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THE DEVELOPMENT OF THE PLASTICS INDUSTRY IN INDIA 1/

by

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The plastic industry is one of the major and fast developing industries in India today. During the post independence period, the country had to rely on imports not only for raw materials and machinery but also for technical know-how. This industry initiated in such an environment has achieved a commendable progress during the last 20 years. There has been a rapid and phenomenal advance in the expansion of the factories and units in this field both for the manufacture of finished products as well as the production of raw materials. Nearly 100,000 tonnes of raw materials are manufactured every year. The country will attain self-sufficiency shortly in the production of phenol formaldehyde, urea-formaldehyde, cellulose acetate, different types of polystyrene and polythene, PVC resin and allied plasticisers and polyesters. The industry's dependence on import for these raw materials has been steadily declining and it is the avowed policy of the Government to reduce gradually and ultimately remove our dependence on imports of raw materials required. However, India's production of plastics has been fractional when compared to that of West Germany, USA, Japan, etc.

Plastic industry has great significance in terms of import substitution and growing urganization. Its contribution to our export earnings is growing day by day. But, we have to go a long way to catch up with the Western World. The finished products are priced beyond the reach of the consumer. This is due to uneconomic plant capacity, non-availability of sufficient raw materials, defective machinery, lack of technicians, etc. The per capita use of plastics in India is about 100 to 125 grams while that in Japan, USA and Germany exceeds 25 kgs. The scope for further development, needless to say is quite unlimited.

High density polyethylene has created a major revolution in the field of plastics and in its applications. Some of the major applications of HDPE include bottle crafts and transport containers, woven fabrics, plastics bags, film, extrusion lamination/coating packaging pipes, etc. The advantageous properties of HDPE like lightness, easy handling being virtually unbreakable, chemical resistance and good impact properties, attractive and hygienic appearance etc., have enabled HDPE to make a break through in the field of packaging. The availability of suitable machines indigenously has also given a boost to this field of application.

The annual consumption of plastics in packaging is estimated at over 30,000 tonnes. With the growth of petrochemical industries, the PVC polypropylene, polyester, etc., will also enter this field as in developed countries. The estimated demand for polyethylene (LD and HD) is expected to be of the order of 100,000 tonnes by 1974-1975.

The largest consumers for packaging materials are the fertilizer and chemical industries. With the advent of high density polyethylene oriented tapes known as Rafia which is woven into sacks, one can safely predict that the conventional packaging materials like jute bags and krafts would be replaced and this new product will be in a position to meet the requirements of these major consumers, especially when jute is becoming dearer. HDPE sacks are superior to jute bags in many respects. They are very light weighing less than one third of the corresponding jute bags. They have superior chemical resistance and they do not rot like jute products. The elongation strength is 15-25% and they have better resistance to dropping than that of jute sacks. The stability of price is also an important advantage over jute.

PROBLEMS AND PROSPECTS

One of the major handicaps that come in the way of development of plastic industry has been the high cost of the finished products. The producers are unable to get sufficient raw materials to fully utilize their installed capacities and enjoy the economics of sale. Since the supply falls short of demand, the distribution of scarce raw materials has to be regulated. This problem cannot be avoided in the initial stages of development. It is gratifying to note that the industries producing these basic raw materials are fast progressing and with the development of more and more petrochemical industries, the country will be in a position to reach the stage of self-sufficiency in plastic materials.

It is often found that some manufacturers in their anxiety to bring down the cost go in for imperfect machinery, thus affecting the quality as well as the standard of the product. Lack of technical know-how has to some extent retarded the development of plastic industry in India. Transfer of technical know-how from foreign countries cannot be avoided until we develop and train the required technical personnel

in India.

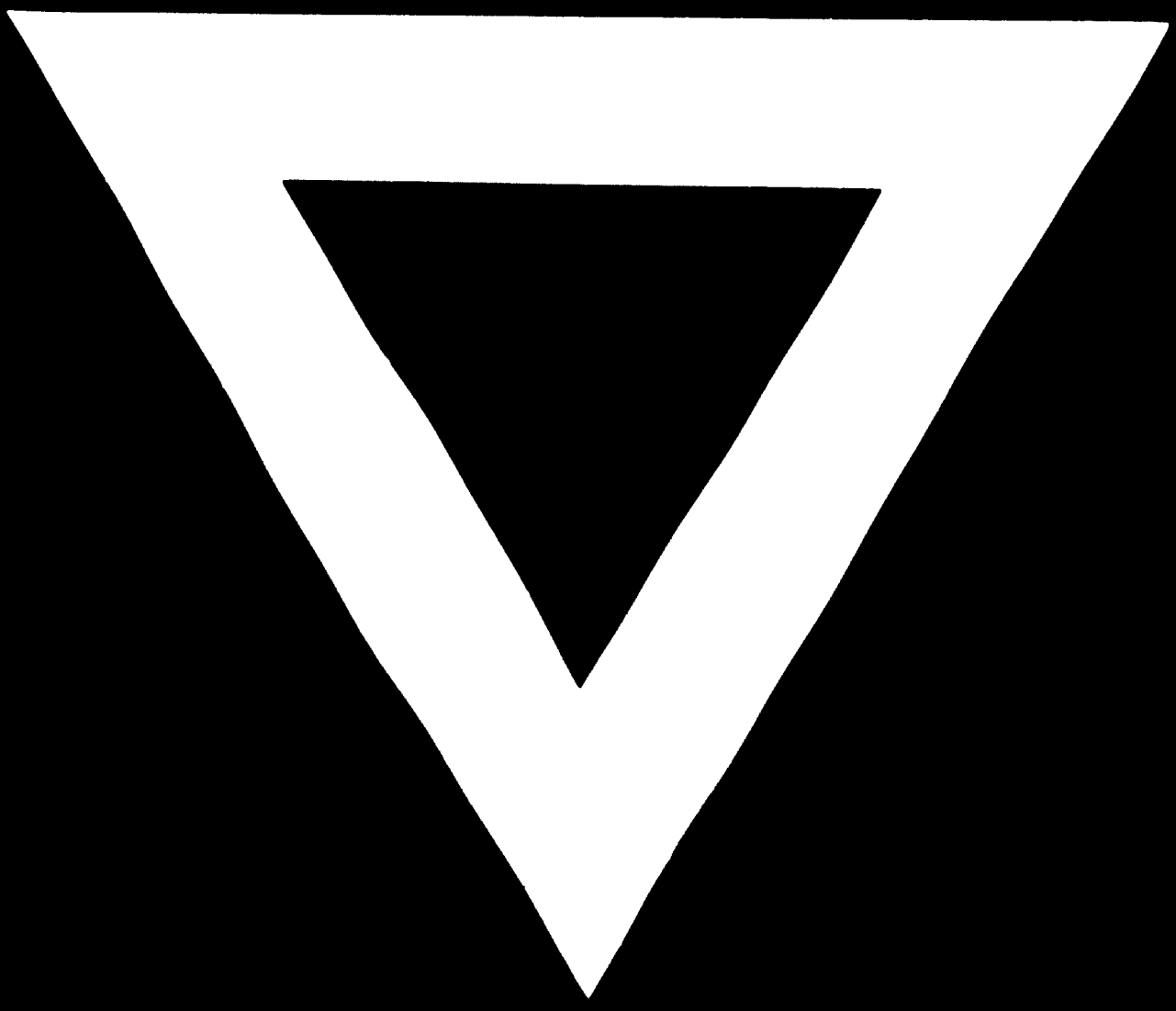
There is another aspect, namely, competition between small scale units and large units. In the manufacture of HDPE woven sacks, small units have already proved their mettle in plastics and shown that they are in no way less efficient than the large units. Some of the plastic articles such as blow moulded plastic goods and plastic processed goods are already reserved for small scale industries.

The recent energy crisis has really crippled the industry in the country. The situation in India is very bad. With the increase in the crude/naphtha price, the prices of all the plastics have gone up by 100% or even more. At the same time the supplies are inadequate and irregular. It has become very difficult to fill up the gap between demand and supply from indigenous sources.

The machinery manufacturers are very much affected because of the prevailing shortage of all plastic raw materials. Under the circumstances, it is very difficult to encourage further growth of the plastics conversion industry in the country. It has also been found difficult to run all the existing units at the optimum economy level, due to inadequate supply of raw materials and due to the prohibitive prices at which these raw materials are supplied. These machinery manufacturers have therefore to continue their efforts to develop better and diversified equipments.

The mould making and ancillary industries are also very badly affected with the fall in the number of new machines. The plastic conversion sector especially those who have entered this field after 1971-72 are very badly affected. Since supply of raw material is even less than 50% of the installed capacity, the cost of production has shot up making the end products uncompetitive. Because of inadequate and irregular supplies as well as the fluctuating prices of raw materials in the open market, firm commitments on supplies both domestic as well as for export become impossible resulting in the loss of business. However, by the time the Indian Petrochemical Corporation Limited commences commercial production of low density polyethylene (90,000 tonnes per annum), polypropylene (30,000 tonnes per annum) ABS (15,000 tonnes per annum) the plastic industry will have to ppol all the resources and do something

to sustain during this trying period. The Indian Plastic Industry will have to conserve the available quantities of raw materials for the selective industrial applications and not to use plastic for housewares, cheap toys, etc. The applications for package industries must be maintained. Machine operators will have to be trained to increase efficiency and reduce wastage so that the production cost also could be reduced and consequently the profitability bettered. The country will have to think of large capacity sophisticated plastics reclaiming plants for recovering the waste material to produce good quality materials. Reprocessed materials could be used profitably for non-critical applications and virgin material for critical applications. For the last 30 years plastics have replaced all the conventional materials due to its lightness, cheapness and advantageous chemical properties but today due to inadequacy of raw materials we have to conserve the plastics for selective applications only and for replacing precious ferrous and non-ferrous metals and not for substituting natural resource based industries.



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