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CONSLEG: 1984L0491 — 03/01/1994

*Number of pages: 13*

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**COUNCIL DIRECTIVE**  
**of 9 October 1984**  
**on limit values and quality objectives for discharges of hexachlorocyclohexane**  
**(84/491/EEC)**

(OJ No L 274, 17. 10. 1984, p. 11)

Amended by:

	Official Journal		
	No	page	date
Council Directive of 23 December 1991 (91/692/CEE)	L 377	48	31. 12. 1991
Agreement on the European Economic Area (2 94 A 0103(70))	L 1	495	03. 01. 1994

COUNCIL DIRECTIVE  
of 9 October 1984  
on limit values and quality objectives for discharges of hexachlorocyclohexane  
(84/491/EEC)

THE COUNCIL OF THE EUROPEAN COMMUNITIES,

Having regard to the Treaty establishing the European Economic Community, and in particular Articles 100 and 235 thereof,

Having regard to Council Directive 76/464/EEC of 4 May 1976 on pollution caused by certain dangerous substances discharged into the aquatic environment of the Community <sup>(1)</sup>, and in particular Articles 6 and 12 thereof,

Having regard to the proposal from the Commission <sup>(2)</sup>,

Having regard to the opinion of the European Parliament <sup>(3)</sup>,

Having regard to the opinion of the Economic and Social Committee <sup>(4)</sup>,

Whereas, in order to protect the aquatic environment of the Community against pollution by certain dangerous substances, Article 3 of Directive 76/464/EEC introduces a system of prior authorizations laying down emission standards for discharges of the substances on List 1 in the Annex thereto; whereas Article 6 of the said Directive provides that limit values shall be laid down for such emission standards and also quality objectives for the aquatic environment affected by discharges of these substances;

Whereas hexachlorocyclohexane (hereinafter referred to as HCH) is an organohalogen compound and is included in List I in view of its toxicity, persistence and bioaccumulation;

Whereas the Member States are required to apply the limit values except in the cases where they may employ quality objectives;

Whereas, since the pollution caused by direct discharges of HCH into water is caused, to a large extent, by the establishments which produce, treat and, as a subordinate activity, formulate it on the same site, limit values should be set for discharges from such establishments and quality objectives laid down for the aquatic environment into which HCH is discharged by such establishments;

Whereas the impact of other direct industrial sources of HCH pollution is also important; whereas, in the case of such discharges for which it is not possible, for technical reasons, to lay down limit emission values at Community level, Member States should independently fix emission standards taking into account the best technical means available;

Whereas Member States should ensure that the measures taken pursuant to this Directive do not have the effect of increasing soil and air pollution;

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<sup>(1)</sup> OJ No L 129, 18. 5. 1976, p. 23.

<sup>(2)</sup> OJ No C 215, 11. 8. 1983, p. 3.

<sup>(3)</sup> OJ No C 127, 14. 5. 1984, p. 138.

<sup>(4)</sup> OJ No C 57, 29. 2. 1984, p. 1.

Whereas a specific monitoring procedure should be laid down to enable Member States to demonstrate that the quality objectives are being complied with;

Whereas provision should be made for the monitoring by Member States of the aquatic environment affected by the aforesaid HCH discharges with a view to effective implementation of this Directive;

Whereas it is important that the Commission report to the Council every five years on the implementation of this Directive by Member States;

Whereas since groundwater is the subject of Directive 80/68/EEC <sup>(5)</sup>, it is excluded from the scope of this Directive,

HAS ADOPTED THIS DIRECTIVE:

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<sup>(5)</sup> OJ No L 20, 26. 1. 1980, p. 43.

## Article 1

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1. This Directive:
- pursuant to Article 6 (1) of Directive 76/464/EEC, lays down limit values for emission standards for HCH in discharges from industrial plants as defined in Article 2 (g) of this Directive,
  - pursuant to Article 6 (2) of Directive 76/464/EEC, lays down quality objectives for HCH in the aquatic environment,
  - pursuant to Article 6 (4) of Directive 76/464/EEC, lays down the time limits for compliance with the conditions specified in the authorizations granted by the competent authorities of Member States in respect of existing discharges,
  - pursuant to Article 12 (1) of Directive 76/464/EEC, lays down the reference methods of measurement enabling the concentration of HCH in discharges and in the aquatic environment to be determined,
  - pursuant to Article 6 (3) of Directive 76/464/EEC, establishes a monitoring procedure,
  - requires Member States to cooperate with one another in the case of discharges affecting the waters of more than one Member State.
2. This Directive applies to the waters referred to in Article 1 of Directive 76/464/EEC with the exception of groundwater.

## Article 2

For the purposes of this Directive:

- (a) 'HCH'  
means the isomers of 1, 2, 3, 4, 5, 6-hexachlorocyclohexane;
- (b) 'lindane'  
means a product containing at least 99 % of the  $\gamma$ -isomer of 1, 2, 3, 4, 5, 6-hexachlorocyclohexane
- (c) 'extraction of lindane'  
means the separation of lindane from a mixture of hexachlorocyclohexane isomers;
- (d) 'limit values'  
means the limit values specified in Annex I;
- (e) 'quality objectives'  
means the requirements specified in Annex II;
- (f) 'treatment of HCH'  
means any industrial process involving the production or use of HCH, or any other industrial process in which the presence of HCH is inherent;

- (g) 'industrial plant'  
means any plant at which HCH or any other substance containing HCH is treated;
- (h) 'existing plant'  
means an industrial plant which is operational on the date of notification of this Directive.
- (i) 'new plant' means
- an industrial plant which has become operational after the date of notification of this Directive,
  - an existing industrial plant whose capacity for the production or treatment of HCH has been substantially increased after the date of notification of this Directive.

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### Article 3

1. The limit values, the time limits by which they must be complied with and the monitoring procedure for discharges are laid down in Annex I.

2. The limit values shall normally apply at the point where waste waters containing HCH leave the industrial plant.

If waste waters containing HCH are treated outside the industrial plant at a treatment plant intended for the removal of HCH, the Member State concerned may permit the limit values to be applied at the point where the waste waters leave the treatment plant.

3. The authorizations provided for in Article 3 of Directive 76/464/EEC must contain provisions at least as stringent as those in Annex I to this Directive, except where a Member State is complying with Article 6 (3) of Directive 76/464/EEC on the basis of Annexes II and IV to this Directive.

Authorizations shall be reviewed at least every four years.

4. Without prejudice to their obligations arising from paragraphs 1, 2 and 3 and to the provisions of Directive 76/464/EEC, Member States may grant authorizations for new plants only if those plants apply the standards corresponding to the best technical means available when that is necessary for the elimination of pollution in accordance with Article 2 of the said Directive or for the prevention of distortions of competition.

Whatever method it adopts, the Member State concerned shall, where for technical reasons the measures envisaged do not correspond to the best technical means available, provide the Commission, before any authorization, with evidence in support of these reasons.

The Commission shall forward this evidence to the other Member States immediately and shall send all Member States a report, as soon as possible, giving its opinion on the derogation referred to in the second subparagraph. If necessary, it shall at the same time submit appropriate proposals to the Council.

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5. The reference method of analysis to be used in determining the presence of HCH is given in Annex III(1). Other methods may be used provided that the limits of detection, precision and accuracy of such methods are at least as good as those laid down in Annex III(I). The accuracy required in the measurement of effluent flow is given in Annex III(2).

6. Member States shall ensure that the measures taken pursuant to this Directive do not result in an increase in HCH pollution in other media, notably air and soil.

#### Article 4

The Member States concerned shall be responsible for monitoring the aquatic environment affected by industrial discharges.

In the case of discharges affecting the waters of more than one Member State, the Member States concerned shall cooperate with a view to harmonizing monitoring procedures.

#### Article 5

1. At intervals of three years Member States shall send information to the Commission on the implementation of this Directive, in the form of a sectoral report which shall also cover other pertinent Community Directives. The report shall be drawn up on the basis either of a questionnaire or outline drafted by the Commission in accordance with the procedure laid down in Article 6 of Directive 91/692/EEC<sup>(6)</sup>. The questionnaire or outline shall be sent to the Member States six months before the start of the period covered by the report. The report shall be made to the Commission within nine months of the end of the three-year period covered by it.

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The first report shall cover the period 1995 to 1997 inclusive.

The Commission shall publish a Community report on the implementation of the Directive within nine months of receiving the reports from the Member States.

3. In the event of a change in scientific knowledge relating principally to the toxicity, persistence and accumulation of HCH in living organisms and sediments, or in the event of an improvement in the best technical means available, the Commission shall submit appropriate proposals to the Council with the aim of reinforcing, if necessary, the limit values and the quality objectives or of establishing additional limit values and additional quality objectives.

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<sup>(6)</sup> OJ No L 377, 31. 12. 1991, p. 48.

Article 6

1. Member States shall bring into force the measures necessary to comply with this Directive by 1 April 1986 at the latest. They shall forthwith inform the Commission thereof.

2. Member States shall communicate to the Commission the text of the provisions of national law which they adopt in the field governed by this Directive.

Article 7

This Directive is addressed to the Member States.

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## ANNEX I

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**LIMIT VALUES, TIME LIMITS FOR COMPLIANCE  
WITH THESE VALUES AND PROCEDURE FOR MONI-  
TORING DISCHARGES**

## 1. Limit values and time limits

Industrial sector (a)	Unit of measurement	Limit values (d) to be complied with from	
		1 April 1986	1 October 1988
1. Plant for the production of HCH	grams of HCH per tonne of HCH produced (b)	3	2
	milligrams of HCH per litre discharged (c)	3	2
2. Plant for the extraction of lindane	grams of HCH per tonne of HCH treated (b)	15	4
	milligrams of HCH per litre discharged (c)	8	2
3. Plant where the production of HCH and extraction of lindane is carried out	grams of HCH per tonne of HCH produced (b)	16	5
	milligrams of HCH per litre discharged (c)	6	2

(a) The limit values in the table also include any discharges resulting from lindane formulation on the same site.

The Council will, as necessary, determine limit values and appropriate measures later for industrial sectors treating HCH which are not mentioned in this table, and in particular for industrial plants for lindane formulation producing protective agents for plants, wood and cables. Meanwhile, the Member States will independently fix emission standards for the discharges from such plants, taking into account the best technical means available.

(b) Limit values by weight (monthly average).

(c) Limit values by concentration (monthly flow-weighted average concentration of HCH).

(d) Limit values applicable to the total quantity of HCH present in all discharges of water containing HCH coming from the site of the industrial plant.

2. Limit values expressed as concentrations which in principle must not be exceeded are given in the above table. In no instance may limit values expressed as maximum concentrations be greater than limit values expressed by weight divided by water requirements per tonne of HCH produced or treated.

The limit values by weight given in the above table, expressed in terms of the quantity of HCH discharged in relation to the quantity of HCH produced or treated, must be complied with in all cases.

3. The daily average limit values are, when monitored in accordance with the provisions in points 4 and 5 below, twice the corresponding monthly average limit values given in the above table.

4. A monitoring procedure must be instituted to check whether the discharges comply with the emission standards which have been fixed in accordance with this Directive.

This procedure must provide for the taking and analysis of samples and for measurement of the flow of the discharge and the quantity of HCH produced or treated. Should the quantity of HCH produced or treated be impossible to determine, the monitoring procedure may, at most, be based on the quantity of HCH likely to be produced or treated during the period in question, taking into account the production plants in operation, and within the limits on which the authorization was based.

5. A sample representative of the discharge over a period of 24 hours will be taken. The quantity of HCH discharged over a month must be calculated on the basis of the daily quantities of HCH discharged.

However, a simplified monitoring procedure may be instituted in the case of industrial plants which do not discharge more than 3 kg of HCH per annum.

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## ANNEX II

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## QUALITY OBJECTIVES

For those Member States which apply the exception provided for in Article 6 (3) of Directive 76/464/EEC, the emission standards which Member States must establish and ensure are applied, pursuant to Article 5 of that Directive, will be fixed so that the appropriate quality objective or objectives from among those listed below is (are) complied with in the area affected by discharges of HCH. The competent authority will determine the area affected in each case and will select from among the quality objectives listed in paragraph 1 the objective or objectives that it deems appropriate having regard to the intended use of the area affected, while taking account of the fact that the purpose of this Directive is to eliminate all pollution.

1. The following quality objectives <sup>(1)</sup>, which will be measured at a point sufficiently close to the point of discharge, are hereby laid down pursuant to Article 2 of Directive 76/464/EEC with the object of eliminating pollution within the meaning of that Directive <sup>(2)</sup>.
  - 1.1. The total HCH concentration in inland surface waters affected by discharges must not exceed 100 nanograms per litre.
  - 1.2. The total concentration of HCH in estuary waters and territorial sea waters must not exceed 20 nanograms per litre.
  - 1.3. In the case of water used for the abstraction of drinking water, the HCH content must conform to the requirements of Directive 75/440/EEC <sup>(3)</sup>.
2. In addition to the above requirements, HCH concentrations in inland surface waters must be determined by the national network referred to in Article 5 of this Directive and the results compared with a total HCH concentration of 50 nanograms per litre.

If this concentration is not complied with at any one of the points on the national network, the reasons must be reported to the Commission.
3. The total concentration of HCH in sediments and/or molluscs and/or shellfish and/or fish must not increase significantly with time.

<sup>(1)</sup> The concentrations indicated in 1.1 and 1.2 are the minimum requirements necessary to protect aquatic life from pollution within the meaning of Article 1 (2) (e) of Directive 76/464/EEC.

<sup>(2)</sup> With the exception of quality objective 1.3, all concentrations relate to the arithmetic mean of the results obtained over one year.

<sup>(3)</sup> Directive 75/440/EEC concerns the quality required of surface water intended for the abstraction of drinking water in the Member States (OJ No L 194, 25. 7. 1975, p. 26). It provides for a mandatory 'total pesticides' value (including HCH).

4. Where several quality objectives are applied to waters in an area, the quality of the waters must be sufficient to comply with each of those objectives.

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## ANNEX III

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## METHODS OF MEASUREMENT

1. The reference method of analysis for determining the concentration of the substances in question in discharges and in waters will be gas chromatography with electron capture detection after extraction by means of an appropriate solvent and purification.

The accuracy <sup>(1)</sup> and precision <sup>(1)</sup> of the method must be  $\pm 50\%$  at a concentration which represents twice the value of the limit of detection.

The limit of detection <sup>(1)</sup> must be:

- in the case of discharges, one-tenth of the concentration required at the point of sampling;
- in the case of waters subject to a quality objective:
  - (i) for inland surface waters, one-tenth of the concentration indicated in the quality objective;
  - (ii) for estuary waters and territorial sea waters, one-fifth of the concentration indicated in the quality objective;
- in the case of sediments,  $1\ \mu\text{g}/\text{kg}$  dry weight;
- in the case of living organisms,  $1\ \mu\text{g}/\text{kg}$ , wet weight.

2. Effluent flow measurements must be carried out to an accuracy of  $\pm 20\%$ .

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<sup>(1)</sup> The definitions of these terms are given in Directive 79/869/EEC of 9 October 1979 concerning the methods of measurement and frequencies of sampling and analysis of surface water intended for the abstraction of drinking water in the Member States (OJ No L 271, 29. 10. 1979, p. 44).

## ANNEX IV

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PROCEDURE FOR MONITORING QUALITY  
OBJECTIVES

1. For each authorization granted pursuant to this Directive, the competent authority will specify the detailed rules monitoring procedure and time limits for ensuring compliance with the quality objective(s) concerned.
2. In accordance with Article 6 (3) of Directive 76/464/EEC, the Member States will, for each quality objective chosen and applied, report to the Commission on:
  - the points of discharge and the means of dispersal,
  - the area in which the quality objective is applied,
  - the location of sampling points,
  - the frequency of sampling,
  - the methods of sampling and measurement,
  - the results obtained.
3. Samples must be sufficiently representative of the quality of the aquatic environment in the area affected by the discharges, and the frequency of sampling must be sufficient to show any changes in the aquatic environment, having regard in particular to natural variations in the water regime.