

## **Ministry of Environment and Forest**

### **Notification**

**New Delhi, 20<sup>th</sup> July, 1998**

**S.O. 630(E)** – Whereas a notification in exercise of the powers conferred by Sections 6, 8 and 25 of the Environment (Protection) Act, 1986 (29 of 1986) was published in the Gazette vide S.O. 746 (E) dated 16 October, 1997 inviting objections from the public within 60 days from the date of the publication of the said notification on the Bio-Medical Waste (Management and Handling) Rules, 1998 and whereas all objections received were duly considered;

Now, therefore, in exercise of the powers conferred by section 6, 8 and 25 of the Environment (Protection) Act, 1986 the Central Government hereby notifies the rules for the management and handling of bio-medical waste.

#### **Short Title and Commencement :**

- 1. These rules may be called the Bio-Medical Waste (Management and Handling) Rules, 1998.**
- 2. They shall come into force on the date of their publication in the official Gazette.**

### **Application**

These rules apply to all process who generate, collect, receive, store, transport, treat, dispose, or handle bio-medical waste in any form.

### **Definations**

In these rules unless the context otherwise requires :-

- 1. "Act" means the Environment (Protection) Act, 1986 (29 of 1986);**
- 2. "Animal House" means a place where animals are reared/kept for experiments or testing purposes;**
- 3. "Authorisation" means permission granted by the prescribed authority for the generation, collection, reception, storage, transportation, treatment, disposal and /or any other form of handling of bio-medical waste in accordance with these rules and any guidelines issued by the Central Government.**
- 4. "Authorised Person" means an occupier or operator authorised by the prescribed authority to generate, collect, receive, store, transport, treat, dispose and / or handle bio-medical waste in accordance with these rules and any guidelines issued by the Central Government.**

5. "Bio-medical waste" means any waste, which is generated during the diagnosis, treatment or immunisation of human beings or animals or in research activities pertaining thereto or in the production or testing of biological, and including categories mentioned in [Schedule-I](#);
6. "Biological" means any preparation made from organisms or micro-organisms or product of metabolism and biochemical reactions intended for use in the diagnosis, immunisation or the treatment of human beings or animals or in research activities pertaining thereto;
7. "Bio-medical waste treatment facility" means any facility wherein treatment, disposal of bio-medical waste or processes incidental to such treatment or disposal is carried out;
8. "Occupier" in relation to any institution, animal bio-medical waste, which includes a hospital, nursing home, clinic dispensary, veterinary institution, animal house, pathological laboratory, blood bank by whatever name called, means a person who has control over that institution and / or its premises.
9. "Operator of a bio-medical waste facility" means a person who owns or controls or operates a facility for the collection, reception, storage, transport, treatment, disposal or any other form of handling of bio-medical waste;
10. "Schedule" means schedule appended to these rules

## **Schedule - I**

(See Rule 5)

### **Categories of Bio - Medical Wastes**

Option	Waste Category	Treatment & disposal
Category No. 1	Human Anatomical Waste (human tissues, organs, body parts)	Incineration @/ deep burial*
Category No.2	Animal Waste (animal tissues, organs, body parts carcasses, bleeding parts, fluid, blood and experimental animals used in research, waste generated by veterinary hospitals colleges, discharge from hospitals, animal houses)	Incineration @/ deep burial*
Category No.3	Microbiology & Biotechnology Waste (wastes from laboratory cultures, stocks or specimens of micro organisms live or attenuated vaccines, human and animal cell culture used in research and infectious agents from research and industrial laboratories, wastes from production of biological toxins, dishes and devices used for transfer of cultures)	Local autoclaving/micro-waving / incineration@.
Category No.4	Waste sharps	Disinfecting (chemical

	<b>(needles, syringes, scalpels, blades, glass, etc. that may cause puncture and cuts. This includes both used and unused sharps).</b>	<b>treatment @@/auto calving/ microwaving and mutilation /shredding.</b>
<b>Category No.5</b>	<b>Discarded Medicines and Cytotoxic drugs (Wastes comprising of outdated, contaminated and discarded medium)</b>	<b>Incineration@/destruction and drugs disposal in secured landfills.</b>
<b>Category No.6</b>	<b>Solid Waste (Items contaminated with blood, and body fluids including cotton, dressings, soiled plaster casts, lines, bedding, other material contaminated with blood)</b>	<b>Incineration @ autoclaving / microwaving.</b>
<b>Category No.7</b>	<b>Solid Waste (Wastes generated from disposable items other than the waste sharps such as tubing's, catheters, intravenous sets etc).</b>	<b>Disinfection by chemical treatment @@ autoclaving / microwaving and mutilation / shredding##.</b>
<b>Category No.8</b>	<b>Liquid Waste (waste generated from laboratory and washing, cleaning, house keeping and disinfecting activities)</b>	<b>disinfection by chemical treatment @@ autoclaving / microwaving and mutilation / shredding##.</b>
<b>Category No.9</b>	<b>Incineration Ash (ash from incineration of any bio-medical waste)</b>	<b>disposal in municipal landfill.</b>
<b>Category No.10</b>	<b>Chemical Waste (Chemicals used in production of biological, chemicals used in disinfection, as insecticide, etc.)</b>	<b>Chemical treatment @@ and discharge into drains for liquids and secured landfill for solids.</b>

**@ @** Chemicals treatment using at least 1% hypochlorite solution or any other equivalent chemical reagent. It must be ensured that chemical treatment ensures disinfection.

**# #** Multination / shredding must be such so as to prevent unauthorised reuse.

**@** There will be no chemical pretreatment before incineration. Chlorinated plastics shall not be incinerated.

\* Deep burial shall be an option available only in towns with population less than five lakhs and in rural area.

It shall be the duty of every occupier of an institution generating bio-medical waste which includes a hospital, nursing home, clinic, dispensary, veterinary institution, animal house, pathological

laboratory, blood bank by whatever name called to take all steps to ensure that such waste is handled without any adverse effect to human health and environment.

### **Treatment and Disposal**

1. Bio-medical waste shall be treated and disposed of in accordance with [Schedule-1](#) and in compliance with the standards prescribed in [Schedule-V](#).
2. Every occupier, where required, shall set up in accordance with the time schedule in [Schedule-VI](#), requisite bio-medical waste treatment facilities like incinerator, autoclave, microwave system for the treatment of waste, or, ensure requisite treatment of waste at a common waste treatment facility or any other waste treatment facility.

### **Schedule - I** (See Rule 5)

#### **Categories of Bio - Medical Wastes**

Option	Waste Category	Treatment & disposal
<b>Category No. 1</b>	Human Anatomical Waste (human tissues, organs, body parts)	<b>Incineration @/ deep burial*</b>
<b>Category No.2</b>	Animal Waste (animal tissues, organs, body parts carcasses, bleeding parts, fluid, blood and experimental animals used in research, waste generated by veterinary hospitals colleges, discharge from hospitals, animal houses)	<b>Incineration @/ deep burial*</b>
<b>Category No.3</b>	Microbiology & Biotechnology Waste (wastes from laboratory cultures, stocks or specimens of micro organisms live or attenuated vaccines, human and animal cell culture used in research and infectious agents from research and industrial laboratories, wastes from production of biological toxins, dishes and devices used for transfer of cultures)	<b>Local autoclaving/microwaving / incineration@.</b>
<b>Category No.4</b>	Waste sharps (needles, syringes, scalpels, blades, glass, etc. that may cause puncture and cuts. This	<b>Disinfecting (chemical treatment @@/auto calving/ microwaving and mutilation</b>

	includes both used and unused sharps).	/shredding.
<b>Category No.5</b>	Discarded Medicines and Cytotoxic drugs (Wastes comprising of outdated, contaminated and discarded medium)	<b>Incineration@/destruction and drugs disposal in secured landfills.</b>
<b>Category No.6</b>	Solid Waste (Items contaminated with blood, and body fluids including cotton, dressings, soiled plaster casts, lines, bedding, other material contaminated with blood)	<b>Incineration @ autoclaving / microwaving.</b>
<b>Category No.7</b>	Solid Waste (Wastes generated from disposable items other than the waste sharps such as tubing's, catheters, intravenous sets etc).	<b>Disinfection by chemical treatment @@ autoclaving / microwaving and mutilation / shredding##.</b>
<b>Category No.8</b>	Liquid Waste (waste generated from laboratory and washing, cleaning, house keeping and disinfecting activities)	<b>disinfection by chemical treatment @@ autoclaving / microwaving and mutilation / shredding##.</b>
<b>Category No.9</b>	Incineration Ash (ash from incineration of any bio-medical waste)	<b>disposal in municipal landfill.</b>
<b>Category No.10</b>	Chemical Waste (Chemicals used in production of biological, chemicals used in disinfection, as insecticide, etc.)	<b>Chemical treatment @@ and discharge into drains for liquids and secured landfill for solids.</b>

@ @ Chemicals treatment using at least 1% hypochlorite solution or any other equivalent chemical reagent. It must be ensured that chemical treatment ensures disinfection.

## Multination / shredding must be such so as to prevent unauthorised reuse.

@ There will be no chemical pretreatment before incineration. Chlorinated plastics shall not be incinerated.

\* Deep burial shall be an option available only in towns with population less than five lakhs and in rural area.

## **Schedule - V**

(See Rule 5 and [Schedule-1](#))

### **Standards for Treatment and Disposal of Bio-Medical Wastes**

Standards for Incinerators:

All incinerators shall meet the following operating and emission standards.

**A. Operating Standards**

- 1. Combustion efficiency (CE) shall be at least 99.00%.**
- 2. The Combustion efficiency is computed as follows.**

3. The temperature of the primary chamber shall be 800 = 50 deg.C.
4. The secondary chamber gas residence time shall be at least 1 (one) second at 1050=50C, with minimum 3% Oxygen in the stack gas.

**B. Emission Standards**

	<b>Parameters</b>	<b>Concentration mg/Nm3 at (12% CO2 correction)</b>
(1)	<b>Particulate matter</b>	150
(2)	<b>Nitrogen Oxides</b>	450
(3)	<b>HCL</b>	50
(4)	<b>Minimum stack height shall be 30 meter's above ground</b>	
(5)	<b>Volatile organic compounds in ash shall not be more than 0.01%</b>	

**Note :**

- Suitably designed pollution control devices should be installed / retrofitted with the incinerator to achieve the above emission limits, if necessary.
- Wastes to be incinerated shall not be chemically treated with any chlorinated disinfectants.
- Chlorinated plastics shall not be incinerated.
- Toxic metals in incineration ash shall be limited within the regulatory quantities as defined under the Hazardous Waste (Management and Handling Rules), 1989.
- Only low sulphur fuel like L.D.O./L.S.H.S/Diesel shall be used as fuel in the incinerator.

**Standards for Waste Autoclaving :**

The autoclave should be dedicated for the purposes of disinfecting and treating bio-medical waste.

- I. When operating a gravity flow autoclave, medical waste shall be subjected to :
  - i. a temperature of not less than 121 C<sup>o</sup> and pressure of 15 pounds per square inch (psi) for an autoclave residence time of not less than 60 minutes; or

- ii. a temperature of not less than 135C<sup>0</sup> and a pressure of 31 psi for an autoclave residence time of not less than 45 minutes/ or
- iii. a temperature of not less than 149 C<sup>0</sup> and a pressure of 52 psi for an autoclave residence time of not less than 30 minutes.

**II. When operating a vacuum autoclave, medical waste shall be subjected to a minimum of one pre-vacuum pulse to purge the autoclave of all air. The waste shall be subjected to the following :**

- i. a temperature of not less than 121<sup>0</sup> C and pressure of 15 psi per an autoclave residence time of not less than 45 minutes; or
- ii. a temperature of not less than 135C<sup>0</sup> and a pressure of 31 psi for an autoclave residence time of not less than 30 minutes;

**III. Medical waste shall not be considered properly treated unless the time, temperature and pressure indicators indicate that the required time, temperature and pressure were reached during the autoclave process. If for any reasons, time temperature or pressure indicates that the required temperature, pressure or residence time was not reached, the entire load of medical waste must be autoclaved again until the proper temperature, pressure and residence time were achieved.**

**IV. Recording of operational parameters**

**Each autoclave shall have graphic or computer recording devices which will automatically and continuously monitor and record dates, time of day, load identification number and operating parameters throughout the entire length of the autoclave cycle.**

**V. Validation test**

**Spore testing :The autoclave should completely and consistently kill the approved biological indicator at the maximum design capacity of each autoclave unit. Biological indicator for autoclave shall be a Bacillus stearth ermophilus spore using vials or spore strips, with at least 1 x 10<sup>4</sup> spores per milliliter. Under no circumstances will an autoclave have minimum operating parameters less than a residence time of 30 minutes, regardless of temperature and pressure, a temperature less than 121<sup>0</sup> C or a pressure less than psi.**

**VI. Routine Test**

A chemical indicator strip / tape that changes colour when a certain temperature is reached and can be used to verify that a specific temperature has been achieved. It may be necessary to use more than one strip over the waste package at different location to ensure that the inner content of the package has been adequately autoclaved.

**Standard for Liquid Waste :**

The effluent generated from the hospital should conform to the following limits

Parameters	Permissible Limits
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PH	6.5 - 9.0
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Suspended Solids	100 mg/l
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Oil and grease	10 mg/l
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BOD	30 mg/l
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COD	250 mg/l
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**Bio-assay test . 90% survival of fish after 96 hours in 100% effluent**

These limits are applicable to those hospitals which are either connected with sewers without terminal sewage treatment plant or not connected to public sewers. For discharge into public sewers with terminal facilities, the general standards as notified under the Environment (Protection) Act, 1986 shall be applicable.

**Standards of Microwaving :**

1. **Microwave treatment shall not be used for cytotoxic, hazardous or radioactive wastes, contaminated animal car-causes, body parts and large metal items.**
2. **The microwave system shall comply with the efficacy test / the supplier before operation of the unit may provide routine tests and a performance guarantee.**
3. **The microwave should completely and consistently kill the bacteria and other pathogenic organisms that is ensured by approved biological indicator at the maximum design capacity of each microwave unit. Biological indicators for microwave shall be Bacillus Sub spores using vials or spore strips with atleast  $1 \times 10^4$  spores per milliliter.**

**Standards for Deep Burial**

1. **A pit or trench should be dug about 2 meters deep. It should be half filled with waste, then covered with lime within 50 cm of the surface, before filling the rest of the pit with soil.**
2. **It must be ensured that animals do not have any access to burial sites. Covers of galvanized iron / wire meshes may be used.**
3. **On each occasion, when wastes are added to the pit, a layer of 10 cm of soil shall be added to cover the wastes.**
4. **Burial must be performed under close and dedicated supervision.**
5. **The deep burial site should be relatively impermeable and no shallow well should be close to the site.**
6. **The pits should be distant from habitation and sites so as that no contamination occurs of any surface water or ground water. The area should not be prone to flooding or erosion.**
7. **The location of the deep burial site will be authorised by the prescribed authority. The institution shall maintain a record of all pits for deep burial.**



## **Schedule - VI**

(See Rule 5)

### **Schedule for Waste Treatment Facilities like Incinerator / Autoclave / Microwave System**

<b>A.</b>	Hospitals and nursing homes in towns with population of 30 lakhs and above.	By 31 <sup>st</sup> December, 1999 or earlier.
<b>B.</b>	Hospitals and nursing homes in towns with population of below 30 lakhs	
	a) with 500 beds and above	By 31 <sup>st</sup> December, 1999 or earlier
	b) with 200 beds and above but less than 500 beds	By 31 <sup>st</sup> December, 2000 or earlier
	c) with 50 beds and above but less than 200 beds	By 31 <sup>st</sup> December, 2001 or earlier
	d) with less than 50 beds	By 31 <sup>st</sup> December, 2002 or earlier
<b>C.</b>	All other institutions generating bio-medical waste not included in A and B above.	By 31 <sup>st</sup> December, 2002 or earlier

### **Segregation, Packing, Transportation and Storage - 1**

1. Bio-medical waste shall be treated and disposed of in accordance with [Schedule-I](#), and in compliance with the standards prescribed in [Schedule-V](#).
2. Every occupier, where required, shall set up in accordance with the time schedule in [Schedule-VI](#), requisite bio-medical waste treatment facilities like incinerator, autoclave, microwave system for the treatment of waste, or, ensure requisite treatment of waste at a common waste treatment facility or any other waste treatment facility.

## Schedule - I

(See Rule 5)

### Categories of Bio - Medical Wastes

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Category No. 1	Human Anatomical Waste (human tissues, organs, body parts)	Incineration @/ deep burial*
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Category No.4	Waste sharps (needles, syringes, scalpels, blades, glass, etc. that may cause puncture and cuts. This includes both used and unused sharps).	Disinfecting (chemical treatment @@/auto calving/ microwaving and mutilation /shredding.
Category No.5	Discarded Medicines and Cytotoxic drugs (Wastes comprising of outdated, contaminated and discarded medium)	Incineration@/destruction and drugs disposal in secured landfills.
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Category No.8	Liquid Waste	disinfection by chemical

	(waste generated from laboratory and washing, cleaning, house keeping and disinfecting activities)	treatment @@ autoclaving / microwaving and mutilation / shredding##.
Category No.9	Incineration Ash (ash from incineration of any bio-medical waste)	disposal in municipal landfill.
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@ @ Chemicals treatment using at least 1% hypochlorite solution or any other equivalent chemical reagent. It must be ensured that chemical treatment ensures disinfection.

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@ There will be no chemical pretreatment before incineration. Chlorinated plastics shall not be incinerated.

\* Deep burial shall be an option available only in towns with population less than five lakhs and in rural area.

## **Schedule - V**

(See Rule 5 and [Schedule-I](#))

### **Standards for Treatment and Disposal of Bio-Medical Wastes**

Standards for Incinerators:

All incinerators shall meet the following operating and emission standards.

**A. Operating Standards**

1. **Combustion efficiency (CE) shall be at least 99.00%.**
2. **The Combustion efficiency is computed as follows.**
3. **The temperature of the primary chamber shall be 800 = 50 deg.C.**
4. **The secondary chamber gas residence time shall be at least 1 (one) second at 1050=50C, with minimum 3% Oxygen in the stack gas.**

**B. Emission Standards**

	Parameters	Concentration mg/Nm <sup>3</sup> at (12% CO <sub>2</sub> correction)
(1)	Particulate matter	150

(2)	<b>Nitrogen Oxides</b>	450
(3)	<b>HCL</b>	50
(4)	<b>Minimum stack height shall be 30 meter's above ground</b>	
(5)	<b>Volatile organic compounds in ash shall not be more than 0.01%</b>	

**Note :**

- **Suitably designed pollution control devices should be installed / retrofitted with the incinerator to achieve the above emission limits, if necessary.**
- **Wastes to be incinerated shall not be chemically treated with any chlorinated disinfectants.**
- **Chlorinated plastics shall not be incinerated.**
- **Toxic metals in incineration ash shall be limited within the regulatory quantities as defined under the Hazardous Waste (Management and Handling Rules), 1989.**
- **Only low sulphur fuel like L.D.O./L.S.H.S/Diesel shall be used as fuel in the incinerator.**

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  - i. a temperature of not less than 121 C<sup>0</sup> and pressure of 15 pounds per square inch (psi) for an autoclave residence time of not less than 60 minutes; or**
  - ii. a temperature of not less than 135C<sup>0</sup> and a pressure of 31 psi for an autoclave residence time of not less than 45 minutes/ or**
  - iii. a temperature of not less than 149 C<sup>0</sup> and a pressure of 52 psi for an autoclave residence time of not less than 30 minutes.**
  
- II. When operating a vacuum autoclave, medical waste shall be subjected to a minimum of one pre-vacuum pulse to purge the autoclave of all air. The waste shall be subjected to the following :**
  - i. a temperature of not less than 121<sup>0</sup> C and pressure of 15 psi per an autoclave residence time of not less than 45 minutes; or**
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**Each autoclave shall have graphic or computer recording devices which will automatically and continuously monitor and record dates, time of day, load identification number and operating parameters throughout the entire length of the autoclave cycle.**

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**Spore testing :The autoclave should completely and consistently kill the approved biological indicator at the maximum design capacity of each autoclave unit. Biological indicator for autoclave shall be a Bacillus stearth ermophilus spore using vials or spore strips, with at least  $1 \times 10^4$  spores per milliliter. Under no circumstances will an autoclave have minimum operating parameters less than a residence time of 30 minutes, regardless of temperature and pressure, a temperature less than  $121^0$  C or a pressure less than psi.**

**VI. Routine Test**

A chemical indicator strip / tape that changes colour when a certain temperature is reached and can be used to verify that a specific temperature has been achieved. It may be necessary to use more than one strip over the waste package at different location to ensure that the inner content of the package has been adequately autoclaved.

**Standard for Liquid Waste :**

The effluent generated from the hospital should conform to the following limits

Parameters            Permissible Limits

**pH                        6.5 - 9.0**

**Suspended Solids 100 mg/l**

**Oil and grease        10 mg/l**

**BOD                     30 mg/l**

**COD                     250 mg/l**

**Bio-assay test .      90% survival of fish after 96 hours in 100% effluent**

These limits are applicable to those hospitals which are either connected with sewers without terminal sewage treatment plant or not connected to public sewers. For discharge into public sewers with terminal facilities, the general standards as notified under the Environment (Protection) Act, 1986 shall be applicable.

**Standards of Microwaving :**

- 1. Microwave treatment shall not be used for cytotoxic, hazardous or radioactive wastes, contaminated animal car-causes, body parts and large metal items.**

2. The microwave system shall comply with the efficacy test / the supplier before operation of the unit may provide routine tests and a performance guarantee.
3. The microwave should completely and consistently kill the bacteria and other pathogenic organisms that is ensured by approved biological indicator at the maximum design capacity of each microwave unit. Biological indicators for microwave shall be Bacillus Sub spores using vials or spore strips with atleast  $1 \times 10^4$  spores per milliliter.

#### Standards for Deep Burial

1. A pit or trench should be dug about 2 meters deep. It should be half filled with waste, then covered with lime within 50 cm of the surface, before filling the rest of the pit with soil.
2. It must be ensured that animals do not have any access to burial sites. Covers of galvanized iron / wire meshes may be used.
3. On each occasion, when wastes are added to the pit, a layer of 10 cm of soil shall be added to cover the wastes.
4. Burial must be performed under close and dedicated supervision.
5. The deep burial site should be relatively impermeable and no shallow well should be close to the site.
6. The pits should be distant from habitation and sites so as that no contamination occurs of any surface water or ground water. The area should not be prone to flooding or erosion.
7. The location of the deep burial site will be authorised by the prescribed authority.
8. The institution shall maintain a record of all pits for deep burial.

### **Schedule - VI**

(See Rule 5)

#### Schedule for Waste Treatment Facilities like Incinerator / Autoclave / Microwave System

A.	Hospitals and nursing homes in towns with population of 30 lakhs and above.	By 31 <sup>st</sup> December, 1999 or earlier.
B.	Hospitals and nursing homes in towns with population of below 30 lakhs	
	a) with 500 beds and above	By 31 <sup>st</sup> December, 1999 or earlier
	b) with 200 beds and above but less than 500 beds	By 31 <sup>st</sup> December, 2000 or earlier

	<p>c) with 50 beds and above but less than 200 beds</p> <p>d) with less than 50 beds</p>	<p>By 31<sup>st</sup> December, 2001 or earlier</p> <p>By 31<sup>st</sup> December, 2002 or earlier</p>
C.	All other institutions generating bio-medical waste not included in A and B above.	By 31 <sup>st</sup> December, 2002 or earlier



### Segregation, Packaging, Transportation and Storage - 2

1. Bio-medical waste shall not be mixed with other wastes.
2. Bio-medical waste shall be segregated into containers/bags at the point of generation in accordance with [Schedule-II](#) prior to its storage, transportation, treatment and disposal. The containers shall be labeled according to Schedule-III.
3. If a container is transported from the premises where bio-medical waste is generated to any waste treatment facility outside the premises, the container shall, apart from the label prescribed in Schedule-III, also carry information prescribed in [Schedule-IV](#).
4. Notwithstanding anything contained in the Motor Vehicles Act, 1988, or rules, thereunder, untreated bio-medical waste shall be transported only in such vehicle as may be autopsied for the purpose by the competent authority as specified by the government.
5. No untreated bio-medical waste shall be kept stored beyond a period of 48 hours:
  - Provided that if for any reason it becomes necessary to store the waste beyond such period the authorised person must take permission of the prescribed authority and take measures to ensure that the waste does not adversely affect human health and the environment.

### Schedule - II

(See Rule 6)

**Colour Coding and Type of Container for disposal of Bio\_Medical Wastes**

<b>Colour coding</b>	<b>Type of container</b>	<b>Waste category</b>	<b>Treatment options as per Schedule-I</b>
<b>Yellow</b>	Plastic bag	Cat.1, Cat.2, and Cat.3, Cat.6.	Incineration / deep burial
<b>Red</b>	Disinfected container/plastic bag	Cat.3, Cat.6, Cat.7	Autoclaving/Microwaving/Chemical Treatment.
<b>Blue/translucent</b>	Plastic bag/puncture proof container	Cat.4, Cat.7.	Autoclaving/Microwaving/Chemical Treatment and destruction / Shredding.
<b>Black</b>	Plastic bag	Cat.5 and Cat.9 and Cat.10.(solid)	Disposal in secured landfill.

**Notes :**

1. Color 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](#).
2. Waste collection bags for waste types needing incineration shall not be made of chlorinated plastics.
3. Categories 8 and 10 (liquid) do not require containers/bags.
4. Category 3 if disinfected locally need not be put in containers/bags.

**Schedule - I**



(See Rule 5)

**Categories of Bio - Medical Wastes**

Option	Waste Category	Treatment & disposal
Category No. 1	<b>Human Anatomical Waste</b> (human tissues, organs, body parts)	Incineration @/ deep burial*
Category No.2	<b>Animal Waste</b> (animal tissues, organs, body parts carcasses, bleeding parts, fluid, blood and experimental animals used in research, waste generated by veterinary hospitals colleges, discharge from hospitals, animal houses)	Incineration @/ deep burial*
Category No.3	<b>Microbiology &amp; Biotechnology Waste</b> (wastes from laboratory cultures, stocks or specimens of micro organisms live or attenuated vaccines, human and animal cell culture used in research and infectious agents from research and industrial laboratories, wastes from production of biological toxins, dishes and devices used for transfer of cultures)	Local autoclaving/micro-waving / incineration@.
Category No.4	<b>Waste sharps</b> (needles, syringes, scalpels, blades, glass, etc. that may cause puncture and cuts. This includes both used and unused sharps).	Disinfecting (chemical treatment @@/auto calving/ microwaving and mutilation /shredding.
Category No.5	<b>Discarded Medicines and Cytotoxic drugs</b> (Wastes comprising of outdated, contaminated and discarded medium)	Incineration@/destruction and drugs disposal in secured landfills.
Category No.6	<b>Solid Waste</b> (Items contaminated with blood, and body	Incineration @ autoclaving / microwaving.

	fluids including cotton, dressings, soiled plaster casts, lines, bedding, other material contaminated with blood)	
Category No.7	<b>Solid Waste</b> (Wastes generated from disposable items other than the waste sharps such as tubing's, catheters, intravenous sets etc).	Disinfection by chemical treatment @@ autoclaving / microwaving and mutilation / shredding##.
Category No.8	<b>Liquid Waste</b> (waste generated from laboratory and washing, cleaning, house keeping and disinfecting activities)	disinfection by chemical treatment @@ autoclaving / microwaving and mutilation / shredding##.
Category No.9	<b>Incineration Ash</b> (ash from incineration of any bio-medical waste)	disposal in municipal landfill.
Category No.10	<b>Chemical Waste</b> (Chemicals used in production of biological, chemicals used in disinfection, as insecticide, etc.)	Chemical treatment @@ and discharge into drains for liquids and secured landfill for solids.

**@ @** Chemicals treatment using at least 1% hypochlorite solution or any other equivalent chemical reagent. It must be ensured that chemical treatment ensures disinfection.

**# #** Multination / shredding must be such so as to prevent unauthorised reuse.

**@** There will be no chemical pretreatment before incineration. Chlorinated plastics shall not be incinerated.

\* Deep burial shall be an option available only in towns with population less than five lakhs and in rural area.

### **Schedule - IV**

(see Rule 6)

**Label for Transport of Bio-Medical Wastes Containers / Bages**

Day ..... Month .....

Year .....

Waste category No.....

Date of generation .....

Waste class

Waste description

**Sender's Name & Address**

**Receiver's Name & Address**

Phone No. ....

Phone No.....

Telex No. ....

Telex No.....

Fax No.....

Fax No.....

**Contact Person** .....

Contact Person .....

In case of emergency please contact :

Name & Address :-

Phone No.

Note :

Label shall be non-washable and prominently visible.

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