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**NATIONAL ENVIRONMENTAL STANDARDS AND
REGULATIONS ENFORCEMENT AGENCY
(ESTABLISHMENT) ACT, 2007**

**NATIONAL ENVIRONMENTAL (HEALTHCARE WASTE
CONTROL) REGULATIONS, 2021**



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S. I. No. 44 of 2021

**NATIONAL ENVIRONMENTAL STANDARDS AND
REGULATIONS ENFORCEMENT AGENCY
(ESTABLISHMENT) ACT, 2007**

**NATIONAL ENVIRONMENTAL (HEALTHCARE WASTE
CONTROL) REGULATIONS, 2021**

In exercise of the powers conferred on me by sections 25 and 34 of the National Environmental Standards and Regulations Enforcement Agency (Establishment) Act, 2007, and all other powers enabling me in that behalf, I, DR. MOHAMMAD MAHMOOD ABUBAKAR, Honourable Minister of Environment, make the following Regulations—

[3rd Day of March, 2021]

Commence-
ment.

PART I—OBJECTIVE AND APPLICATION

1.—(1) The objective of these Regulations is to—

Objectives
and
application.

(a) prevent and minimise waste emanating from activities of healthcare facilities with a view to safeguarding human health and the Nigerian environment; and

(b) manage healthcare waste, including all categories of healthcare waste as specified in the First Schedule to these Regulations.

(2) These Regulations shall apply to—

- (a) healthcare waste generators, handlers and treatment facilities; and
(b) categories of healthcare waste.

2. A healthcare facility shall prepare and implement a functional Healthcare Waste Management Plan (HCWMP), which shall include measures to be taken—

Healthcare
waste
management
plan.

- (a) in the generation of healthcare waste;
(b) to safely contain, store and transport healthcare waste;
(c) in the effective treatment and disposal of healthcare waste; and
(d) to mitigate the adverse effects of such healthcare waste.

3.—(1) The appropriate collection, storage, transportation, treatment and final disposal of waste shall be the responsibility of the healthcare facility generating the waste within the specified standards and guidelines.

Emergency
response.

(2) In the event of an incident resulting in an adverse impact on the environment, the facility shall be responsible for—

- (a) the cost of damage assessment and control;
(b) remediation;

- (c) reclamation ; and
- (d) restoration.

Pollution
control.

4. A healthcare facility or its licensed agent shall—

(a) prevent contamination arising from hazardous and associated waste, which may likely cause pollution of the environment including soil, surface and ground water ;

(b) have an impermeable base for any ancillary equipment and provide a bund wall or any other appropriate technology in the event of any unanticipated discharge or spillage ; and

(c) install underground tanks and fuel dumps with leak detection equipment, which shall be regularly inspected for leakages to prevent soil contamination and seepage into ground water.

Effluent
limitation.

5.—(1) The National Environmental Standards in relation to effluent limitations for the sector shall be as prescribed in the Second Schedule to these Regulations.

(2) Every effluent shall be deemed to be unacceptable where—

(a) the concentration of any of its parameters exceeds the permissible limits as prescribed in the Second Schedule to these Regulations ; and

(b) it is discharged from a facility without appropriate pre- treatment.

(3) Effluent under sub-regulation (2) of this regulation shall be treated to attain the minimum standards as prescribed in the Second Schedule to these Regulations before it is discharged.

Prohibition
of untreated
discharges.

6.—(1) A healthcare facility or healthcare waste treatment facility shall not discharge effluent or discard spent oil, grease, wash-water, debris, flammable liquids, paints, litter, sludge or sediments on land, into a water course or water body except it has been treated to the permissible limits as prescribed in the Second Schedule to these Regulations.

(2) A person shall not wash a hazardous spill down the public drainage system under any circumstance.

(3) Notwithstanding the provisions of sub-regulation (1) of this regulation, any healthcare facility or waste treatment facility using an effluent for re-use purposes, shall ensure that the concentration or value of any of the parameters of the effluent conforms to standards as prescribed in the Second Schedule to these Regulations.

Effluent
treatment.

7. A healthcare facility or healthcare waste treatment facility shall—

(a) carry out efficient treatment of its waste at all times ;

(b) ensure that the sludge containing heavy metals or other toxic materials is disposed of in an Environmentally Sound Manner (ESM) in a designated disposal site ;

(c) ensure the treatment and disposal of toxic organics contained in both effluent and sludge as approved by the Agency ;

(d) ensure that effluent is not diluted in order to achieve the standards prescribed in the Second Schedule to these Regulations ; and

(e) ensure that wastes containing toxic organics are treated with Best Available Technology (BAT) and by adopting Best Environmental Practices (BEP).

8.—(1) Healthcare facilities, and generators of chemical healthcare waste, shall be responsible for the neutralization, detoxification and removal of heavy metals and other toxic chemicals from wastewater before it is discharged into any environment, where they exceed the permissible limits.

Pre-Treatment of wastewater before discharging.

(2) Wastewater from radiological investigations shall be neutralised, detoxified or immobilised and treated before it is released into the environment in accordance with the existing National Regulations on Radioactive substances.

PART II—HEALTHCARE WASTE GENERATORS

9.—(1) A person shall not discard healthcare waste or similar waste anywhere except in a designated point within the facility.

Litter prohibition.

(2) An owner, operator, occupant or a person in charge of management or control of healthcare facilities shall not allow the release of healthcare waste into the environment.

(3) An occupant or passenger of an ambulance or a person in a moving vehicle shall not dispose of or drop any healthcare waste or any waste containing healthcare waste on the streets, roads, highways, public spaces and other undesigned places.

10. A healthcare facility or healthcare waste treatment facility that generates healthcare waste shall register with the appropriate Authority.

Registration.

11. A healthcare facility or healthcare waste treatment facility that generates healthcare waste shall—

Management of healthcare waste by waste generators.

(a) treat or cause to be treated such waste using Best Available Technology (BAT) and Best Environmental Practices (BEP) acceptable to the Agency ;

(b) exercise a duty of care to manage and dispose of the waste safely ;

(c) be responsible for the safe handling and environmentally sound disposal of the waste they generate ; and

(d) have a responsibility of the waste from the point of generation until its final treatment and disposal.

Segregation.

12. A health care facility or healthcare waste treatment facility that generates healthcare waste, shall at the point of generation and at all stages, segregate the waste using colour-coded containers and specified bin liners as prescribed in the Seventh Schedule to these Regulations.

Containment and storage.

13. A health care facility or healthcare waste treatment facility that generates healthcare waste shall ensure that such wastes are stored in appropriate coded containers at the designated points before its final disposal as prescribed in the Third Schedule to these Regulations.

Handling of healthcare waste by generators.

14. Every owner, operator, occupant or person in-charge of management or control of an institution generating healthcare waste, such as hospital, nursing home, clinic, dispensary, veterinary institution, animal house, pathological laboratory, blood bank by whatever name called, shall take all steps to ensure that such waste is handled without any adverse effect to human health and the environment.

Packaging and labelling.

15. A health care facility or healthcare waste treatment facility, generator of healthcare waste shall ensure that every container or package for storing such waste is secured, marked and labelled in accordance with the Sixth Schedule to these Regulations.

Prohibition of open burning.

16. A person or healthcare facility shall not openly burn or caused to be burnt any waste, including healthcare waste, in any environment in Nigeria as provided for under National Environmental (Control of Bush, Forest Fire and Open Burning) Regulations.

PART III—DUTIES AND OBLIGATIONS

Duties of owners of healthcare facilities.

17.—(1) A healthcare facility or healthcare waste treatment facility shall—

(a) report any disposal of healthcare waste in an undesignated location to the appropriate Authority ;

(b) be responsible for the collection and disposal of healthcare waste ;

(c) ensure adequate supply of water, cleaning reagents or materials and maintenance ;

(d) operate in line with duty-of-care in its day-to-day activities ; and

(e) maintain a standardised way of record keeping.

(2) A person in charge of management or control of any healthcare facility or healthcare waste treatment facility shall—

(a) provide adequate litter bins and receptacles in accordance with the specifications for recyclable materials at appropriate and easily accessible locations ;

(b) service, maintain and empty the receptacles regularly ;

- (c) keep the premises free from any form of litter at all times ;
- (d) ensure that all litter is collected and disposed of regularly ;
- (e) not reuse pails, drums, dumpsters, or bins earmarked for hazardous healthcare waste for the containment of general solid waste or for other purposes, except after being decontaminated and certified ;
- (f) ensure that all recyclable materials are neatly packed before evacuation for recycling ; and
- (g) ensure that healthcare wastes are segregated properly into the appropriate colour-coded lined waste bins.

18.—(1) Where a healthcare facility and healthcare waste treatment facility is new or the modification of an existing one is likely to have significant impact on the environment, the owner shall—

Reporting.

- (a) conduct site specific Environmental Impact Assessment (EIA) in accordance with the Environmental Impact Assessment Act ; and
- (b) submit such Environmental Impact Statement (EIS) duly issued by the Federal Ministry of Environment to the Agency.

(2) Within twelve months of the commencement of these Regulations, existing operators of healthcare facilities and healthcare waste treatment facilities, shall submit Environmental Audit Reports prepared by an accredited consultant and thereafter submit such Reports to the Agency, once in three years.

PART IV—HANDLING AND TREATMENT OF HEALTHCARE WASTE

19.—(1) Every owner, operator or occupant or person in-charge of management or control of healthcare facilities shall not handle, mix, treat, store, transport or dispose of non-hazardous items with hazardous healthcare wastes.

Prohibition of mixing of non-hazardous waste with hazardous healthcare waste.

(2) The collection of hazardous and non-hazardous wastes shall be supervised by a designated officer to prevent mixing of non-hazardous waste and hazardous healthcare waste.

(3) Non-hazardous healthcare waste shall be clearly identified in the healthcare setting and handled in accordance with the National Environmental (Sanitation and Waste Control) Regulations.

20. A registered healthcare waste handler shall in accordance with the National Environmental (Sanitation and Waste Control) Regulations and National Environmental Health Practice Regulations, undertake collection at the designated points and at scheduled times or periods, following the waste collection and transportation guidelines in the Fifth Schedule to these Regulations.

Healthcare Waste Collection.

21.—(1) A person shall not transport healthcare waste without a valid permit issued by the appropriate Authority.

(2) A person registered to transport healthcare waste shall comply with all operational conditions stated in the Fifth Schedule to these Regulations.

(3) A person who engages in the business of transporting healthcare waste shall be registered with the appropriate Authority.

(4) A person registered to transport healthcare waste shall ensure that—

(a) waste is collected from designated areas of operation and delivered to a designated transfer station, disposal site or plant ;

(b) the collection and transportation of waste is conducted in such a manner that will not cause scattering, escaping or flowing out of the waste ; and

(c) the vehicles and equipment for the transportation of waste are in state that shall prevent scattering, escaping, or flowing-out of the waste or emission of noxious smells, fumes and smoke from the waste.

Licensing
procedures.

22. The Agency shall have powers to—

(a) grant permit to qualified person, facilities to manage or treat healthcare waste ; and

(b) revoke Permit granted in accordance with the provision of the National Environmental (Permitting and Licensing Systems) Regulations.

List of
healthcare
waste.

23. Healthcare waste categories shall be as set-out in the First Schedule to these Regulations.

Permit for
healthcare
waste
treatment
facility.

24. A person shall not own or operate a healthcare waste treatment facility without a valid licence issued by the Agency.

Waste
storage
facilities.

25.—(1) A public or private healthcare waste treatment facility, shall comply with containment and storage guidelines set-out in the Third Schedule to these Regulations.

(2) Healthcare waste shall be stored separately according to planned methods of disposal or treatment.

Method of
Treatment of
healthcare
waste.

26.—(1) A healthcare waste treatment facility shall treat, or cause to be treated, healthcare waste as set-out in this regulation and the Ninth Schedule to these Regulation.

(2) Anatomical parts, such as pathological waste, shall be disposed of by interment, incineration, or alternative treatment technologies approved for

this type of waste and the emission standards for incineration shall be as set out in Schedule Eight to these Regulations.

(3) Pharmaceutical waste shall be treated by incineration or alternative treatment technologies approved for the treatment of such waste prior to disposal.

(4) Sharps shall be rendered non-infectious by incineration, steam sterilization and disinfection or any alternative treatment method approved by the Agency as contained in the injection safety policy in Nigeria as follows—

(a) sharps or fluid containers destined for off-site treatment and disposal shall include the generating healthcare facility's name and contact details ; and

(b) on-site healthcare waste treatment facilities treating sharps waste shall ensure that they are destroyed appropriately.

(5) Infectious waste such as biohazards, shall be treated using appropriate treatment methods approved by the Agency.

27. A public or private healthcare facility and waste treatment facility shall provide and ensure that their staff, including technicians and waste handlers, wear appropriate personal protective equipment as set-out in the Sixth Schedule to these Regulations.

Use of
Personal
Protective
Equipment.

28. A healthcare waste treatment facility shall not burn or cause to be burnt, any healthcare waste in Nigerian environment except in accordance with National Environmental (Sanitation and Waste Control) Regulations.

Prohibition
of burning of
healthcare
waste.

29. A healthcare waste treatment facility shall—

(a) only accept the type and quantity of healthcare waste it has the capacity to treat ; and

(b) where necessary, ensure that transportation from one treatment facility to another is carried out in accordance with the provisions of these Regulations.

Healthcare
waste
treatment
facility.

30.—(1) Healthcare waste at the household level shall at all times ensure that—

Homecare.

(a) hazardous healthcare wastes such as sharp and other hazardous waste, are preserved in such a way that they do not pose hazard to human health ;

(b) health professionals engaged in home-care healthcare wastes shall be responsible for ensuring proper storage and management of sharps ; and

(c) healthcare facility including pharmacies, patent medicine dealers, and others that gives or sells sharps to clients for household use, shall educate

them on the safe use and storage of these sharps and such wastes shall be disposed of by a designated person or body.

(2) Any clinic or pharmacy that releases sharps for home treatment shall have a retrieval plan for such sharps from their clients, so as to ensure safe disposal of sharps in line with the requirements of these Regulations.

(3) Healthcare waste from traditional medical centres and alternative medical practitioners shall be treated in the same manner as hazardous healthcare waste in subregulation (1) of this regulation.

Management
of
emergency
or disaster.

31. For incident management and control, healthcare establishments and Agencies in charge of emergency and disaster management, shall provide for the collection, storage and transportation of healthcare waste from the source of generation to the nearest healthcare waste treatment facility.

PART V—INSTITUTIONAL ROLES AND RESPONSIBILITIES

Role of the
Agency.

32. The Agency shall—

- (a) enforce compliance with the provisions of these Regulations ;
- (b) issue applicable permits as prescribed by these Regulations ;
- (c) ensure compliance with conditions set out in Permits ;
- (d) establish strategic alliances with other Federal Ministries, Departments and Agencies (MDAs), State Governments, Federal Capital Territory (FCT), Local Governments and other relevant stakeholders ;
- (e) ensure that the healthcare facility and healthcare waste treatment facilities comply with relevant environmental laws ;
- (f) embark on intensive environmental education and awareness campaign on sound healthcare waste management ;
- (g) develop and periodically review regulations, standards and guidelines on healthcare waste management ;
- (h) collaborate with relevant stakeholders with regard to exchange of data and information on healthcare waste management in Nigeria ; and
- (i) be responsible for the monitoring of all healthcare waste and healthcare waste treatment facilities.

Responsibility
of the state
and FCT

33. The states and FCT shall—

- (a) be responsible for the registration and monitoring of secondary healthcare facilities such as general hospitals and specialist hospitals ; and
- (b) register municipal and healthcare waste collectors.

34. The Local Government Areas shall have the following responsibilities—

The Local Government responsibility.

- (a) register municipal and healthcare waste collectors ;
- (b) register operators of healthcare waste treatment plants ;
- (c) ensure strict compliance with these Regulations by all field and outreach related healthcare intervention programs, including mass immunization campaigns ;
- (d) ensure the training of all personnel of primary healthcare centres and health posts in sound healthcare waste management practice ;
- (e) supervise the collection of wastes from healthcare facilities ;
- (f) monitor the activities of healthcare service providers outside of the formal health system in line with the provisions of these Regulations ; and
- (g) demand and obtain relevant data from registered healthcare service providers within its jurisdiction and forward same to appropriate authorities.

PART VI—ENFORCEMENT

35. The Agency shall have powers to serve enforcement notice to an owner or occupant of a premises in control or management of a healthcare facility or healthcare treatment facility centre, for contravention of any of the provisions of these Regulation, Guideline or any condition of Permit.

Enforcement action.

36.—(1) Where an owner or occupant in care of premises or in control or management of a healthcare facility or healthcare waste treatment facility is in contravention or is likely to contravene the provision of any regulation, guideline or condition of a Permit, the Agency shall serve an enforcement notice.

Enforcement notice.

(2) An enforcement notice shall specify the—

- (a) activities constituting the contravention or may likely give rise to a contravention ;
- (b) steps to be taken to remedy the contravention where it arises ; and
- (c) period within which those steps shall be taken.

37. An Enforcement Notice shall be delivered by hand, registered post or courier, newspaper publication or pasting the notice at the address of the owner or occupant of the premises.

Mode of service of enforcement notice.

38.—(1) Where a person fails to comply with an Enforcement Notice within the period specified pursuant to regulation 37(2)(c) of these Regulations, a second notice shall be served.

Failure to comply with enforcement notice.

(2) Where a person fails to comply with the second enforcement notice within the period specified in the notice, the Agency may serve Suspension Notice or take any other action as may be necessary.

(3) Where a Suspension Notice is served pursuant to sub-regulation (1) of this regulation, the permit granted shall on the service of such notice, cease to have effect as stated in the notice.

(4) The Agency may withdraw a Suspension Notice after verifying that the operator has complied with these Regulations.

PART VII—OFFENCES AND PENALTIES

Offences.

39. An owner or occupant in charge of a premises or in control or management of a healthcare waste facility shall—

- (a) not release or cause litter to be released into the environment ;
- (b) segregate healthcare waste for proper management ;
- (c) provide standard containers for storage of sorted healthcare wastes before collection ;
- (d) provide and service, maintain or empty receptacles for litter and recyclable materials ;
- (e) supply information as required for approval to operate healthcare waste treatment facility ;
- (f) maintain healthcare waste management facility in clean and orderly condition ;
- (g) comply with the decommissioning conditions of waste management facility as may be prescribed by the Agency or appropriate Authority ;
- (h) submit to the Agency within a specified period, information or data about materials received at the treatment facility or incinerator operations ;
- (i) not carry out or allow open burning of any waste material including healthcare waste ;
- (j) not own, operate or manage a waste management facility below the national standards ;
- (k) comply with requirements of the abatement and enforcement notices ;
- (l) not suspend, dismiss or impose penalty on any employee who reports any contravention of these Regulations to the Agency ; and
- (m) provide and ensure the use of appropriate personal protective equipment while handling, treating or disposing of wastes.

Non
segregation,
storage and
Contravention
of permit
condition.

40. A healthcare facility shall—

- (a) segregate waste at source ;
- (b) provide standard receptacles for storage of sorted wastes before collection ; and
- (c) acquire permit before transporting healthcare waste to any treatment facility.

41. A person shall not make a statement which is known to be false or misleading particularly, where the statement is made—

False statement.

(a) in purported compliance with a requirement to furnish any information imposed by or under any provision of these Regulations ;

(b) for the purpose of obtaining a permit ;

(c) to intentionally make a false entry in any record required to be kept under the condition for issuing a permit ; and

(d) with intent to deceive, forge or use a document issued or authorised to be issued under a condition of a permit.

42. A generator of healthcare waste as classified under the First Schedule to these Regulations shall ensure that every container or package for sorting such waste is secured, marked and labelled as prescribed in the Fourth Schedule to these Regulations.

Failure to securely package healthcare waste.

43. A person who generates hazardous healthcare waste shall treat, or cause to be treated, such hazardous waste in line with practice accepted by the Agency.

Failure to treat healthcare waste.

44. — (1) A facility that generates healthcare waste shall be registered with the Agency.

Failure to register.

(2) A person shall not own or operate any facility that treats healthcare waste without a valid permit issued by the Agency.

45. An existing operators of healthcare facility and healthcare waste treatment facilities, shall within six months of the commencement of these Regulations, submit Environmental Audit Reports and thereafter submit such Reports, every three years to the Agency.

Failure to submit Environmental Audit Report.

46. A person shall—

(a) not release effluent and sludge into the environment above the permissible level ;

(b) report release of effluent and sludge into the environment above the permissible level as specified in these Regulations ; and

(c) take reasonable measures to prevent, reduce or remedy the adverse effect of effluent, sludge and emissions released into the environment.

Discharge of effluent above permissible level.

47. — (1) A person who violates the provisions of regulation 40 (a) to (m) of these Regulations commits an offence and is liable on conviction to a fine of not less than ₦500,000.00 or to imprisonment for a term of not less than two years or to both.

Penalties.

(2) Where an offence under regulations 40 (a) to (m) of these Regulations is committed by a body corporate, is liable on conviction to a fine of not less

than N1,000,000.00 and an additional fine of N50,000.00 for every day the offence subsists.

(3) A person who violates the provisions of regulations 41 to 48 of these Regulations commits an offence and is liable on conviction to a fine of not less than N200,000.00 or to imprisonment for a term of not less than six months or to both and an additional fine of N5,000.00 for every day the offence subsists.

(4) A person who violates the provisions of these Regulations for which no specific penalty is provided, commits an offence and is liable to a fine of not less than N200,000.00.

PART VIII—MISCELLANEOUS PROVISIONS

Interpretation.

48. Under these Regulations—

“*Act*” means National Environmental Standards and Regulations Enforcement Agency (Establishment) Act 2007 (as Amended);

“*Agency*” means National Environmental Standards and Regulations Enforcement Agency;

“*Authorities*” means any level of government from federal, states and local or their agencies having responsibility to perform a particular action;

“*Authorised officer*” means “an officer from the National Environmental Standards and Regulations Enforcement Agency, an officer from the ministry or agency in charge of waste management at State level and Environmental Health Officer at Local Government Level”;

“*Autoclave*” means process of heating infectious waste by steam under pressure;

“*Biological treatment*” means natural treatment of waste by micro-organisms;

“*Chemical waste*” means discarded solid, liquid, and gaseous chemicals, for example, waste from diagnostic and experimental work, cleaning, housekeeping and disinfecting procedures;

“*Colour coding*” means an accepted system whereby different colours are used to designate bags or containers used to store and transport various categories of waste with a view to determining the method to be used for their eventual treatment and disposal;

“*Container*” means disposable or reusable vessels in which waste is placed for the purpose of storing, accumulating, handling, transporting, treating or disposing of that waste, and includes bins, bin-liners and skips;

“*Dilution*” means adding water to a liquid to reduce its potency;

“*Disinfection*” means treatment aimed at reducing the number of micro-organisms to safe levels;

"Disposal" means final destination of waste and includes put-away, sales, transformation, burial, landfill, etc.; excluding open burning;

"Duty of care" means an obligation to conform to a certain standard of conduct for the protection of another against an unreasonable risk of harm;

"Encapsulation" means the fixing of waste using immobilization material or container to render the disposal of such waste safe;

"Generators" means person, group of persons or body corporate, whose endeavour, practice, vocations and engagements employed in the production of waste;

"Genotoxic" means a toxic agent, which damages DNA molecules in genes, causing mutations, tumours, etc.;

"Handlers" means persons associated with the movement of healthcare waste, including storage, transport, treatment and ultimate disposal, by the use of both manual systems and automated systems;

"Hazardous waste" means any waste or combination of waste that exhibits ignitable, corrosive, reactive, or toxic characteristics and poses a substantial danger, now or in the future, to human, plant or animal life and which cannot be handled or disposed of without special precautions;

"Healthcare waste" means waste which is generated—

(a) during the diagnosis, treatment, immunization of humans, animals, in research or activities pertaining thereto or in the production or testing of biological experiments, and

(b) in medical and health institutions (dispensaries, hospitals, polyclinics and outpatient departments, dental clinics, veterinary stations, pharmacies, patent medical shops, etc.) as a result of use or contamination during diagnosing, medical treatment and prevention of diseases in humans and animals;

"Healthcare facility or establishment" means any location where healthcare is provided, whether owned and operated by Government, private businesses, non-governmental organizations, communities or individuals;

"Healthcare waste generator" means any person whose act or process produces healthcare waste and includes, but is not limited to a provider of healthcare;

"Home-generated sharps waste" means hypodermic needles, pen needles, intravenous needles, lancets, and other devices used to penetrate the skin for the delivery of medications derived from household, including multi-family residence;

"Household" means one or more persons who live in the same dwelling and also share meals or living accommodation, and may consist of a single family or some other group of persons;

"Immobilisation" has the same meaning as encapsulation;

"Incineration" means the controlled burning of solids, liquids or gaseous combustible waste at not less than 900°C to produce gases and residues containing little or no combustible materials ;

"Infectious waste" means waste which is suspected to contain pathogens ;

"Landfill" means a waste disposal site (which may be engineered) where waste is composed and covered at the end of each working day ;

"Mercury waste" means waste from mercury containing devices such as batteries, dental amalgam, thermometers and blood-pressure gauges ;

"Minimisation" means a process of elimination which involves reducing the amount of waste produced ;

"Healthcare waste treatment facility" means all land and structures, and other appurtenances or improvements on the land under the control of the treatment facility, used for treating healthcare waste offsite from a healthcare waste generator, including all associated handling and storage of healthcare waste as permitted by the Agency ;

"Municipal solid waste" means garbage, refuse, sludge, rubbish, tailings, debris, litter and other discarded materials resulting from residential, commercial or institutional facilities which are commonly accepted at a municipal solid waste management facility, but excludes wastes from industrial activities regulated by the Agency ;

"Non-hazardous healthcare waste" means waste that comes mostly from the administrative and housekeeping functions of healthcare establishments and may also include waste generated during maintenance of healthcare premises ;

"Pathological waste" means human tissue or fluids generated as waste in the course of diagnosis, treatment or prevention of disease within the health setting ;

"Permit" means an official document issued by the Agency or a relevant Authority granting an operator the permission to carry out healthcare waste treatment ;

"Person" means any person, operator, contractor, facility, firm, enterprise, partnership, body corporate or incorporate, industry, etc ;

"Pharmaceutical waste" means waste containing pharmaceuticals including expired drugs and items contaminated by or containing pharmaceuticals ;

"Premises" means and includes buildings, lands, tenements, tents, structures, vans, vehicles of any kind, drains, ditches or places open, covered or enclosed, and any ship or vessel in any port or any inland waters ;

"Personal protective equipment" means garments or equipment designed to protect the wearer from injury or infection ;

"Radioactive waste" means any radioactive material that has been, or will be, discarded as being of no further use ;

"Receptacles" means same thing as containers ;

"Segregation" means any activity that separates waste materials for further processing ;

"Sharps" means any device having acute rigid corners, edges or protuberances capable of cutting or piercing, including but not limited to all of the following—

(a) hypodermic needles, hypodermic needles with syringes, blades, scalpels, needles with attached tubing, acupuncture needles or root canal files, and

(b) broken glass items including but not limited to Pasteur pipettes or blood vials ;

"Solid waste" means all putrescible and non-putrescible solid and semisolid waste including garbage, rubbish, ashes, industrial waste, swill, demolition or construction waste, abandoned vehicles or parts thereof and discarded commodities ;

"Steam sterilization" means a process that uses steam to eliminate or kill all forms of life and other biological agents, including transmissible agents present in a specified region, such as a surface, a volume of fluid, medication, or in a compound such as biological culture media ;

"Storage" means temporary placement of waste in a suitable location or facility where isolation, environmental and health protection and control are provided to ensure that waste is subsequently retrieved for treatment and conditioning or disposal ;

"Tado-medical centre" means traditional medical centres ;

"Treatment" means any method, technique or process for altering the biological, chemical or physical characteristics of waste to reduce hazards ;

"Waste handling" means the collection, segregation, transportation and storage of waste ;

"Waste management" means the—

(a) planning, handling, transportation, treatment, processing and disposal, including the supervision of these operations, as well as the measures for protection of human health and the environment during the operation of the facilities and installations for waste disposal, and the care taken after the termination of their operations generation and of its negative impact on human health and the environment, including waste handling, and

(b) administrative and operational activities that are used in handling, packaging, treating, conditioning, reducing, recycling, reusing, storage and disposal of waste.

Citation.

49. These Regulations shall be cited as the National Environmental (Healthcare Waste Control) Regulations, 2021.

FIRST SCHEDULE

[regulation 1, 23, 44]

CATEGORIES OF HEALTHCARE WASTE

S/N.	Categories	Description
1.	Non-Hazardous Healthcare Waste.	General Solid Waste.
		Waste Generated from Offices, kitchens, Packaging Materials from Stores.
2.	Hazardous Healthcare Waste.	Infectious Waste.
		Waste suspected to contain pathogens e.g. laboratory cultures, waste from isolation wards, swabs, materials, or equipment that have been in contact with tubing, catheters, toxins, live or attenuated vaccines, soiled plaster casts and other materials contaminated with blood from infected patients, excreta, etc.
3.		Pathological waste.
		Human and animal tissues or fluids, (e.g. body parts, blood and other body fluids, fetuses, animal carcasses, etc.)
4.		Sharps.
		Needles, infusion sets, scalpels, knives, blades or broken glass that may cause puncture and cuts. This includes both used and unused sharps.
5.		Pharmaceutical waste.
		Waste containing pharmaceuticals that are expired or no longer needed, items contaminated by or containing pharmaceuticals (e.g. packaging materials bottles, boxes etc.).
6.		Genotoxic Waste.
		Waste containing substances with genotoxic properties e.g. cytotoxic drugs (often used in cancer therapy), genotoxic chemicals, etc.
7.		Chemical Waste.
		Waste containing chemical substances (e.g. laboratory reagents, film developer, solvents, disinfectants, etc. that are expired or no longer needed.)
8.		Waste(s) with high content of heavy metals.
		Batteries, broken thermometers, blood pressure gauges, mercury-containing products, fluorescent lamps and lights, monitors, etc.
9.		Pressurized containers.
		Gas cylinders, gas cartridges, aerosol cans, fire extinguishers, etc.
10.		Radioactive Waste.
		Radioactive waste includes liquids, gas and solids contaminated with radionuclides whose ionizing radiations have genotoxic effects. The ionizing radiations of interest in medicine include X- and gamma-rays as well as α - and β - particles.
11.		Bio-waste
		Any biological entity, cellular or non-cellular, capable of replication or of transferring genetic material.

Source : World Health Organization (WHO) Geneva (1999).

SECOND SCHEDULE

[regulations 5(1)(2)(a),(3),6(1)(3), 7(1)(d)]

EFFLUENT LIMITATIONS FOR HEALTHCARE WASTE CONTROL
REGULATIONS

S/N	Parameter	SI Unit	Guideline Value
1.	pH		6 - 9
2.	Biochemical Oxygen Demand (BOD5)	mg/L	50
3.	Chemical Oxygen Demand(COD)	mg/l	250
4.	Total Suspended Solids(TSS)	mg/l	50
5.	Oil and grease	mg/l	10
6.	Cadmium	mg/l	0.05
7.	Chromium (Cr)	mg/l	0.1
8.	Lead	mg/l	0.1
9.	Mercury	mg/l	0.001
10.	Chlorine, total residual	mg/l	0.2
11.	Phenols	mg/l	0.5
12.	Total coliform bacteria	MPNa/ 100ml	400
13.	Total kjeldahl Nitrogen	mg/l	15.0
14.	Polychlorinated dibenzodioxin and dibenzofuran(PCDD/F)	mg/L	0.1
15.	Temperature increase	°C	<3b

Notes:

(a) MPN - Most Probable Number; and

(b) at the edge of a scientifically established mixing zone which takes into account ambient water quality, receiving water use, potential receptors and assimilative capacity.

Source : Environmental, Health, and Safety Guidelines for Health Care Facilities
(International Finance Corporation World Bank Group 2007)

THIRD SCHEDULE [regulation 13, 25(1)]

GUIDELINE FOR STORAGE OF HEALTHCARE WASTE

(1) Seal and replace waste bags and containers when they are approximately three quarters full.

(2) Full bags and containers should be replaced immediately.

(3) Waste storage areas should be located within the facility and sized in relation to the quantities of waste generated, with the following design considerations—

(a) hard, impermeable floor with drainage, and designed for cleaning or disinfection with available water supply secured by locks with restricted access ;

(b) designed for access and regular cleaning by authorized cleaning staff and vehicles ;

(c) equipped with appropriate lighting and ventilation ;

(d) equipped with supplies of protective clothing, and spare bags or containers ;

(e) identify and label waste bags and containers properly prior to removal ;

(f) transport waste to storage areas on designated trolleys or carts, which should be cleaned and disinfected regularly ;

(g) unless refrigerated storage is possible, storage times between generation and treatment of waste, where applicable, should not exceed 48 hours ;

(h) store mercury separately in sealed and impermeable containers in a secure location ;

(i) store cytotoxic waste separately from other waste in a secure location ;

(j) store radioactive waste in containers to limit dispersion and secure behind lead shields ;

(k) non-risk and non-hazardous waste should always be stored in a separate location from the hazardous waste to avoid cross-contamination ; and

(l) inaccessible to animals, insects and birds.

Note :

- * Mutilation or shredding shall be such so as to prevent unauthorized reuse.
- * There shall not be chemical pre-treatment before incineration.
- * Chlorinated plastics shall not be incinerated.
- * Deep Safe burial shall be an option available only in towns with population less than five hundred thousand and in rural areas.

FOURTH SCHEDULE [regulation 15, 44]

GUIDELINES FOR LABELLING AND PACKAGING OF HAZARDOUS
HEALTHCARE WASTE'S CONTAINERS

The label shall contain the following information in legible characters, written in English and optionally, in any other local language—

- (a) identity of the hazardous waste ;
- (b) name, physical address and telephone contact of the generator of waste ;
- (c) waste composition and total weight of waste through waste inventorisation or characterization ;
- (d) normal storage stability and methods of storage ;
- (e) name and percentage of weight of active ingredients, names and percentages of weights of other ingredients or half-life of radioactive material ;
- (g) warning or caution statements which may include any of the following as appropriate—
 - (i) the words "WARNING" or "CAUTION" ;
 - (ii) the word "POISON" (marked indelibly in red on a contrasting background) ;
 - (iii) the words "DANGER! KEEP AWAY FROM UNAUTHORIZED PERSONS" ; or
 - (iv) appropriate pictogram such as skull and crossbones ; and
 - (h) a statement of first aid measures, including the antidote when inhaled, ingested or on dermal contact and a direction that a physician must be contacted immediately.

FIFTH SCHEDULE [regulation 20, 21(1)]

GUIDELINES FOR HEALTHCARE WASTE COLLECTION AND TRANSPORTATION

Every vehicle used for the transportation of healthcare waste shall—

- (a) be registered with appropriate Authority ;
- (b) have the name of the company conspicuously written on both sides of the body ;
- (c) be painted in bright colours ;
- (d) have a hauling body constructed of metal, or any other approved material and all joints in the hauling body shall be effectively sealed and smoothened to avoid dripping or leakage of liquids ;
- (e) be provided with a tight metal hood having adequate openings fitted with smoothly operating loading and unloading doors ;
- (f) ensure that vehicles without permanent covers shall not be loaded with healthcare waste ;
- (g) ensure that such vehicles and the covering materials are thoroughly washed or steam-cleaned regularly and kept in good working condition ;
- (i) the vehicles and equipment for the transportation of waste are in such a state that shall not cause the scattering of, escaping of, or flowing out of the waste or emitting of noxious smells from the waste ;
- (k) shall collect waste from designated area of operations and shall deliver such waste to the designated transfer station, disposal site or plant ;
- (l) where there is need to transport healthcare waste from the point of generation to an off-site treatment/disposal place such waste shall be accompanied by a duly signed waste consignment note ; and
- (m) the vehicle used shall conform with the standard of waste collection procedure.

SIXTH SCHEDULE

[regulation 28]

GUIDELINES FOR PERSONAL PROTECTIVE EQUIPMENT FOR HEALTHCARE WASTE HANDLERS AND TREATMENT FACILITIES

The recommended equipment to protect workers from occupational hazards, injuries and illnesses includes—

1. PROTECTIVE GLOVES FOR WASTE HANDLERS

Managers shall use these product specifications to select gloves suitable for cleaning staff to achieve protection against biological hazards present during handling and transport of biomedical waste in the health care facilities.

DESIGN SPECIFICATIONS :

Glove Design	Hand-specific, designed for dexterity and comfort in addition to protection. Texture in palm area should provide grip and tactile sensation to enable safety during janitorial activities.		
Cuff Design	Straight cuff for maximum protection from contaminated liquids. Cuff should reach at least 75 mm from the upper arm surface when the elbow is flexed at 90°.		
Thickness Palm	Minimum of 0.5 mm/20 mil.		
Sizes	Small (7)	Medium (8)	Large (9)
Palm Width (mm)	90	102	120
Typical Length (mm)	350-370	350-370	350-370.

2. PROTECTIVE GLOVES FOR INCINERATOR OPERATORS

Managers shall use these product specifications to select gloves suitable for incinerator operators to achieve hand protection against intermittent heat and infectious sharps present when handling biomedical waste during incineration.

DESIGN SPECIFICATIONS

Glove Design	Hand-specific, designed for dexterity and comfort in addition to protection.		
Cuff Design	Safety cuff design that protects upper wrist but allows for quick glove removal in emergency situations.		
Thickness	Will be material dependant.		
Sizes	Small (7)	Medium (8)	Large (9)
Palm Width (mm)	90	102	120
Typical Length (mm)	Minimum 127 (5 inches)	Minimum 127 (5 inches)	minimum 127 (5 inches)

3. PROTECTIVE EYEWEAR FOR INCINERATOR OPERATORS

Managers shall use these product specifications to select protective eyewear for incinerator operators to achieve eye protection against uncontained infectious sharps and intermittent heat during handling and incineration of infectious healthcare waste.

DESIGN SPECIFICATIONS

Design	Glasses with side protection or goggle design.
Lens	Impact and heat resistant, moulded, and 2.2 mm thick with anti-fog coating.
Heat Resistant	Self-extinguishing foam and heat-resistant materials.
Ventilation	At minimum, four indirect ventilation slots.
Fit	Wide contact between goggle and face.
Visibility	Unobstructed peripheral vision.
Strap	Adjustable support strap.

4. PROTECTIVE FOOTWEAR FOR WASTE HANDLERS

Managers shall use these product specifications to select protective footwear for waste handlers and incinerator operators to protect against uncontained infectious sharps and other hazards during handling and incineration of infectious healthcare waste.

DESIGN SPECIFICATIONS

Toe Impact Protection	Toe impact energy up to 90 Joules.
Sliding	Sole construction.
Sole Puncture Protection	Minimum protection of 1200 Newtons.
Slip Resistant Sole	Deep tread with coefficient of friction >0.5.

SEVENTH SCHEDULE [regulation 12]

COLOUR CODE FOR WASTE SORTING AND SEGREGATION (CCWSS)

Colour	Category	Component of waste
Black	Non-infectious waste.	Paper, Packaging materials including cartons, bottles, food remnants, rags.
Yellow	Infectious wastes.	Gloves, dressings, blood, body fluids, used specimen containers and similar wastes from both healthcare and research facilities.
Red	Highly Infectious wastes.	Sharps, anatomical waste and pathological wastes. Blood and body fluids suspected to contain highly pathogenic organisms e.g Ebola and other Viral hemorrhagic Fevers (VHF).
Brown	Chemical.	Formaldehyde, batteries, photographic chemicals, solvents, organic chemicals and inorganic chemicals.
Yellow with Radioactive	Radioactive wastes.	Solids, liquids or pathological wastes contaminated with radioactive isotopes of any kind.
Green	Organic Waste	Organic wastes include leaves, shrub, tree trunks, weed, flowers, etc.
Blue	Recyclable Wastes.	Glass, metals, cans, plastics, polythene etc.

EIGHT SCHEDULE

[regulation 27(1)]

FUELGAS EMISSION GUIDELINES FOR "HOSPITAL/MEDICAL/INFECTIOUS"
WASTE INCINERATORS.

S/N	Pollutant	Small incinerator ($<91\text{kg/hour}$)	Medium incinerator ($>91\text{--}227\text{kg/hour}$)	Large incinerator ($>227\text{kg/hour}$)
1.	Particulate matter	115mg/m^3	69mg/m^3	
2.	Carbon monoxide (CO)	40ppmv	40ppmv	
3.	Dioxins/furans	125ng/m^3 total CCD/CDF or 2.3ng/m^3 TEQ	125ng/m^3 total CCD/CDF or 2.3ng/m^3 TEQ	125ng/m^3 total CCD/CDF or 2.3ng/m^3 TEQ
4.	Hydrogen chloride (HCl)	100 ppmv or 93% reduction	100 ppmv or 93% reduction	100 ppmv or 93% reduction
5.	Sulfur dioxide (SO_2)	55 ppmv	55 ppmv	55 ppmv
6.	Nitrogen oxides	250 ppmv	250 ppmv	250 ppmv
7.	Lead	1.2mg/m^3 or 70% reduction	1.2mg/m^3 or 70% reduction	1.2mg/m^3 or 70% reduction
8.	Cadmium	0.16mg/m^3 or 65% reduction	0.16mg/m^3 or 65% reduction	0.16mg/m^3 or 65% reduction
9.	Mercury	0.55mg/m^3 or 85% reduction	0.55mg/m^3 or 85% reduction	0.55mg/m^3 or 85% reduction

Source : WHO Geneva, 1999.

NINETH SCHEDULE regulation 59 and 27]

TREATMENT METHODS OF HEALTHCARE WASTES

S/N	Waste category	Treatment method
1.	Contaminated animal carcasses	Incineration
2.	Cultures and stock	Steam sterilization
3.	Contaminated bedding/patient care waste	Steam sterilization or Incineration
4.	Contaminated small equipment	Steam sterilization or incineration
5.	Contaminated large equipment	Formaldehyde decontamination
6.	Waste biological	Steam sterilization or incineration
7.	Surgery waste	Steam sterilization or incineration
8.	Human blood	Steam sterilization or incineration
9.	Autopsy waste	Incineration
10.	Human blood products	Steam sterilization or Incineration
11.	Contaminated laboratory waste	Steam sterilization
12.	Pathological waste	Steam sterilization or Incineration or Grinding
13.	Dialysis unit waste	Steam sterilization
14.	Contaminated and unused sharps	Steam sterilization and Incineration or grinding

Note :

- * Chemical treatment using at least 1% hypochlorite solution or any other equivalent chemical reagent. It must be ensured that the chemical treatment, mutilation or shredding must be such so as to prevent unauthorized 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 of less than five hundred thousand and in rural areas.

MADE at Abuja this 3rd day of March, 2021.

DR MOHAMMAD MAHMOOD ABUBAKAR
Honourable Minister of Environment