

# PLASTIC WASTE MANAGEMENT IN INDIA

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## **Abstract**

Plastic waste is recycled in India in an “unorganized” way. 60% of the plastic-waste collected and segregated gets recycled back into materials for further processing into consumer products, while the balance is left unutilized. Regulations and legislations are being enforced in two States of India viz. Haryana and Himachal Pradesh, while a National Plastic Waste Management Council Task Force has been set up by the Government of India, Ministry of Environment and Forests, with the association of Department of Petroleum and Chemicals, Ministry of Urban Affairs, Municipal Corporation of Delhi and various groups/associations of plastic manufacturers. Scope is there for the recycling/management of plastic waste, as an ‘organised activity’ in India.

## **Introduction**

Municipal solid waste in India contains 1-4 per cent by weight of plastic waste. India's rate of recycling of plastic waste is the highest (60%) in the world as compared to other countries (China 10%, Europe 7%, Japan 12%, South Africa 16%, USA 10%). As a source of hazard to environment, plastic accounts for 16% of chlorine in the environment and has 54 carcinogens, polythene bags for disposal if burnt irresponsibly release highly toxic gases like phosgene, carbon monoxide, chlorine, sulphur dioxide, nitrogen oxide, besides deadly dioxin.

Polymers are gradually replacing natural materials like metal, timber and fibres and thereby conserving the natural environment. Polymers are now finding diversified uses through blends and alloys and giving higher standards of performance and life cycles to various products.

Plastic waste forms a wide range. Predominantly it is film packaging and polythene carry bags, followed by blow moulded containers, and broken and discarded moulded items. The range is wide and includes –

- discarded PVC chappals/shoes in varied colors and grades of plastic material.
- discarded PVC mineral water bottles/PET mineral water and liquor bottles and PS ice-cream/cold drink cups/disposable catering plates and trays and expanded PS and PE foam packagings.
- PE, PVC, PP films, packages, shopping bags, and medicine foils, used and discarded moulded items like containers and range of household non-durables, combs, ball point pens, tooth brushes etc.

- Broken plastics articles - mostly of PE, PVC, PS, PP, ABS, Nylon, PET, etc.

Table 1 – Waste Dimension in India

Total MSW (KTA)	30,000	100%
Total plastic waste (KTA)	908	3% 61%
Break-up (KTA) (% of Total Plastic Waste)		
MSW	300	33%
Agriculture	NA	NA
Automobile	NA	NA
Construction	NA	NA
Distribution + large industry	NA	NA
Process waste	38	4%
Industry + Post consumer	570	63%
Recycling (of total plastic waste)	825	91%
Incineration (of total plastic waste)	Nil	Nil
Unused / landfill (of total plastic waste)	83	9%

large % of packaging waste recovered  
Target to be set for Recycling

## POLICY MEASURES IN INDIA

Various policy measures are being taken to check the nuisance caused by plastic waste in India, through there is no definite policy and legislation framed in respect of mitigating the plastic waste in the country. These are –

### Regulations and legislation:

- Until recently there has been no definite environmental policy and legislation framed in respect of plastic waste in India. The plastics waste gets generated, collected, traded, and reprocessed by known methods into useful products, thereby supplementing supply

of raw materials, and at economic price. However, a HP Non-biodegradable Garbage (Control) Act, 1995, has been introduced by the Government of Himachal Pradesh. The Act appropriately envisages prohibition of throwing or depositing plastic articles in public places and to facilitate the collection through garbage in identifiable and marked garbage receptacles for non-biodegradables, placed at convenient places. Haryana State has announced a Bill (1997) on Non-biodegradable Garbage on similar lines as that of Himachal Pradesh.

The National Plastics Waste Management Task Force of the Ministry of Environment and Forests, Government of India, has recommended a strategy and action programme of Plastics Waste Management in India.

- (b) Ministry of Environment and Forests, Government of India have issued criteria for labeling 'plastic products' as 'Environmental Friendly' under its 'Ecomark' Scheme, in association with the Bureau of Indian Standards. One of the requirements for plastic products, is that the material used for packaging shall be recyclable or biodegradable.
- (c) The Bureau of Indian Standards, New Delhi (BIS) has issued guidelines on recycling of plastics waste including code of practices for collection, sorting through conventional practices continue to be adopted and accepted, need has been voiced to upgrade these, both by the authorities and NGOs. However, while formulating Indian standard specifications for various plastic products, used for critical applications like plastic piping system, water-storage tanks, packaging for food articles, a clause is included which reads "no recycled plastics waste shall be used". An exercise has also been carried out by the Ministry of Environment and Forest in association with Bureau of Indian Standards to include use of recycled plastic waste wherever appropriate in the manufacture of plastic products and this should be specified accordingly in the relevant Indian Specifications.
- (d) The Prevention of Food Adulteration Department of the Government of India, has issued directives to various catering establishments to use only food-grade plastics, while selling or serving food items. Rules have specified use of 'foodgrade' plastic, which meets certain essential requirements and is considered safe, when in contact with food. The intention is to check possible contamination, and to avert the danger from use of recycled plastic. The Scheme announced in February, 1995 is being implemented in cooperation with Bureau of Indian Standards (BIS) which has formulated a series of standards on this subject. The Bureau of Indian Standards Sub-committee PCD 12.17 is charged with formulating guidelines, codes and specifications for recycling of plastics. Two documents, viz., "Guidelines for Recycling of Plastics " and 'Recycled Plastics for Manufacture of Products, Designation' have been finalised.
- (e) The Central Pollution Control Board, New Delhi had assigned a study on "Status of Waste Plastics Recycling in NCR Delhi" to Shri Ram Institute for Industrial Research Delhi. Among the conclusions of this study, the following deserve particular mention:

- There is need to formulate and enforce code of good practice both for the processor and the consumer. In particular, standards need to be laid down for products from various plastics waste including the co-mingled one.
  - Directives should be imposed for a periodic air quality and health/hygienic check in the reprocessing units.
- (f) During September 1996, (and earlier during September, 1994) a National Conference on 'Plastics and Environment' was organised at New Delhi, by FICCI and Plast India Foundation. It was during the Conference that the Ministry of Environment and Forests, Government of India announced the setting up of National Plastics Waste Management Task Force, with representations of Department of Chemicals and Petrochemicals, Ministry of Urban Affairs, Municipal Corporation of Delhi, Plast India Foundation, The All India Plastics Manufacturers Association, All India Federation of Plastics Industry, NOCIL, IPCL, and experts from BMTPC, FICCI and CII. The Task Force has submitted its report (August 1997) and drawn Strategy and Action Programme for Plastics Waste Management in India.
- (g) A National Association of PET industry has recently been formed by PET manufacturers and users in India which is expected to look after the organised collection and recycling of PET bottles/containers waste.

## **CONCLUSION:**

Plastic Waste Management has assumed great significance in view of the urbanisation activities. Plastic waste generated by the polymer manufacturers at the production, extrusion, quality control & lab. Testing etc., stages, as well as, by the consumers require urgent disposal and recycling to avoid health hazards. Various strategies are being devised to mitigate the impact of plastic waste in India.