



# The Sindh Government Gazette

Published by Authority

---

KARACHI FRIDAY DECEMBER 19, 2014

---

## PART-I

GOVERNMENT OF SINDH  
SINDH ENVIRONMENTAL PROTECTION  
AGENCY

Karachi dated the 16<sup>th</sup> December, 2014.

### NOTIFICATION

NO. EPA/TECH/739/2014:- In exercise of the powers conferred by section 36 of the Sindh Environmental Protection Act, 2014 (VIII of 2014), the Environmental Protection Agency with the approval of the Government of Sindh, is pleased to make the following rules, namely: -

**Short title and commencement.**- (1) These rules may be called the Sindh Hospital Waste Management Rules, 2014.

(2) They shall come into force at once.

2. **Definitions.**- (1) In these rules, unless there is anything repugnant in the subject or context,-

- (a) "Act" means the Sindh Environmental Protection Act, 2014 (VIII of 2014);
- (b) "Authorised Officer" means any Officer designated by the Director General of the Agency for the purpose of these rules;
- (c) "chemical waste" includes chemicals from diagnostic and experimental work, cleaning processes, housekeeping and disinfecting procedures, mercury waste such as from broken clinical equipment and spillage, and cadmium waste such as from discarded batteries;
- (d) "genotoxic waste" includes cytotoxic drugs and outdated materials, vomitus, faeces or urine from patients treated with cytotoxic drugs or chemicals, and materials such as syringes and vials contaminated from the preparation and administration of such drugs;
- (e) "Hospital" includes a clinic, laboratory, dispensary, pharmacy, nursing home, health unit, maternity center, blood bank, autopsy centre, mortuary, research institute and veterinary institutions, hospital waste facility, including any other facility involved in health care and biomedical activities;

- (f) "Hospital waste" includes any waste which is generated during the diagnosis, treatment or immunization of human beings or animals or in research activities or in the cleaning of medical equipments, supplies and accessories pertaining thereto or in the production or testing of biological, and including categories mentioned in Schedule I;
  - (g) "Hospital Waste Facility" means a suitable thermal, chemical, irradiation, incineration, filtration, autoclaving, destruction, shredding, microwaving, encapsulation or other treatment method, or by a combination of such methods involving proper validation and monitoring procedures;
  - (h) "Infectious waste" means waste contaminated by any type of pathogens such as bacteria, viruses, parasite or fungi and includes cultures from laboratory work, waste from surgeries and autopsies, waste from infected patients, discarded or disposable materials and equipment which have been in contact with such patients and infected animals from laboratories;
  - (i) "Liquid waste" means liquid chemical waste, liquid infectious waste, liquid radioactive waste generated from laboratory, which is likely to cause adverse impact on human health and natural resources;
  - (j) "Non-risk waste" includes paper and cardboard, packaging, food waste and the like;
  - (k) "Occupier" means a person who controls and administers the Hospital and its premises;
  - (l) "Operator" means a person who owns or controls or operates a facility for the collection, transportation, treatment, disposal or any other form of handling of hospital waste;
  - (m) "Pathological waste" includes tissues, organs, body parts, fetuses, blood and body fluids;
  - (n) "Pharmaceutical waste" includes expired or unused pharmaceutical products, spilled contaminated pharmaceutical products, surplus drugs, vaccines or sera, and discarded items used in handling pharmaceutical such as bottles, boxes, gloves, masks, tubes, or vials;
  - (o) "Radioactive waste" means wastes that contain radioactive material;
  - (p) "Risk waste" means infectious waste, pathological waste, sharps, pharmaceutical waste, genotoxic waste, chemical waste, and radioactive waste and liquid waste;
  - (q) "Schedule" means schedule appended to these rules.
  - (r) "section" means a section of the Act.
  - (s) "sharp" includes whether infected or not, needles, syringes, scalpels, infusion sets, saws and knives, blades, broken glass and any other item that could cut or puncture; and
  - (t) "waste management" includes waste segregation, waste collection, waste transportation, waste storage, waste treatment, waste disposal and waste minimization.
- (2) The words and expressions used but not defined in these rules shall have the same meaning as are assigned to them in the Act.
3. **Responsibility for waste management.**- Every hospital owner, occupier, operator shall be responsible for the management of the hospital waste generated by it till its final disposal in accordance with the provision of the Act and these rules.
4. **Hospital Waste Management Plan.**- (1). A Hospital Waste Management Plan shall be based on internationally or nationally recognized environmental management practices, standards, which shall efficiently and effectively address the hospital waste.
- (2) The Hospital Waste Management Plan shall include -
- (a) waste management points for every ward and department, indicating each point, location on the basis of risk assessment;
  - (b) the categories of waste being generated in accordance with Schedule-I
  - (c) quantity of each waste category;
  - (d) details of the types, numbers of containers, waste bags and trolley required annually;
  - (e) schedule and frequency of waste collection from each ward and department;

- (f) effective arrangements for onsite and off-site transportation of waste as provided in Schedule-I and II;
  - (g) contingency plans for storage or disposal of risk waste in the event of breakdowns of hospital waste facility, or of maintenance or collection arrangements;
  - (h) training courses and programmes on waste management;
- (3) The Waste Management Plan shall be regularly monitored, reviewed, revised and updated and submitted to the Agency on annual basis.
5. **Waste segregation.**- Risk waste shall be separated from non-risk waste at the point where the waste is generated by a doctor, nurse, or other person as per Hospital Waste Management Plan and Schedule-I.
6. **Waste collection.**- Waste shall be collected in accordance with the Schedule-I and II.
7. **Waste storage.**- (1) A separate central storage facility shall be established within the Hospital with the details provided in Hospital Waste Management Plan.
8. **Waste Treatment;** (1) On recognition of the type and nature of the waste material and the organisms in the waste, risk waste shall be inactivated or rendered safe before final disposal by a suitable thermal, chemical, irradiation incineration, filtration or other treatment method, or by a combination of such prescribed and effective methods guided by validated and monitoring procedures.
9. **Waste disposal.**-(1) Risk waste shall be disposed of in accordance to the procedure provided in Schedule-I.
- (2) The operator, occupier, owner of the Hospital waste disposal and treatment facility shall obtain approval from the Agency under the section 17.
10. **Accidents and spillages.**- (1) In case of accidents or spillages the emergency procedures mentioned in the Hospital Waste Management Plan shall be implemented immediately and same shall be reported to the Agency.
11. **Maintenance of Record.**-(1) Every Hospital shall maintain records related to the management of hospital waste in accordance with these rules.
- (2) All records shall be subject to inspection and verification by the Agency at any time.
12. **Immunization.** A course of Hepatitis B vaccine should be offered to all employees responsible for managing of hospital waste who are at risk of exposure to human blood, blood products, or body secretions and the employees may also be intimated from time to time for tetanus, diphtheria, and polio. In facilities where employees are in contact with animals and their wastes, employees shall be offered rabies vaccine.
13. **Inspection.**-(1) An Authorized Officer may inspect any Hospital, located within the area of his jurisdiction to check that the provisions of these rules are complied with by the Hospital.
- (2) If an Authorized Officer found any contravention of any provision of these rules, he shall take legal action as per the sub-section (2) of section 22.
14. **Applicability of section 13 and 14.**- Each Hospital generating risk waste shall apply to the Agency for issuance of license for handling hazardous substances and the provision of section 13 and 14 shall apply for the purpose of granting such license.

~~DIRECTOR GENERAL~~  
SINDH ENVIRONMENTAL PROTECTION  
AGENCY

**SCHEDULE I**  
(see rule 2(f))  
**CATEGORIES OF Hospital WASTE**

| Category Number | Type of Waste Category                                                                                                                                                                                                                                                                                                                                            | Color Coding | Container Type                                                                                   | Treatment                      | Disposal                            |
|-----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|--------------------------------------------------------------------------------------------------|--------------------------------|-------------------------------------|
| 1.              | pathological waste<br>(tissues, organs, body parts, fetuses, blood and body fluids)                                                                                                                                                                                                                                                                               | Yellow       | Metal or tough Plastic bag                                                                       | -                              | Cremation/ Incineration/deep burial |
| 2.              | infectious waste<br>(waste contaminated by any type of pathogens such as bacteria, viruses, parasite or fungi and includes cultures from laboratory work, waste from surgeries and autopsies, waste from infected patients, discarded or disposable materials and equipment which have been in contact with such patients and infected animals from laboratories) | Red          | Disinfected container<br><br>High density plastic container resistant to penetration and leakage | Autoclaving / micro- waving.   | Incineration/Land fill              |
| 3.              | Sharp                                                                                                                                                                                                                                                                                                                                                             | Red          | Disinfected                                                                                      | All shall be cut or broken and | Landfill                            |

| Category Number | Type of Waste Category                                                                                                                                                                                                                                         | Color Coding | Container Type                                                                   | Treatment                                                                                                                      | Disposal                           |
|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|----------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|------------------------------------|
|                 | (whether infected or not, needles, syringes, scalpels, infusion sets, saws and knives, blades, broken glass and any other item that could cut or puncture)                                                                                                     |              | container<br>High density plastic container resistant to penetration and leakage | rendered non-reusable at the point of use; disinfection by chemical treatment autoclaving/microwaving and mutilation/shredding |                                    |
| 4.              | Pharmaceutical waste<br>(expired or unused pharmaceutical products, spilled contaminated pharmaceutical products, surplus drugs, vaccines or sera, and discarded items used in handling pharmaceutical such as bottles, boxes, gloves, masks, tubes, or vials) | Yellow       | Metal or tough Plastic bag                                                       | destruction                                                                                                                    | incineration/landfill              |
| 5.              | genotoxic waste<br>(cytotoxic drugs and outdated materials, vomitus, faeces or urine from patients treated with cytotoxic drugs or chemicals, and materials such as syringes and vials contaminated from the preparation and administration of such drugs)     | Yellow       |                                                                                  | Return to supplier for treatment                                                                                               | Incineration (>1300°C)<br>Landfill |
| 6.              | chemical waste<br>(Chemicals from diagnostic and experimental work, cleaning processes, housekeeping and disinfecting procedures, mercury                                                                                                                      | Yellow       | Metal or tough Plastic bag                                                       | Photo-chemicals should be de-silvered and vaporized.                                                                           | Landfill                           |

| Category Number | Type of Waste Category                                                                                                                                                                                                                           | Color Coding  | Container Type             | Treatment                           | Disposal                              |
|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|----------------------------|-------------------------------------|---------------------------------------|
|                 | waste such as from broken clinical equipment and spillage, and cadmium waste such as from discarded batteries)                                                                                                                                   |               |                            |                                     |                                       |
| 7.              | radioactive waste (liquid, solid and gaseous waste contaminated with radio nuclides generated from in-vitro analysis of body tissue and fluid, in-vivo body organ imaging and tumour localization, and investigation and therapeutic procedures. | Yellow        | Metal or tough Plastic bag | Treated in facility with lead walls |                                       |
| 8.              | non-risk waste (paper and cardboard, packaging, food waste and the like)                                                                                                                                                                         | Black / White | Any Suitable               | Recycling plant                     | Landfill                              |
| 9.              | Incineration Ash (ash from incineration of any bio-medical waste)                                                                                                                                                                                | Yellow        | Metal or tough Plastic bag | -                                   | Landfill                              |
| 10.             | Liquid Waste (waste generated from laboratory and washing, cleaning, house-keeping and disinfecting activities)                                                                                                                                  | -             | -                          | disinfection by chemical treatment  | Discharge into drains/ sewage system. |

## Explanation:

- Chemicals treatment using at least 1% hypochlorite solution or any other equivalent chemical reagent. It must be ensured that chemical treatment ensures disinfection.
- Multilation/shredding must be such so as to prevent unauthorised reuse.
- There will be no chemical pretreatment before incineration. Chlorinated plastics shall not be incinerated.
- Colour coding of waste categories with multiple treatment options as defined in Schedule I, shall be selected depending on treatment option chosen, which shall be as specified in Schedule I.
- Waste collection bags for waste types needing incineration shall not be made of chlorinated plastics.

- Category 9 (liquid) do not require containers/bags.
- Labelling : date, point of production, ward and hospital, quantity and description of waste and prominently displaying the biohazard symbol

## SCHEDULE II

(see rule 4(2)(f))

## LABEL FOR BIO-MEDICAL WASTE CONTAINERS/BAGS

BIOHAZARD SYMBOL



BIOHAZARD

CYTOTOXIC HAZARD SYMBOL



CYTOTOXIC

**HANDLE WITH CARE**

Note :Label shall be non-washable and prominently visible.

**Karachi: Printed at the Sindh Government Press  
19-12-2014**