

EU Standards for the Incinerator Exhaust

ACT: Directive 2000/76/EC of the European Parliament and of the Council of 4 December 2000 on the incineration of waste.

THE EUROPEAN PARLIAMENT AND THE COUNCIL OF THE EUROPEAN UNION,

(1) **The fifth Environment Action Programme:** Towards sustainability - A European Community programme of policy and action in relation to the environment and sustainable development, supplemented by Decision No 2179/98/EC on its review(5), sets as an objective that critical loads and levels of certain pollutants such as nitrogen oxides (NO_x), Sulphur dioxide (SO₂), heavy metals and dioxins should not be exceeded, while in terms of air quality the objective is that all people should be effectively protected against recognized health risks from air pollution.

(A) Objectives:

To prevent or to limit as far as practicable negative effects on the environment, in particular pollution by emissions into air, soil, surface water and groundwater, and the resulting risks to human health, from the incineration and co-incineration of waste.

Air Emission Limit Values (Annx. V)

(A)	Daily Avg. Values	Values	Unit
1	Total dust	10	mg/m ³
2	Gaseous and vaporous organic substances, expressed as total organic carbon	10	mg/m ³
3	Hydrogen chloride (HCl)	10	mg/m ³
4	Hydrogen fluoride (HF)	1	mg/m ³
5	Sulphur dioxide (SO ₂)	50	mg/m ³
6	Nitrogen monoxide (NO) and nitrogen dioxide (NO ₂) expressed as nitrogen dioxide for existing incineration hour or new incineration plants	200	mg/m ³ (*)
7	Nitrogen monoxide (NO) and nitrogen dioxide (NO ₂), expressed as nitrogen dioxide for existing incineration plants with a nominal capacity of 6 tonnes per hour or less	400	mg/m ³ (*)

(*) :- Until 1 January 2007 and without prejudice to relevant (Community) legislation the emission limit value for NOx does not apply to plants only incinerating hazardous waste.

Exemptions for NOx may be authorized by the competent authority for existing incineration plants:

- with a nominal capacity of 6 tonnes per hour, provided that the permit foresees the daily average values do not exceed 500 mg/m³ and this until 1 January 2008,
- with a nominal capacity of >6 tonnes per hour but equal or less than 16 tonnes per hour, provided the permit foresees the daily average values do not exceed 400 mg/m³ and this until 1 January 2010,
- with a nominal capacity of >16 tonnes per hour but <25 tonnes per hour and which do not produce water discharges, provided that the permit foresees the daily average values do not exceed 400 mg/m³ and this until 1 January 2008.

Until 1 January 2008, exemptions for dust may be authorized by the competent authority for existing incinerating plants, provided that the permit foresees the daily average values do not exceed 20 mg/m³.

Since, Hydrogen chloride (HCl), Hydrogen fluoride (HF) , Sulphur (S) are not present in feed so, these will not be present in flue gas.

(B)	Half Hourly Avg. Values	Values		Unit
		100 % (A)	97 % (B)	
		100 % (A)	97 % (B)	mg/m ³
1	Total dust	30	10	mg/m ³
2	Gaseous and vaporous organic substances, expressed as total organic carbon	20	10	mg/m ³
3	Hydrogen chloride (HCl)	60	10	mg/m ³
4	Hydrogen fluoride (HF)	4	2	mg/m ³
5	Sulphur dioxide (SO ₂)	200	50	mg/m ³
6	Nitrogen monoxide (NO) and nitrogen dioxide (NO ₂), expressed as nitrogen dioxide for existing incineration plants with a nominal capacity exceeding 6 tonnes per hour or new incineration plants	400 (*)	200 (*)	mg/m ³

(*) Until 1 January 2007 and without prejudice to relevant Community legislation the emission limit value for NO_x does not apply to plants only incinerating hazardous waste.

Until 1 January 2010, exemptions for NO_x may be authorized by the competent authority for existing incineration plants with a nominal capacity between 6 and 16 tonnes per hour, provided the half-hourly average value does not exceed 600 mg/m³ for column A or 400 mg/m³ for column B.

Since Hydrogen chloride (HCl), Hydrogen fluoride (HF) , Sulphur (S) are not present in feed so, these will not be present in flue gas.

(C) All average values over the sample period of a minimum of 30 minutes and a maximum of 8 hours.

Sr. No.	All average values over the sample period of a minimum of 30 minutes and a maximum of 8 hours			Unit
1	Cadmium and its compounds, expressed as cadmium (Cd)	Total 0.05	Total 0.1 *	Mg / m ³
2	Thallium and its compounds, expressed as thallium (Tl)			
3	Mercury and its compounds, expressed as mercury (Hg)	0.05	0.1 *	Mg / m ³
4	Antimony and its compounds, expressed as antimony (Sb)	Total 0.5	0.1 *	Mg / m ³
5	Arsenic and its compounds, expressed as arsenic (As)			
6	Lead and its compounds, expressed as lead (Pb)			
7	Chromium and its compounds, expressed as chromium (Cr)			
8	Cobalt and its compounds, expressed as cobalt (Co)			
9	Copper and its compounds, expressed as copper (Cu)			
10	Manganese and its compounds, expressed as manganese (Mn)			
11	Nickel and its compounds, expressed as nickel (Ni)			
12	Vanadium and its compounds, expressed as vanadium (V)			

(*) Until 1 January 2007 average values for existing plants for which the permit to operate has been granted before 31 December 1996, and which incinerate hazardous waste only.

These average values cover also gaseous and the vapour forms of the relevant heavy metal emissions as well as their compounds.

(d) Average values shall be measured over a sample period of a minimum of 6 hours and a maximum of 8 hours.

The emission limit value refers to the total concentration of dioxins and furans calculated using the concept of toxic equivalence in accordance with Annex I.

Dioxins and furans = 0,1 ng/m³

(e) The following emission limit values of carbon monoxide (CO) concentrations shall not be exceeded in the combustion gases (excluding the start-up and shut-down phase):

- 50 milligrams/m³ of combustion gas determined as daily average value;
- 150 milligrams/m³ of combustion gas of at least 95 % of all measurements determined as 10-minute average values or 100 mg/m³ of combustion gas of all measurements determined as half-hourly average values taken in any 24-hour period.

Exemptions may be authorized by the competent authority for incineration plants using fluidized bed technology, provided that the permit foresees an emission limit value for carbon monoxide (CO) of not more than 100 mg/m³ as an hourly average value.

(f) Member States may lay down rules governing the exemptions provided for in this Annex.