Ailing Indian PVC Industry

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Global Polymer Industry

Polyvinyl Chloride (PVC) is the second largest plastic commodity presently used. PVC resin demand all over the world is estimated to be 26 million tones per year. The major demand is seen in North America, Europe and Japan, where its consumption is about 60% of globally consumed material.

GLOBAL POLYMER CAPACITY DEMAND

LDPE	19788	15914
LLDPE	20349	12575
HDPE	21229	21901
ALL PE	60346	50390
PP	34574	29068
PO	94920	79458
PVC	30478	27568
PS	17130	13070
Total	**142526**	**120116**

Global PVC Industry

PVC is about 205 of total consumed, because it is tough and durable, competitive in cost very versatile with ease of processing, which includes injectin, extrusion, blow moulding, calendaring, spread coating, dip coating. Products manufactured with their processes can be hard, semi soft or soft with exact desirable performance and low energy demand.

A wide range of PVC products are manufactured using various processes mentioned above. The range of PVC products manufactured include pipes windows profiles kitchen furniture packaging etc. in rigid range while in soft or flexible range we have products like leather cloths, Shoes, Films, Toys, Medical appliances like bloods bags, gloves & tubing (Electrical Cables and Wires).

PVC is processed comparatively at high temperature to manufacture above-mentioned wide range of products using various process and machinery. At this temperature of processing there is possibility PVC gets decomposed. To prevent this decomposition, PVC stabilizers are used during processing. These stabilizers are manufacturing using heavy metals like Pb, Ba, Cr, Zr, Ca etc. some of there stabilizers ca leach when in use and can cause health problems. This problems is very serious with PVC products use for products handled by children such as toys, erasers etc.

For manufacture of flexible PVC products plasticizers are added during processing of PVC resins. There are again a wide range of plasticizers and can be clarified in major types such as Phthalate, Adipates, Mellitalese, Poxy, Phosphates, Citrates and Polymeric. It is estimated that global demand for plasticizers is 4647000 MT per year. The plasticizer content in PVC product will vary depending on flexibility of the product but can be as high as 50% of the weight of the plastic product. Some of these plasticizers esters are considered not safe for some applications as toys etc; as they can leach from PVC products and can cause health problems.

Both the stabilizer and plasticizers, suite few new products are available which are safe and do not cause weather problems.

Due to safety and health considerations PVC is facing a lot of resistance, especially from environmentalists and in the last few years, there is the lot of controversy on use of plasticizers for some of the applications of PVC products. In some countries DOP, which is the main plasticizers for PVC, is banned for such applications. However suitable substitutes have been already evaluated and are used for such critical applications.

The other constraint for the growth of PVC is the disposal of used PVC material. The methods adopted are incineration or burning which produce dioxin during this process and though the product is considered most toxic and is linked to cause of cancer and damage to reproductive system. However presently, quite a few systems have been developed where used PVC products are request to reduce the problem of disposal.

With all such constraint from environmental concerns and as a product contributing to a better stand and of living. The global PVC growth is about 4% while that of plasticizers is about 2% and for all plastic material it is 3.5%

Development of Indian PVC industry

The above global overview of PVC industry shows that in state of several hurdles. The PVC Industry is still growing where factor such as population degree of industrialization, free trade areas, appropriate legislation play an important role. Indian with a vast population next to China where since independence of the country, a regular planning is done for industrialization agriculture, infrastructure facilities, technical education etc. every five years the PVC industry can be received therewith. The major plastic materials which are used have manufacturing capacity and demand as follows:

	Capacity (MT)	Demand (MT)
LDPE	175000	270000
LLDPE	1545000	1462000
PP	1370000	1472000
PVC	780000	897000
PS	354000	214000
Total	**4224000**	**4315000**

PVC demand is about 20% of major plastic material produced in the country. However, compared to the global picture, especially when compared to china, the development of PVC industry is unsatisfactory. About a decade back India and China were more or less at same level. As on today China consume about 40,00,00 MT of PVC per year, its growth is 6%. The demand for PVC is growing so fat that local production cannot meet the demand and hence there are heavy imports.

PVC CAPACITY & DEMAND IN INDIA

	Capacity (MT)	Demand (MT)
96/97	788000	558000
97/98	788000	646000
98/99	788000	742000
99/2000	780000	743000
2000/2001	788000	741000

PVC RESIN MANUFACTURERS

	Location	Capacity(MTA)
Reliance industries	Hzira	300000
IPCL	Vadodara, Gandhar	205000
Finolex	Ratnagiri	130000
Chemplast	Methurdam	6000
DCM Shriram	Kota	33000
Total		**788000**

The first plant for PVC by Calico Chemicals started somewhere in 1958, with a capacity of 3600 TPA which was expanded to 6000 TPA shortly, but later the unit enclosed down. After about 45 years, PVC capacity as on today is only 7,88,000 MTA while demand for last few years, is mostly static. For the PVC industry the major additive required is plasticizers. PVC industry started in 1958 and the first plant for plasticizers started in 1961. during the later period, other units in large scale started manufacturing plasticizers such as Herdillia Chemicals, Indian Organic, Anvires & plasticizers, Suhrid Geigy etc. Also during this period, a number of units in small scale sector started manufacturing, resulting in building a large capacity of about 1,50,000 TPA for plasticizers. For manufacture of plasticizers, various types of Oxo alcohols of carbon chain length C_4 to C_{12} are used. Plasticizers manufactured from there alcohol impart properties to PVC products depending on Carbon Chain length C_4 alcohol Butanil / Iso butanol are efficient for imparting flexibility but are too volatile for shelf life C_{13} alcohol ester has properties for specific applications due to very low volatility high heat stability, but is less demand fro plasticizers, Oxo alcohol manufacturing was started in the country. The first plant was that of NOCIL which was started some where in 1968 to manufactured 2EH, butanol and Iso butanol. Later in 1982, Indu Nissan started offering Iso Octanol and also Iso decanol. Late Andhra Petrochemical came with total capacity for Oxo alcohols reached approximately 93000 TPA.

OXO ALCOHOL MANUFACTURING CAPACITY

National Organic Industries Ltd.	27,000 MTA
Indo Nippon Oxo Chemical	30,000 MTA
Andhra Petrochemicals	36,000 MTA
Total Capacity	**93,000 MTA**

This capacity is sufficient enough to meet the demand of plasticizers industry.

For manufacture of plasticizers, the other raw material consumed in large quantity is Phthalic anhydride. As the demand for plasticizers started building up, PA manufacturing also started in the country. M/s Herdillia Chemicals started producing PA some where in 1968. Later on other producers also entered manufacturing and the total capacity of PA is 2,37,600 TPA.

PA is also used for manufacture of Alkyd Resins for paints and for manufacture of dyes, etc. However, about 40% of the capacity PA is utilized by the plasticizer industry. Thus the capacity of PA meets the requirement of the plasticizer industry.

PHTHALIC ANHYDRIDE MANUFACTURING CAPACITY

I.G Petrochemicals	1,02,000 MTA
Thirumalai Chemicals	90,000 MTA
Asian Paints	25,000 MTA
Mysore Petrochemicals	12,000 MTA
Herdillia Chemicals	8,600 MTA
Total	**2,37,600 MTA**

The present status of PVC industry in India

From the above details, it can be seen that Indian PVC industry has slow but steady growth. During the pre liberalization period, there was protection to the local industries by restricting imports and by way of high import duty to keep industries viable. This approach did help by way of steady growth, employment generation, development of indigenous industries and treasury receipts.

Later on from 1995 onwards, import duty on many items were gradually reduced and also imports were made liberal. Due to these steps taken local industries started feeling the competitors and a stage reached when survival of the industries became the major policy issues for the Government.

During this period of uncertainty for keeping industries alive, many of the plasticizers industries in large scale, except Indo-Nippon stopped their production, and over a period many of the small-scale units also had to close down. As the demand for plasticizers reduced oxo alcohol requirements were also affected. Due to this situation out of three units manufacturing oxo alcohols, two units are presently not operating. This situation also resulted in reducing demand for phthalic anhydride and also PVC resin. In fact, Finolex Industries who had planned for expansion for 1,30.000 MTA has kept on hold this project. IPCL had also proposed for traditional capacity but they also are reviewing the situation before taking a final decision.

Ailments of Indian PVC industries

The dismal situation to which industries have been pushed to, is due to many factors which require consideration.

Take an example of anti-dumping duty levied on import of oxo alcohols used for manufacture of plasticizers to protect local oxo alcohol industry. Below is the table for oxo alcohols subject to anti-dumping duty and country of origin from where imports are coming from. The levying of duty is done by two notifications with a gap of about one year between them. There are thirteen countries and nine types of oxo alcohol subject to levy of anti-dumping duty. Firstly, out of the range of oxo alcohols butanol / iso butanol, 2EH, Iso butanol and Iso decanol are only manufactured in the country, however duty is levied on other products also. In earlier notification there was one more product included but later on the duty was removed by appellate authority. Also between the two notifications there was a time lapse of one year, a time sufficient to damage the industry.

It can also be seen that duty is varying from country to country for the same product. The competition faced from developed countries like U.S.A, Europe, Japan due to their high capacity, advanced technology, etc. can be understood. But other countries, which are considered underdeveloped, are also competing products manufactured in India. Is it that they have better technology better infra structure, talented labour, or highly subsidised industries? It is really strange that industry has to operate only under protection.

In spite of all steps taken, it has not helped the oxo alcohol and plasticizer industry. Many units are not operating being not viable in spite of ant-dumping duties and one thing is definitely sure that it has resulted in damaging the plasticizer, phthalate anhydride, oxo alcohols and PVC industry. Importers find it economical to bring plasticizers than oxo alcohols which is thus helping other countries to export of value added products.

It is an accepted fact that tariff differential between basic building blocks, intermediates, end product chemicals need to be corrected in such a way that the differential between end product and intermediate is higher than the differential between intermediate and basic building blocks.

In case of Phthalic anhydride and oxo alcohols, the two main raw materials for producing phthalate plasticizers, the import duty structure is to the advantage of Phthalic anhydride and oxo-alcohol manufacturers. However, in case of phthalic plasticizers manufacturers, it is to their disadvantage as can be seen below:

Import duty on respective raw materials:

Phthalic Anhydride	Oxo-alcohols
Naptha * 5% + 1 6% CVD	Naptha * 5% + 16% CVD
Ortho Xylene * 16.5% + 16% + 4% SD	Propylene * 16.5% + 16% + 4% SD
Phthalic Anhydride * 38.5% + 16% CVD + 4% SD	Oxo-alcohols 38.5% + 16% CVD + 4% SD + anti-dumping duty as per country of import

Accordingly, duty increase from naphtha to ortho xylene to phthalic anhydride and from naphtha to oxo-alcohols.

Whereas in case of phthalate plasticizer, it is 38.5% + 16% CVD + 4% SD on Phthalic anhydride and from 38.5% + 16.5% CVD + 4% SD anti- dumping duty on oxo-alcohols. Hence, we request you to increase the import duty on phthalate plasticizers by a minimum of 15/20%, so that cheaper imports are discouraged.

While trying to protect the oxo alcohol industry, the plasticizer industry is left high and dry. As mentioned, most of the units are closed down. The Industries serving are located wher some benefits are available by way of sales tax exemption, etc. which was done for development of backward regions. But by giving this type of assistance for a small portion of the country at the cost of the vast part of the country, the industries in the rest of the countries cannot survive especially under this critical situation.

The policy adopted by bureaucrats and politicians without appreciating short term and long term implications has been detrimental for the industry at large and can be seen from the above details. In fact such cases should be handled by technocrats in the industry to decide what is good for the industry and consequently for the country. There are organizations, associatios of industries which are supposed to promote and support the cause of industries, however in all above situations, their presence is hardly felt. There are situations where industries face problems technically and commercially. The industry has to be given time for capacity and new developments.

There are institutions and laboratories at National level operating in the country. In this case also hardly any contribution is found for the development of the industry in terms of latest technology, competitive products in the present fast changing international situations.

The PVC industry as mentioned above had a steady growth since it was pioneered about forty years back. At that time industrialists, technocrats, engineers, etc. had put in hard labour for the development of PVC industry in the country. For reasons mentioned above, the industry is in very pathetic condition and those who had put in tremendous efforts by way of time, money, labour, etc. are left with no choice but haplessly watch the deteriorating conditions of the PVC industry.

ANTI-DUMPING DUTY ON OXO ALCOHOLS

Table-consolidated of customs notification No. 98/2001 dated 26TH September 2001 and 90/2002 date 5TH September 2002

(Amount of Duty in US Dollars per Metric Tone payable in Indian Rupees)

Country/ Territory	Normal Butanol	Iso Butanol	2 ethyl Hexanol & Iso Octanol	Iso Decanol	Octanol	Nonanol/ Iso Nonanol	Sabutol
Poland	44	165	165	165	-	-	-
South Korea	115	187	252	252	-	-	-
Russia	67	97	97	97	-	-	-
Iran	79	136	136	136	-	-	-
United States of America	58	Nil	87	87	-	-	-
European Union	145	204	121	12	-	-	-
Indonesia	197	194	197	197	-	-	-
Saudi Arabia	47	47	38	38	-	-	-
Brazil*	307.34	139.82	164.16	-	164.16	164.16	-
Malaysia*	194.15	191.55	193.88	-	193.88	193.88	-
Romania*	218.41	218.41	218.41	-	218.41	218.41	-
Singapore*	217.44	-	237.02	-	237.02	237.02	-
South Africa*	-	260.52	260.52	-	260.52	260.52	68.79

* Effective up to and inclusive of the 4th day of March 2003.

Reference book:

Indian Plastics Industry
Moulding the Future, Plastic India 2003