

**RULE 340. CONTROL OF DIOXINS FROM MEDICAL WASTE INCINERATORS. (Adopted 9/10/1991)**

**A. Applicability**

This rule applies to any person who owns or operates facilities used to incinerate waste from medical facilities.

**B. Exemptions**

This rule shall not apply to those incinerators that are exclusively crematoria of human or animal remains.

**C. Definitions**

For the purposes of this Rule, the following definitions shall apply:

1. **"Control Equipment"** means any device which reduces emissions from medical waste incinerators.
2. **"Controlled Emissions"** means emissions downstream of the control equipment.
3. **"Dioxins"** means dibenzo-p-dioxins and dibenzofurans chlorinated in the 2,3,7 and 8 positions, containing 4,5,6 or 7 chlorine atoms and expressed as 2,3,7,8 tetrachlorinated dibenzo-para-dioxin equivalents using current California Department of Health Services toxic equivalency factors.
4. **"Medical Facilities"** means any medical and dental offices, clinics and hospitals, skilled nursing facilities, research facilities, research laboratories including classroom laboratories, clinical laboratories, all unlicensed and licensed medical facilities, clinics and hospitals, surgery centers, diagnostic laboratories and other providers of health care.
5. **"Medical Waste Incinerator"** means all of the furnaces or other closed fire chambers that are used to burn wastes generated at medical facilities.
6. **"Uncontrolled Emissions"** means the dioxin emissions measured from the incinerator at a location downstream of the last combustion chamber, but prior to the air pollution control equipment.
7. **"Waste"** means all materials charged into the incinerator.

**D. Requirements - Emission Control**

No person shall operate a medical waste incinerator unless the following conditions are met:

1. The incinerator is a multi-chamber incinerator.
2. The dioxins emissions have been reduced by 99 percent or more of the uncontrolled emissions, or the dioxins emissions have been reduced to 10 nanograms or less per kilogram of waste burned.
3. The flue gas temperature at the outlet of the control equipment does not exceed 300 degrees Fahrenheit, unless it has been demonstrated to, and approved in writing by, both the ARB and the Control Officer that lower emissions are achieved at a higher outlet temperature.
4. The primary combustion chamber is maintained at no less than 1400 degrees Fahrenheit, and the secondary chamber is maintained at no less than 1800 degrees Fahrenheit.

5. The furnace design shall provide for a residence time of at least one second. See Section H.2 for the method to determine residence time.

**E. Requirements - Operating Procedures**

No person shall operate any medical waste incinerator unless:

1. The bottom ash, fly ash and scrubber residuals are handled and stored in a manner that prevents entrainment into ambient air.
2. Each individual who operates or maintains the incinerator obtains either a certificate of training in medical waste incineration issued by the American Society of Mechanical Engineers within nine months of the commencement of that training program or a certificate of training from some other program deemed acceptable by the Control Officer. Copies of the training certificates shall be submitted to the District. The original certificates shall be available for inspection at the facility with the Permit to Operate.

**F. Requirements - Monitoring**

The owner or operator of a medical waste incinerator shall install and maintain a continuous data recording system acceptable to the District which for each day of operation provides:

1. Continuous recording of the primary and secondary combustion chamber temperatures;
2. continuous recording of carbon monoxide emissions;
3. the key operating parameters of the air pollution control equipment, as specified by the Control Officer;
4. the hourly waste charging rates; and
5. the opacity of stack emissions or other indicator of particulate matter which is approved by the Control Officer.

**G. Requirements - Testing**

The owner or operator of a medical waste incinerator shall conduct a minimum of two annual source tests for dioxins emissions within 24 months of obtaining an Authority to Construct. Subsequent to the completion of two consecutive annual source tests which demonstrate compliance, the frequency of future source tests shall be determined by the Air Pollution Control Officer.

- a. When determining compliance with the 99 percent reduction requirement of subsection D.1, emissions shall be sampled simultaneously at a location downstream of the last combustion chamber, but prior to the control equipment, and from the stack.
- b. When determining compliance with the 10 nanogram per kilogram of waste emission limit of subsection D.1, the source testing shall be conducted at the stack.
- c. The information regarding the composition (moisture content, and amount of total waste that is infectious, pathological, hazardous, or radioactive) and feed rate of fuel charged during the source test shall be provided with the source test results. The Control Officer can require additional information regarding the composition of the waste.
- d. Source testing shall be conducted at waste firing rates specified by the district.

**H. Test Methods**

1. Testing as required by Section G. shall be performed using ARB Test Method 428, using the high resolution mass spectrometry option.
2. For determining compliance with the 1 second residence time requirement of Section D.5, the following equation should be used.

$$\text{Residence Time} = \frac{V}{Q_c}$$

where:

V means the volume, as expressed in cubic feet, from the point in the incinerator where the maximum temperature has been reached until the point where the temperature has dropped to 1600°F

Q<sub>c</sub> means the combustion gas flow through V, as expressed in actual cubic feet per second, which is determined by ARB Test Method 2 after adjusting the measured flow rate to the maximum furnace temperature (T<sub>max</sub>) by using T<sub>max</sub> instead of T<sub>std</sub> in the Method 2 calculation for Q<sub>C</sub>.

Alternative methods may be used if conditions for determining the combustion gas flow rate by Method 2 are unacceptable. The determination shall be within the guidelines of Method 2 and at the discretion of the Air Pollution Control Officer.

#### **I. Recordkeeping**

1. The owner or operator of a medical waste incinerator shall maintain at the facility in a manner acceptable to the district:
  - a. Continuous data recording system printouts,
  - b. Maintenance records for the incinerator, control equipment, and monitoring equipment,
  - c. calibration records for the monitoring equipment, and
  - d. records of the weight of the waste charged to the incinerator.
2. A copy of results from all source test conducted for purposes of demonstrating compliance with this rule shall be provided to the ARB at the same time that they are provided to the District.
3. These records shall be maintained for a minimum of three years and made available to the District upon request.

#### **J. Reporting**

Any breakdown condition, as defined in District Rule 505 Section A, shall be reported to the District within 1 hour of occurrence.

#### **K. Compliance Schedule**

1. No later than December 9, 1991, the owner or operator of a medical waste incinerator shall submit to the District an application for an Authority to Construct the equipment necessary to meet the requirements of section D. of this Rule. No later than December 10, 1992, the owner or operator shall be in compliance with this Rule.
2. The owner or operator of a medical waste incinerator who intends to permanently shut down operation of the incinerator shall notify the District of the shutdown date no later than December 9, 1991. The shutdown date shall be no later than March 10, 1992.