

Manual of European Environmental Policy

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Historical legislation: Hazardous waste incineration

Formal reference	
94/67/EC (OJ L365 31.12.1994)	Directive on the incineration of hazardous waste
Proposed 19.3.92 – COM(92)9	
Legal base	Article 192 TFEU (originally Art. 130s EEC Treaty)
97/283/EC (OJ L113 30.04.1997)	Decision on dioxin measurement methods
Binding dates	
Entry into force	31 December 1994
Formal compliance	31 December 1996
Standards apply to ‘new’ plants (authorized on or after 31 December 1996)	31 December 1996
Standards apply to ‘existing’ plants (authorized before 31 December 1996)	30 June 2000 Note: Directive 94/67/EC was repealed by Directive 2000/76/EC on 28 December 2005.

Purpose of the Directive

The Directive aimed to reduce the negative effects on the environment and human health of the incineration of hazardous waste. Permitting requirements, operating controls, emission limit values and monitoring obligations were defined. The Directive was a ‘daughter’ of the Waste Framework Directive [75/442/EEC](#) and the Directive on Emissions from Industrial Plants [84/360/EEC](#). Its requirements also needed to be applied to appropriate installations licensed under the Integrated Pollution Prevention and Control Directive 96/61/EC (codified as Directive [2008/1/EC](#)), whose licensing provisions replaced those of Directive 84/360/EEC. Certain categories of hazardous waste were excluded from the scope of the Directive, as were specified types of incinerators. Separate Directives related to [municipal waste incinerators](#). Directive [2000/76/EC](#) has replaced Directive 94/67/EC.

Summary of the Directive

The Directive laid down emission limit values and operating and monitoring requirements which had to be attached to the prior authorizations required by Directives 84/360/EEC (and subsequently Directive 96/61/EC) and 75/442/EEC. Under the scope of the Directive, ‘hazardous waste’ meant solid or liquid waste defined in Directive 91/689/EC. However, the scope excluded: combustible liquid waste meeting certain criteria; hazardous waste generated and disposed of offshore by the oil and gas industries; municipal waste covered by Directives 89/369/EEC and 89/429/EEC; and non-hazardous sewage sludge. Furthermore, incinerators for animal carcasses and non-hazardous clinical waste (which could still be infectious) were excluded.

A permit for hazardous waste incineration could be granted only where it was shown that the plant's design, equipment and operation would provide all appropriate preventive measures against pollution. The permitting requirement applied not only to incinerators used specifically for waste treatment, but also to plants which used hazardous waste as a component of fuel supplies (co-incineration). In both cases the competent authorities had to list the types and quantities of hazardous waste which would have been treated or co-incinerated. Record-keeping and sampling measures for control of waste delivery and reception were specified.

Hazardous waste incineration was to be 'as complete as possible', a condition which marked a move beyond reliance on BATNEEC (Best Available Techniques not Entailing Excessive Cost). Minimum combustion chamber conditions were specified as a residence time of 2 s, an oxygen content of 6 per cent, and a temperature of 850 °C (1,100 °C if waste was more than 1 per cent halogenated organic substances). Competent authorities could authorize different requirements as long as emission limits were complied with. Automatic burners for temperature control, and a system to prevent hazardous waste feed when temperature or emission controls were not achieved, were mandatory. Maximum concentrations of carbon monoxide in combustion gases were also specified.

Emission limits covering dust, total organic carbon (TOC), hydrogen chloride (HCl), hydrogen fluoride (HF), sulphur dioxide (SO₂), cadmium (Cd) and thallium (Tl), mercury (Hg), and a combination of other heavy metals were specified as shown in Table 1. Emissions of dioxins and furans had to be reduced 'by the most progressive techniques'. The Directive set a ceiling for the total 'toxic equivalent' emissions of dioxins and furans of 0.1 ng/m³ as a 'guide value', to be applied as a legal limit at the latest from 1 January 1997, subject to the establishment by June 1996 of harmonized measurement methods by the Commission. The details of the harmonized measurement methods were actually published by the Commission in April 1997, through Decision 97/283/EC. An annex to the Directive provided the equivalence factors for various dioxin and furan compounds.

Where hazardous wastes were co-incinerated and provided up to 40 per cent of the heat release, the Directive's emission limits applied only to the proportion of the exhaust gas which was attributable to the waste incineration. An annex set out criteria for the determination of emission limits for co-incineration.

Discharges of wastewater from incineration plants were made subject to permit and had to be limited as far as possible. Within two years from the Directive's entry into force (i.e. by 31 December 1996), the Council was to establish specific limit values for pollutants in aqueous waste, acting on a proposal from the Commission. Other design and operational requirements were also dictated in order to protect groundwater in accordance with Directive [80/68/EEC](#).

Residues from hazardous waste incineration had to be recovered or disposed of in compliance with the Waste Framework Directive [75/442/EEC](#). Dry residues had to be transported and stored in closed containers, and tests had to be carried out to determine the physical and chemical characteristics of residues prior to their recovery or disposal.

Measurement obligations were to be laid down in permits for hazardous waste incineration. Minimum requirements for the measurement of the various pollutant emissions and operational parameters were set out. Measurement techniques had to comply with standards defined in an annex.

Where measurements showed that emission limits were exceeded, the operator was obliged to inform the competent authority without delay. Competent authorities were required to lay down the maximum permissible period during which discharges could exceed the emission ceilings, subject to limits imposed by the Directive of 60 h of cumulative operation per year and 4 h of uninterrupted operation. An absolute emission limit for dust was set at 150 mg/m³ as a half-hourly average, and no exceedance of TOC limits was permitted.

Existing plants were given three and a half years longer than new plants for compliance with the Directive. However, an operator could notify the competent authority that an existing plant would be run for no more than 20,000 h over a period of up to five years before being closed, in which case it was exempted from the prescribed limits.

The Commission was responsible for amending the Directive's annexes in the light of technical progress, with consideration by a committee of Member States' representatives. Reports on the implementation of the Directive were to be prepared in accordance with Standardised Reporting Directive [91/692/EEC](#). Decision [98/184/EC](#) provided the questionnaire to be completed when producing implementation reports.

Development of the Directive

The Waste Framework Directive 75/442/EEC of 1975 represented the first attempt to create a coherent set of measures for waste management across the Community. This included the basic requirement for prior authorization of waste disposal facilities, including waste incinerators.

In 1984 further permitting obligations were created through the Directive on Emissions from Industrial Plants [84/360/EEC](#). This listed several categories of plants for Regulation in possible future 'daughter' Directives, among them 'plants for the disposal of toxic and dangerous waste by incineration' and 'plants for the treatment by incineration of other solid and liquid waste'. The latter category was addressed through the 1989 Municipal Waste Incineration Directives [89/369/EEC](#) and [89/429/EEC](#). In contrast, by the end of the 1980s hazardous waste incineration remained regulated only by the general obligations of Directives 75/442/EEC and 84/360/EEC, a situation which led the Council to invite the Commission 'to complete its proposals on incinerators for industrial waste, as a matter of urgency' in its 1990 resolution on waste policy (OJ C122 18.5.90).

Work began within the Commission in 1990 on drafting a Directive addressing hazardous waste incineration, but it was not until March 1992 that a proposal was submitted to the Council. In its Explanatory Memorandum the Commission suggested that hazardous waste may account for 2–20 per cent of the total waste generated in each Member State, the incineration of which had the potential to cause highly dangerous pollution. The Commission proposed what it saw as 'very stringent emission limit values', and deliberately aimed to move beyond reliance on BATNEEC, particularly with regard to dioxins, furans and mercury. The proposed emission limits were based on standards already in place in Germany or the Netherlands, or guaranteed as achievable by equipment manufacturers. The Commission additionally sought to reflect an integrated approach to environmental protection, proposing a ban on wastewater discharges from new sites and controlled disposal of incineration residues. The proposal was based on Article 100A, as a measure designed primarily to harmonize national standards.

The proposal was generally endorsed by the Economic and Social Committee, which declared itself pleased with the Commission's view that BATNEEC was inappropriate and should be replaced by BAT. However, the proposal was less well received by the European Parliament, which proposed a large number of amendments. These included a fixed emission limit value for dioxins and furans of 0.1 ng/m³ (the legal limit in the Netherlands and Germany). This contrasted with the Commission's view that, due to the difficulty of measuring dioxin and furan emissions, a legal limit of 0.1 ng/m³ was not practicable, although plants should make 'every effort' not to exceed this level.

In reacting to the Parliament's response, the Commission declared that it could not agree to the proposed amendment for a fixed limit for dioxin and furan emissions, or to certain other amendments. The proposal was referred back to the Parliament's Environment Committee in the light of these differences. In a compromise amendment, Parliament proposed a delay in the applicability of the 0.1 ng/m³ limit value for dioxins and furans, until 1 January 1997. Until then the figure would serve as a guide value. This compromise was included in the Commission's amended proposal in June 1993, which also reflected a number of the Parliament's other amendments. These increased the stringency of the controls, for example through requiring permits to indicate the nature and final disposal of incineration residues, and extending the prohibition on wastewater discharge from new plants to all plants.

Following its amendment by the Commission, the proposal was discussed by the Council and a 'political agreement' was reached in September 1993. This reduced the stringency of the proposal in a number of areas, including exclusion of hospital and clinical waste incinerators; extension of time periods for compliance; reduction of the minimum afterburn temperature for halogenated wastes from 1,200 °C to 1,100 °C; relaxation of emission limits for various substances; removal of the prohibition on discharge of treated wastewater (and a new requirement to establish limit values for pollutants in aqueous waste); issuance of a permit if appropriate preventive measures were taken and emission limits were met, without a specific requirement to use BAT; and extension of the time allowed for operation of existing plants without upgrading prior to closure.

The Council also sought to change the legal base from Article 100A to 130S, and approached the Parliament on this issue. The Parliament accepted the change of legal base, but in doing so it additionally took the opportunity to propose several amendments to the Council's 'political agreement' version of the proposal. These would largely have returned the proposal to its position before the Council's discussions. However, both the Commission and the Council declined to address the Parliament's comments at that stage, given that the consultation had only concerned the change of legal base.

The Council agreed a common position on the proposal in July 1994. This was similar in content to the earlier 'political agreement', and was adopted unanimously by the Council.

In its second reading, in November 1994, the European Parliament took the view that the proposal had been unacceptably weakened. In the face of a declaration by Commissioner Paleokrassas that none of the Parliament's key concerns could be accepted by the Commission, the Parliament rejected the common position. The common position was nevertheless adopted unanimously by the Council in December 1994.

Implementation of the Directive

Information on national legislation transposing Directive 94/67/EC can be found in the Member States' national [execution measures](#).

Although reports on the implementation of the Directive were to be prepared by the Member States in accordance with Standardised Reporting Directive 91/692/EEC and Decision 98/184/EC provided the questionnaire to be completed when producing implementation reports (similar to other waste legislation), none of the Commissions reports on the implementation of Community waste law included information on the implementation of Directive 94/67/EC.

Enforcement and court cases

No cases have been concluded in the European Court of Justice regarding this Directive.

Related legislation

At the time of adoption of the Directive, the principal legislation relating to hazardous waste incineration were the two framework Directives to which Directive 94/67/EEC contributed, that is the Waste Framework Directive [75/442/EEC](#) and the Directive on Emissions from Industrial Plants [84/360/EEC](#). There was also a strong link with the earlier Municipal Waste Incineration Directives [89/369/EEC](#) and [89/429/EEC](#). All of these Directives have since been repealed or are in the process of repeal and other related legislation has been adopted. For a current list of legislation related to waste incineration see the section on the Waste Incineration Directive [2000/76/EC](#).

Table 1. Emission limits (mg/m³) for hazardous waste incineration.

Pollutant	Daily averages (all samples must comply)	Half-hourly averages*	0.5–8 h averages (all samples must comply)**
Total dust	10	30/10	–
TOC	10	20/10	–
HCl	10	60/10	–
HF	1	4/2	–
SO ₂	50	200/50	–
Cd and Tl –0.05/0.1	–	–	0.05/0.1
Hg	–	–	0.05/0.1
Sb + As + Pb + Cr + Co + Cu + Mn + Ni + V + Sn (total)	–	–	0.5/1

*All measurements had to comply with the first figure for each pollutant, *or* 97 per cent had to comply with the second.

**The first figure for each pollutant applied to a new plant, the second to an existing plant.