

STANDARD FOR TREATMENT AND DISPOSAL OF BIO-MEDICAL WASTE

Incinerator

(Human Anatomical waste, Animal Waste, Microbiology and Biotechnology Waste and Soiled Waste)

Combustion Efficiency (CE): at least 99.00%

$$\text{C.E.} = \frac{\% \text{CO}_2}{\% \text{CO}_2 + \% \text{CO}} \times 100$$

Temperature: primary chamber- 800 ± 50 deg. C°.

Secondary chamber gas residence time -at least one second at 1050 ± 50 C°, with minimum 3% Oxygen in the stack gas.



Emission Standards

Particulate matter – 150, Nitrogen Oxides – 450, HCl- 50 and Volatile organic compounds in ash shall not be more than- 0.01% (Concentration mg /Nm³ at 12% CO₂ correction). Minimum stack height- 30 metres above ground.

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. /LS.H.S./Diesel shall be used as fuel in the incinerator.

Autoclave

(Microbiology and Biotechnology Waste, Waste Sharps, Soiled Waste and Solid Plastic Waste)

Temperature- 121⁰C and pressure 15 pounds (psi) RT60 m or
135⁰C and pressure 31 psi RT 45 minutes or
149⁰ C and pressure of 52 psi RT 30 minutes.



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:

Temperature: 121⁰C and pressure of 15 psi RT 45 minutes; or
135⁰C and pressure of 31 psi RT 30 minutes;

Validation Test (Spore testing):

Bacillus stearothermophilus spores using vials or spore Strips; with at least 1×10^4 spores per milliliter.

Routine Test - A chemical indicator strip / tape the changes colour when a certain temperature is reached 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.

Liquid Waste

(Waste generated from laboratory and washing, cleaning, house-keeping and disinfecting activities)

PH- 6.3-9.0, Suspended solids 100 mg/l, Oil and grease 10 mg/l, BOD 30 mg/l, COD 250 mg/l and Bio-assay tests 90% survival of fish after 96 hours in 100% effluent.

