

Biomedical Waste Categorization in India

In Last month article on biomedical waste we have gone through legislative framework for bio-medical waste management (BMWM). It was established in the country more in 1998. Though some studies have identified gaps at local levels, no systematic effort was done to collect data from different parts of the country. The objective of this nationwide study for categorization and Management of Biomedical waste was to document existing resources, infrastructure and practices related to BMWM across the study districts.

Sources of Bio-Medical Waste While urban solid waste has attracted the attention of town planners, environmental activists and civic administrators, there is yet lack of concern for some special sources of waste and its management. One such waste is bio-medical waste generated primarily from health care establishments, including hospitals, nursing homes, veterinary hospitals, clinics and general practitioners, dispensaries, blood banks, animal houses and research institutes. The other sources of biomedical waste are the following.

- A. Households,**
- B. Industries, education institutes and research centres,**
- C. Blood banks and clinical laboratories, Health care establishments (for humans and animals)**

As discussed in Last articles as MOEF and Pollution control boards are working together and came with new set of rules in 2016. In Biomedical waste rules 1998 and 2003 ten categories of waste were mentioned with their disposal methods. In 2016 Biomedical waste Management rules these 10 categories has been reduced to 4 categories.



The Categorization of Biomedical waste is done on the basis of disposal method and on the basis of infectious nature. Following are the categories as per Biomedical Waste Management Rule 2016. As specified in the rules Coloured bins or bags are used to store biomedical waste so that it shall not be opened at any point for segregation purpose.





Cat.	Type of Bag/ Container used	TYPE OF WASTE	Treatment /Disposal options
Yellow 	non-chlorinated plastic bags Separate collection system leading to effluent treatment system ←	a) Human Anatomical Waste b) Animal Anatomical Waste c) Soiled Waste d) Expired or Discarded Medicines e) Chemical Waste f) Micro, Bio-t and other clinical lab waste g) Chemical Liquid Waste	Incineration or Plasma Pyrolysis or deep burial*
Red 	non-chlorinated plastic bags or containers	Contaminated Waste (Recyclable) tubing, bottles, intravenous tubes and sets, catheters, urine bags, syringes (without needles) and gloves.	Auto/ Micro/Hydro and then sent for recycling. not be sent to landfill
White 	(Translucent) Puncture, Leak, tamper proof containers	Waste sharps including Metals	Auto or Dry Heat Sterilization followed by shredding or mutilation or encapsulation
Blue 	Cardboard boxes with blue colored marking	Glassware	Disinfection or auto/ Micro/hydro and then sent for recycling.

Image: Categorization of Biomedical waste as per BMW Rules 2016

In developed countries strict biomedical legislation is available to ensure proper categorization of Biomedical Waste. In India still many Common facilities facing challenges of proper segregation of biomedical waste. CBWTF's and local Pollution control boards are working to provide training to Health care facility staff towards categorization of waste. Categorization of biomedical waste is very important from safety of workers who are working in waste handling and disposal of the same. Proper categorization of biomedical waste will ensure proper segregation of highly infectious waste (solid waste like bandage, Anatomical parts) from plastic wastes (disposed through Autoclave) used in the treatment, sharps so that it can be disposed as per prescribed method of disposal as per rules and guidelines.

Sources:

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