation or containing substantial amounts of solid additives. This is due to the fact that calendars can convey large rates of melt with a small mechanical energy input.

Why PVC shrink film needs two bubbles?



A Flow Diagram of PVC double bubble Shrink Film process

Introduction:

Shrink film is made by orienting the polymer film at suitable temperature, followed by quenching to freeze the stresses. Any blown film will shrink to some extent on heating. However, the development of technique of deliberate introduction of orientation during processing is mainly responsible for the rapid growth of shrink films.

Virtually any thermoplastic can be oriented: be it amorphous polymers like – PS or PVC, or semi crystalline polymers like – LDPE or PP. PVC is predominantly an amorphous polymer; on the other hand, PE is a semi-crystalline polymer. Hence their techniques of orientation are different. PVC shrink film is produced by double bubble blown film extrusion. On the other hand, PE shrink film is produced by single bubble blown film extrusion.

The orientation criteria:

To impart shrinkability in the plastic film, it must be oriented in viscoelastic state, at specific temperature. For amorphous polymers, the orientation temperature is slightly above T_g , while, for semicrystalline polymers the orientation temperature is slightly above T_m . The stresses generated by orientation are frozen by quenching the oriented film. On reheating, the oriented films shrink around the object to be packed.

Orientation requirements for PVC:

PVC is predominantly an amorphous polymer. The extent of primary crystalline structure formed during polymerization is between 3-7%. These primary crystallites have melting range of 105-260°C due to imperfections and irregular shapes.

PVC has a unique feature that its mechanical properties are developed as a result of optimum fusion that takes place between 180 – 190°C in the processing equipment. The primary crystallites having melting points of up to 190°C are melted during processing, releasing PVC chains to get entangled (fusion). These crystallites are not reformed again. Secondary crystallites are formed if the product is annealed above T_g .

However, in order to freeze the oriented stresses, PVC shrink film is quenched. Hence formation of secondary crystallites is deprived and the product is predominantly amorphous.

For rigid PVC film, the orientation temperature would be slightly above its T_g (T_g of virgin PVC is around 80°C). In reality, due to additives like polar lubricants, primary or secondary plasticizers, T_g is reduced to 75°C. Therefore, the orientation temperature for PVC shrink film is usually 80°C. This is achieved through a hot water bath maintained at 80° C or hot air chamber.

In order to get mechanical properties through optimum fusion, PVC has to be processed at 180-190°C. The blown film thus emerging out of the circular die is at 180°C. The blow-up ratio is purposely kept slightly above one. This film is cooled with air from cooling ring with minimal orientation. This is achieved in the first bubble. In order to orient the film, its temperature must be brought slightly above its T_g , around 80°C. This is achieved by blowing the film second time in water bath maintained at appropriate temperature to introduce desired orientation in TD that is restricted by touching the inner wall of sizer. Simultaneously, desired orientation in MD is achieved through nip rollers speed. The oriented film is simultaneously quenched to freeze the orientation. This is done in the second bubble. Usually, it is recommended to use lower K value PVC for thinner films and higher K value PVC for thicker films.

Applications



Typical Applications of Shrink Film
A representative picture of typical usage of Shrink Films included for knowledge. There is no intention to copy, infringe on the marketed products.
Source: social media

PVC shrink film is one of the most commonly used shrink packaging materials in the world, and this is primarily due to the fact that it is lightweight and inexpensive. The main qualities of PVC are that it is highly durable, has easy sealing and shrinking features, and it can be used on heat sensitive products. Besides decorating the bottle / container, it provides glossy look to the product due to excellent quality of the sleeves compared to conventional type of paper-labels. Excellent transparency, high shrinking capability at lower temperature and excellent printability, makes it ideal choice. It is used in a wide variety of industries including food, pharmaceutical, construction, chemical, healthcare and many others.

Industry Updates

Plastic Waste Management Rule

Ministry of Environment, Forest and Climate Change has made detailed notification on Plastic Waste Management rule. The first gazette on this was issued in March 2016. This has gone through many amendments in view of the expert opinions and recommendations given by industry and various associations.

To the benefit of our members we are reproducing the document, a compilation of all these amendments in consolidation which is originally published by EHS Services.

The editorial board re-edited this document with permission and will be publishing the same in parts 1&2 in IVC News Letter. You are requested to refer original PWMR published by MOEFCC time to time for details.

Some of the major points in the Waste Management Rules are:-

In order to phase out the use of certain single-use plastic products and to start enhancing the thickness of plastic carry bags to over 120 microns by December 31, 2022, the Union Ministry of Environment issued the Plastic Waste Management (Second Amendment) Rules, 2022, to amend an earlier guideline issued in March 2016.

The rules define biodegradable plastics, provide a statutory framework for their use as an alternative material, and specify levying of penalties or environmental compensation under the "Polluter Pays" principle, on industries who do not comply with the rules.

It states that the biodegradable plastics mean plastics other than compostable plastics, which undergo degradation by biological processes under ambient environment (terrestrial or in water) conditions.

As a transitory measure, provisional certificates for biodegradable plastics will be issued by the Central Pollution Control Board in cases where an interim test report is submitted to prove biodegradability. The provisional certificate shall be valid till June 30, 2023.

It also provides that the name, registration number of the producer or brand owner and the thickness in case of carry bags and plastic packaging will have to be mentioned. This provision will not apply in case plastic packaging is used for imported goods. It may be noted that this labelling provision was earlier only applicable for plastic carry bags but now it has been extended to cover all plastic packaging.

The ministry clearly states that the second amendment rules align with those of the Guidelines on Extended Producer Responsibility on plastic packaging issued earlier this year.

The phasing out single-use plastic items from July 1 include wrapping or packaging films around sweet boxes, invitation cards, and cigarette packets, plastic or PVC banners of less than 100-micron thickness, stirrers, plastic cutlery, straws, plastic sticks for balloons, etc.

The manufacturing, import, stocking, distribution, sale, and use of these single-use plastics, including polystyrene and expanded polystyrene commodities, have also been prohibited.

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MINISTRY OF ENVIRONMENT, FOREST AND CLIMATE CHANGE NOTIFICATION

SCHEDULE-I

Plastic Waste Management Rule 2016 and compilation of amendment still date (Ref. Colour Code)

Published 18th March, 2016,

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 (Ref. Schedule II will be published in next volume)

Reproduced from the publication of EHSS (Environment, Health & Safety Services) Edited with Permission. kindly refer to the original PWM Rules as published by MOEFCC/CPCB time to time for the full details

G.S.R. 320(E).—Whereas the Plastic Waste (Management and Handling) Rules, 2011 published vide notification number S.O 249(E), dated 4th February, 2011 by the Government of India in the erstwhile Ministry of Environment and Forests, as amended from time to time, provided a regulatory frame work for management of plastic waste generated in the country;

In exercise of the powers conferred by sections 3, 6 and 25 of the Environment (Protection) Act, 1986 (29 of 1986), and in supersession of the Plastic Waste (Management and Handling) Rules, 2011, except as respects things done or omitted to be done before such supersession, the Central Government hereby makes the following rules, namely:-

1. **Short title and commencement.**- (1) These rules shall be called the Plastic Waste Management Rules, 2016.
 - (1) Save as otherwise provided in these rules, they shall come into force on the date of their publication in the Official Gazette.
2. **Application.**-
 - (1) These rules shall apply to every waste generator, local body, Gram Panchayat, manufacturer, Importers brand-owner, "plastic waste processor (recycler, co-processor, etc.) and producer.
 - (2) The rule 4 shall not apply to the export oriented units or units in special economic zones, notified by the Central Government, manufacturing their products against an order for export: Provide this exemption shall not apply to units engaged in packaging of gutkha, tobacco and pan masala and also to any surplus or rejects, left over products and the like.
3. **Definitions.** - In these rules, unless the context otherwise requires. -
 - a. "Act" means the Environment (Protection) Act, 1986 (29 of 1986);
 - ab. "alternate use" means use of material for a purpose other than for which it was conceived, which is beneficial because it promotes resource efficiency;
 - ac. "Biodegradable plastics" means that plastics, other than compostable plastics, which undergoes degradation by biological processes under ambient environment (terrestrial or in water) conditions, without leaving any micro plastics, or visible, or distinguishable or toxic residue, which has adverse environment impacts, adhering to laid down standards of Bureau of Indian Standards and certified by Central Pollution Control Board.
 - b. "brand owner" means a person or company who sells any commodity under a registered brand label or trademark;
 - c. "carry bags" (covered under Category II of plastic packaging – Clause (5.1) (II), given in Schedule – II) mean bags made from plastic material or compostable plastic material, used for the purpose of carrying or dispensing commodities which have a self-carrying feature but do not include bags that constitute or form an integral part of the packaging in which goods are sealed prior to use;
 - d. "commodity" means tangible item that may be bought or sold and includes all marketable goods or wares;
 - e. "compostable plastics" mean plastic that undergoes degradation by biological processes during composting to yield CO₂, water, inorganic compounds and biomass at a rate consistent with other known compostable materials, excluding conventional petro-based plastics, and does not leave visible, distinguishable or toxic residue;
 - f. "consent" means the consent to establish and operate from the concerned State Pollution Control Board or Pollution Control Committee granted under the Water (Prevention and Control of Pollution) Act, 1974 (6 of 1974), and the Air (Prevention and Control of Pollution) Act, 1981 (14 of 1981);
 - g. "disintegration" means the physical breakdown of a material into very small fragments;
 - ga "End of Life disposal" means using plastic waste for generation of energy subject to relevant guidelines in force, which includes co-processing (e.g. in cement, steel or any other such industry) or waste to oil, except in cases where feedstock chemicals are produced for further use in the production of plastic which may then be considered

under recycling or for road construction as per Indian Road Congress guidelines etc.”

- gb “energy recovery” means energy recovery from waste that is conversion of waste material into usable heat, electricity or fuel through a variety of processes including combustion, gasification, pyrolysis, anaerobic digestion & landfill gas recovery”;
- h. “**extended producer’s responsibility**” means the responsibility of a producer for the environmentally sound management of the product until the end of its life;
- i. “**food-stuffs**” mean ready to eat food products, fast food, processed or cooked food in liquid, powder, solid or semi-solid form;
- j. “**facility**” means the premises used for collection, Storage, recycling, processing and disposal of plastic waste;
- k. “**importer**” means a person who imports plastic packaging or products with plastic packaging or carry bags or multilayered packaging or plastic sheets or like;
- l. “**institutional waste generator**” means and includes occupier of the institutional buildings such as building occupied by Central Government Departments, State Government Departments, public or private sector companies, hospitals, schools, colleges, universities or other places of education, organisation, academy, hotels, restaurants, malls and shopping complexes;
- m. “**manufacturer**” means and include a person or unit or agency engaged in production of plastic raw material to be used as raw material by the producer.
- na. **Non-woven plastic bag:** Non-woven plastic bag is made up of plastic sheet or web structured fabric of entangled plastic fibers or filaments (and by perforating films) bonded together by mechanical or thermal or chemical means and the “Non-woven fabric” means a flat or tufted porous sheet that is made directly from plastic fibres, molten plastic or plastic films.
- n. “**multi-layered packaging**” means any material used or to be used for packaging and having at least one layer of plastic as the main ingredients in combination with one or more layers of materials such as paper, paper board, polymeric materials, metalized layers or aluminum foil, either in the form of a laminate or co-extruded structure;
- oa. “**Plastic Packaging**” means packaging material made by using plastics for protecting, preserving, storing, and transporting of products in a variety of ways;
- o. “**plastic**” means material which contains as an essential ingredient a high polymer such as polyethylene terephthalate, high density polyethylene, Vinyl, low density polyethylene, polypropylene, polystyrene resins, multi-materials like acrylonitrile butadiene styrene, polyphenylene oxide, polycarbonate, Polybutylene terephthalate;
- p. “**plastic sheet**” means Plastic sheet is the sheet made of plastic;
- qa. “**Plastic Waste Processing**” means any process by which plastic waste is handled for the purpose of reuse, recycling, co-processing or transformation into new products.
- qb. “**Plastic Waste Processors**” means recyclers of plastic waste as well as and entities engaged in using plastic for energy (waste to energy) including in coprocessing or converting plastic waste it to oil (waste to oil) except in cases where feedstock chemicals are produced for further use in the production of plastic which may then be considered under recycling, industrial composting;
- qc. “**Post-consumer plastic packaging waste**” means plastic packaging waste generated by the end-use consumer after the intended use of packaging is completed and is no longer being used for its intended purpose;’
- q. “**plastic waste**” means any plastic discarded after use or after their intended use is over;
- ra. “**Pre-consumer plastic packaging waste**” means plastic packaging waste generated in the form of reject or discard at the stage of manufacturing of plastic packaging and plastic packaging waste generated during the packaging of product including reject, discard, before the plastic packaging reaches the end-use consumer of the product;
- r. “**prescribed authority**” means the authorities specified in rule 12;
- sa. “**Recyclers**” are entities who are engaged in the process of recycling of plastic waste;’
- s. “**producer**” means persons engaged in manufacture or import of carry bags or multi-layered packaging or plastic sheets or like, and includes industries or individuals using plastic sheets or like or covers made of plastic sheets or multi-layered packaging for packaging or wrapping the commodity;
- t. “**recycling**” means the process of transforming segregated plastic waste into a new product or raw material for producing new products;
- (ua) “**Reuse**” means using an object or resource material again for either the same purpose or another purpose without changing the object’s structure;
- u. “**registration**” means registration with the State Pollution Control Board or Pollution Control Committee concerned, as the case may be;
- va. “**Single-use plastic commodity**” means a plastic item intended to be used once for the same purpose before being disposed of or recycled.

- vb. **“Thermoset plastic”** means a plastic which becomes irreversibly rigid when heated, and hence cannot be remoulded into desired shape.
 - vc. **“Thermoplastic”** means a plastic which softens on heating and can be moulded into desired shape.
 - v. **“street vendor”** shall have the same meaning as assigned to it in clause (l) of sub-section (1) of Section 2 of the Street Vendors (Protection of Livelihood and Regulation of Street Vending) Act, 2014 (7 of 2014);
 - w. **“local body”** means urban local body with different nomenclature such as municipal corporation, municipality, nagar palika, nagar nigam, nagar panchayat, municipal council including notified area committee (NAC) and not limited to or any other local body constituted under the relevant statutes such as gram panchayat, where the management of plastic waste is entrusted to such agency;
 - wa. **“Use of recycled plastic”** means recycled plastic used as raw material, instead of virgin plastic, in the manufacturing process;
 - x. **“virgin plastic”** means plastic material which has not been subjected to use earlier and has also not been blended with scrap or waste;
 - y. **“waste generator”** means and includes every person or group of persons or institution, residential and commercial establishments including Indian Railways, Airport, Port and Harbour and Defence establishments which generate plastic waste;
 - z. **“waste management”** means the collection, storage, transportation reduction, re-use, recovery, recycling, composting or disposal of plastic waste in an environmentally safe manner;
 - aa. “waste pickers” mean individuals or agencies, groups of individuals voluntarily engaged or authorised for picking of recyclable plastic waste.
 - aab. **“Waste to Energy”** means using plastic waste for generation of energy and includes co-processing (e.g. in cement kilns, steel or any other such industry);
4. **Conditions.** (1)- The manufacture, importer stocking import, stocking, distribution, sale and use of carry bags, plastic sheets or like, or cover made of plastic sheet and multi-layered packaging, shall be subject to the following conditions, namely:-
- a. Carry bags and plastic packaging shall either be in natural shade which is without any added pigments or made using only those pigments and colorants which are in conformity with Indian Standard: IS 9833:1981 titled as “List of pigments and colorants for use in plastics in contact with foodstuffs, pharmaceuticals and drinking water”, as amended from time to time;
 - b. Carry bags made of recycled plastic or products made of recycled plastic can be used for storing, carrying, dispensing or packaging ready to eat or drink food stuff subject to the notification of appropriate standards and regulation under the Food Safety and Standards Act, 2006 (34 of 2006) by the Food Safety and Standards Authority of India;”.
 - c. Carry bag made of virgin or recycled plastic, shall not be less than fifty microns one hundred and twenty (120) with effect from 30.9.2021 in thickness; **seventy five microns in thickness with effect from the 30th September, 2021 and one hundred and twenty (120) microns in thickness with effect from the 31st December, 2022”**
 - d. Plastic sheet or like, **which is not an integral part of multi-layered packaging** and cover made of plastic sheet used for packaging, wrapping the commodity shall not be less than 50 microns in thickness except **as specified by the Central Government** where the thickness of such plastic sheets impair the functionality of the product;
 - e. The manufacturer shall not sell or provide or arrange plastic to be used as raw material to a producer, not having valid registration from the concerned State Pollution Control Boards or Pollution Control Committee;
 - f. Sachets using plastic material shall not be used for storing, packing or selling gutkha, tobacco and pan masala;
 - g. Recycling of plastic waste shall conform to the Indian Standard: IS 14534:1998 titled as Guidelines for Recycling of Plastics, as amended from time to time;
 - h. The provision of thickness shall not be applicable to carry bags and commodities made up of compostable plastic and biodegradable plastics carry bags or commodities of both made from compostable plastics shall conform to the Indian Standard: IS/ISO 17088:2008/2021 titled as Specifications for Compostable Plastics, as amended from time to time. The manufacturers or seller of compostable plastic and biodegradable plastics carry bags shall obtain a certificate from the Central Pollution Control Board before marketing or selling; and
 - i. Plastic material, in any form including Vinyl Acetate - Maleic Acid - Vinyl Chloride Copolymer, shall not be used in any package for packaging gutkha, pan masala and tobacco in all forms.
 - j. **Non-woven plastic carry bag shall not be less than 60 Gram Per Square Meter (GWM) (GSM per square meter) or 240 microns in thickness with effect from 30.9.2021.**
- (2) The manufacture, import, stocking, distribution, sale and use of following single-use plastic including polystyrene and expanded polystyrene, commodities shall be prohibited with effect from the 1st July, 2022:
- a. Ear buds with plastic sticks, plastic sticks for balloons, plastic flags, candy sticks, ice-cream sticks, polystyrene [Thermocol] for decoration.
 - (b) **plates, cups, glasses, cutlery such as forks, spoons, knives, straw, trays, wrapping or packing films around**

sweet boxes, invitation cards, and cigarette packets, plastic or PVC banners less than 100 micron, stirrers.

- (3) **The provisions of sub-rule (2) (b) shall not apply to commodities made of compostable plastic and biodegradable plastics.**
- (4) **Any notification prohibiting the manufacture, import, stocking, distribution, sale and use of carry bags, plastic sheets or like, or cover made of plastic sheets and multi-layered packaging and single-use plastic, including polystyrene and expanded polystyrene, commodities, issued after this notification, shall come into force after the expiry of ten years, from the date of its publication”.**
5. **Plastic waste management:** (1) The plastic waste management by the urban local bodies in their respective jurisdiction shall be as under:-
 - a. Plastic waste, which can be recycled, shall be channelized to registered plastic waste recycler and recycling of plastic shall conform to the Indian Standard: IS 14534:1998 titled as Guidelines for Recycling of Plastics, as amended from time to time;
 - b. Local bodies shall encourage the use of plastic waste (preferably the plastic waste which cannot be further recycled) for road construction as per Indian Road Congress guidelines or energy recovery or waste to oil etc. The standards and pollution control norms specified by the prescribed authority for these technologies shall be complied with;
 - c. Thermo set plastic waste shall be processed and disposed of as per the guidelines issued from time to time by the Central Pollution Control Board; and
 - d. The inert from recycling or processing facilities of plastic waste shall be disposed of in compliance with the Solid Waste Management Rules, 2000 2016 or as amended from time to time.
6. **Responsibility of local body.**- (1) Every local body shall be responsible for development and setting up of infrastructure for segregation, collection, storage, transportation, processing and disposal of the plastic waste either on its own or by engaging agencies or producers.
Refer Gazette for details
7. **Responsibility of Gram Panchayat:** (1) Every gram panchayat either on its own or by engaging an agency shall set up, operationalise and co-ordinate for waste management in the rural area under their control and for performing the associated functions.
Refer Gazette for details
8. **Responsibility of waste generator.**-
 - (1) The waste generator shall.-
Take steps to minimize generation of plastic waste and segregate plastic waste at source in accordance with the Solid Waste Management Rules, 2000 or as amended from time to time; Refer Gazette for details
9. **Responsibility of producers, Importers and Brand Owners:**
 - 1) **The Producers, Importers and Brand Owners, shall fulfill Extended Producers Responsibility on plastic packaging waste as per guidelines specified in Schedule -II.**
The producers, within a period of six months from the date of publication of these rules, shall work out modalities for waste collection system based on Extended Producers Responsibility and involving State Urban Development Departments, either individually or collectively, through their own distribution channel or through the local body concerned **As per guidelines specified in SCHEDULE – III**
 - 2) Primary responsibility for collection of used multi-layered plastic sachet or pouches or packaging is of Producers, Importers and Brand Owners who introduce the products in the market. They need to establish a system for collecting back the plastic waste generated due to their products.
 - 3) **Manufacture and use of multi-layered plastic which is non - recyclable or non - energy recoverable or with no alternate use of plastic if any should be phased out in Two years time;**
 - 4) The producer, within a period of three months from the date of final publication of these rules in the Official Gazette shall apply to the **Central Pollution Control Board and State Pollution Control Board** or the Pollution Control Committee, as the case may be, of the States or the Union Territories administration concerned, for grant of registration;
 - 5) No producer shall on and after the expiry of a period of Six Months from the date of final publication of these rules in the Official Gazette manufacture or use any plastic or multi-layered packaging for packaging of commodities without registration from **Central Pollution Control Board if operating in more than two states or union territories** the concerned State Pollution Control Board or the Pollution Control Committees as per sub-rule of rule 13; and
 - 6) Every producer shall maintain a record of details of the person engaged in supply of plastic used as raw material to manufacture carry bags or plastic sheet or like or cover made of plastic sheet or multi-layered packaging.
10. **Protocols for compostable and biodegradable plastic materials**
 - (1) **Determination of the degree of degradability and degree of disintegration of plastic material shall be as per the protocols of the Indian Standards listed in Schedule I.**
 - (2) **The compostable plastic materials shall conform to the IS / ISO 17088:2021, as amended from time to time.**

- (3) The biodegradable plastics shall conform to the standard notified by the Bureau of Indian Standards and certified by the Central Pollution Control Board.
- (4) Until a standard referred to in sub-rule (3) is notified by the Bureau of Indian Standards, biodegradable plastics shall conform to tentative Indian Standard IS 17899T:2022 as notified by the Bureau of Indian Standards.
- (5) As a transitory measure, provisional certificate for biodegradable plastics, shall be issued by the Central Pollution Control Board, in cases, where an interim test report is submitted, for an ongoing test, which covers the first component of the IS 17899 T:2022 relating to biodegradability given at Sl. No. (i) or Sl. No. (ii) of Table 1 or Sl. No. (i) of Table 2 of the IS 17899 T:2022: Provided that the provisional certificate shall be valid till 30th June 2023 with the condition that production or import of biodegradable plastics shall cease after the 31st day of March, 2023.
- (6) The interim test report shall be obtained from the Central Institute of Petrochemical Engineering and Technology or a laboratory recognised under the Laboratory Recognition Scheme, 2020, of the Bureau of Indian Standards or laboratories accredited for this purpose by the National Accreditation Board for Testing and Calibration Laboratories, and they shall certify the bio-degradation of plastic is in line with IS 17899T:2022.

11. **Marking or labelling.**-(1) Each plastic carry bag, plastic sheet or like used for packaging and multi-layered packaging shall have the following information printed in English namely,

- (a) name, registration number of the producer or brand owner and thickness in case of carry bag and plastic packaging:

Provided that this provision shall not be applicable.

- (i) for plastic packaging used for imported goods.
 - (ii) for cases falling under rule 26 of the Legal Metrology Packaged Commodities Rules, 2011, after the approval of the Central Pollution Control Board.
 - (iii) for cases where it is technically not feasible to print the requisite information mandated under this Rule, as per specifications given in the —Guidelines for use of Standard Mark and labelling requirements under BIS Compulsory Registration Scheme for Electronic and IT Products after the approval of the Central Pollution Control Board.
- (b) name and registration number of the producer or brand owner in case of multi-layered packaging (excluding multilayered packaging used for imported goods); with effect from 1st Jan 2023.
 - (c) name and certificate number of producer [Rule 4(h)] in case of carry bags made from compostable plastic
 - (d) The importer or producer or brand owner, of imported carry bags or multi-layered packaging or plastic packaging, alone or along with products shall adhere to clause (a) and (b)
- (2) Each recycled carry bag shall bear a label or a mark “recycled” and shall conform to the Indian Standard: IS 14534: 1998 titled as “Guidelines for Recycling of Plastics”, as amended from time to time;

NOTE:

Each carry bag made from compostable plastics shall bear a label “compostable” and shall conform to the Indian Standard: IS or ISO 17088:2008 titled as Specifications for “Compostable Plastics”.

12. **Prescribed authority:**

- (1) The Central Pollution Control Board, State Pollution Control Board and Pollution Control Committee in respect of a Union territory shall be the authority for enforcement of the provisions of these rules relating to registration, manufacture of plastic products and multi-layered packaging, processing and disposal of plastic wastes;

Refer Gazette for details

13. **Registration of producer, recyclers and manufacturer:**

1. No person shall manufacture carry bags or recycle plastic bags or multi-layered packaging unless the person has obtained a registration from the concerned State Pollution Control Board or the Pollution Control Committee of the Union Territory if operating in one or two states or union territories; or the Central Pollution Control Board if operating in more than two States or Union Territories,
2. Every producer, importer or brand-owner shall, for the purpose of registration or for renewal of registration, make an application as per the guidelines specified in Schedule -II,
 - i. “The concerned State Pollution Control Board or Pollution Control Committee of the Union territory, if operating one or two States or Union Territories”; or
 - ii. “The Central Pollution Control Board, if operating in more than two States or Union Territories”.
3. Every person recycling or processing waste or proposing to recycle or process plastic waste shall make an application to the State Pollution Control Board or the Pollution Control Committee, for grant of registration or renewal of registration for the recycling unit, in Form II as per the guidelines specified in Schedule -II.
4. Every manufacturer engaged in manufacturer of plastic to be used as raw material by the producer shall make an application to the State Pollution Control Board or the Pollution Control Committee of the Union territory concerned, for the grant of registration or for the renewal of registration, in Form III.

5. The State Pollution Control Board or the Pollution Control Committee shall not issue or renew registration to plastic waste recycling or processing units unless the unit possesses a valid consent under the Water (Prevention and Control of Pollution) Act, 1974 (6 of 1974) and the Air (Prevention and Control of Pollution) Act, 1981 (14 of 1981) along with a certificate of registration issued by the District Industries Centre or any other Government agency authorised in this regard.
6. On receipt of the application complete in all respects for the registration for recycling or processing of plastic waste under sub-rule (3), the State Pollution Control Board may, after such inquiry as it considers necessary and on being satisfied that the applicant possesses appropriate facilities, technical capabilities and equipment to handle plastic waste safely, may grant registration to the applicant on fulfilment of the conditions as may be laid down in terms of registration; and the registration shall be subject to fulfilment of obligations in accordance with the guidelines on Extended Producer Responsibility for Plastic Packaging specified in Schedule II.
7. Every State Pollution Control Board or Pollution Control Committee shall take a decision on the grant of registration within ninety days of receipt of an application which is complete in all respects;
8. The registration granted under this rule shall initially be valid for a period of one year, unless revoked, suspended or cancelled and shall subsequently be granted for three years;
9. State Pollution Control Board or the Pollution Control Committees shall not revoke, suspend or cancel registration without providing the opportunity of a hearing to the producer or person engaged in recycling or processing of plastic wastes; and
10. Every application for renewal of registration shall be made at least one hundred twenty days before the expiry of the validity of the registration certificate.
11. Every application for renewal of registration shall be made at least one hundred twenty days before the expiry of the validity of the registration certificate.

14. Responsibility of retailers and street vendors:

1. Retailers or street vendors shall not sell or provide commodities to consumer in carry bags or plastic sheet or multi-layered packaging, which are not manufactured and labelled or marked, as per prescribed under these rules;
2. Every retailers or street vendors selling or providing commodities in, plastic carry bags or multi-layered packaging or plastic sheets or like or covers made of plastic sheets which are not manufactured or labelled or marked in accordance with these rules shall be liable to pay such fines as specified under the bye-laws of the local bodies.

15. Explicit pricing of carry bags. Omitted 27.03.2018

16. **State Level Monitoring Committee.** - (1) The State government or the union Territory shall, for the purpose of effective monitoring of implementation of these rules, constitute a State Level Advisory Committee consisting

Refer Gazette for details

17. **Annual reports.** - (1) Every person engaged in recycling or processing of plastic waste shall prepare and submit an annual report in Form-IV to the local body concerned under intimation to the concerned State Pollution Control Board or Pollution Control Committee by the 30th April, of every year.

Refer Gazette for details

18. Imposition of Environmental Compensation:

1. Environmental Compensation shall be levied based upon polluter pays principle, on person(s) who are not complying with the provisions of these rules, as per guidelines notified by the Central Pollution Control Board.

To be continued in next issue SCHEDULE-II: Guidelines on Extended Producer Responsibility for Plastic Packaging

Disclaimer

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.

EHS Services is a Consulting, Advisory & Audit Agency with three decade's educational and industrial experience on Environment, Health & Safety systems, by which we offer you single window solutions from our highly qualified team members & associates have a wealth of experience in their chosen disciplines.





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	0-100 Cr	100-250 Cr	250-500 Cr	500-1000 Cr	1000+ Cr
Company Turnover					
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.

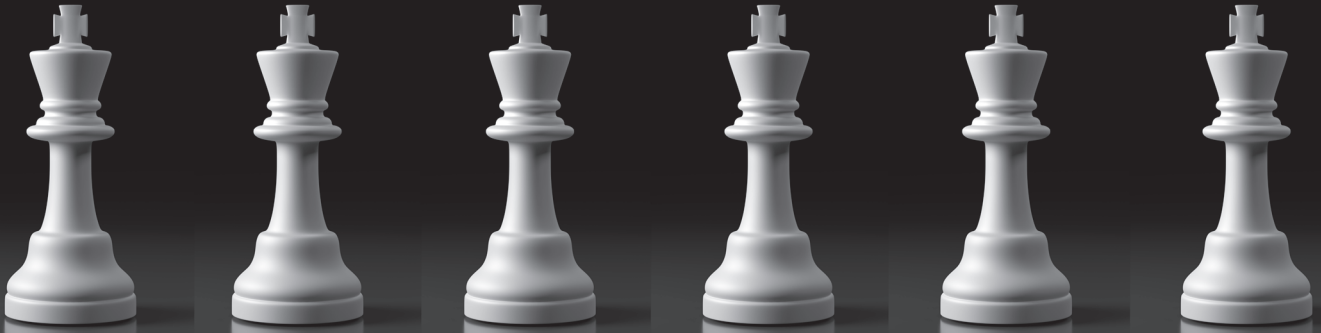
Donation will be accepted in multiples of Rs 1.0 Lakh and minimum of Rs 5.0 lakhs

VISIT OUR WEBSITE

www.indianvinylcouncil.com

**FOR ONLINE MEMBERSHIP
APPLICATION**

Privilege Members of IVC



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