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COUNCIL DIRECTIVE

of 22 March 1982

on limit values and quality objectives for mercury discharges by the chlor-alkali electrolysis industry

(82/176/EEC)

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COUNCIL DIRECTIVE
of 22 March 1982

**on limit values and quality objectives for mercury discharges by
the chlor-alkali electrolysis industry**

(82/176/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 Directive 76/464/EEC of 4 May 1976 on pollution caused by certain dangerous substances discharged into the aquatic environment of the Community⁽¹⁾, and in particular Article 6 thereof,

Having regard to the proposal from the Commission⁽²⁾,

Having regard to the opinion of the European Parliament⁽³⁾,

Having regard to the opinion of the Economic and Social Committee⁽⁴⁾,

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

Whereas mercury and its compounds are included in List I;

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 discharges of mercury into water is caused, to a large extent, by the electrolysis of alkali chlorides, in the first instance limit values should be established for this industry and quality objectives should be laid down for the aquatic environment into which mercury is discharged by this industry; whereas such discharges should therefore require prior authorization;

Whereas the purpose of such quality objectives must be to eliminate mercury pollution of the various parts of the aquatic environment which might be affected by mercury-bearing discharges from the chlor-alkali electrolysis industry;

Whereas such quality objectives must be laid down expressly for this purpose and not with the intention of establishing rules pertaining to consumer protection or to the marketing of products from the aquatic environment;

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

Whereas provision should be made for the monitoring by the Member States of the aquatic environment affected by the said mercury discharges with a view to efficient application of this Directive; whereas Article 6 of Directive 76/464/EEC does not provide for the powers to introduce such monitoring; whereas, since the necessary powers of action have not been provided for in the Treaty, Article 235 thereof should be invoked;

⁽¹⁾ OJ No L 129, 18. 5. 1976, p. 23.

⁽²⁾ OJ No C 169, 6. 7. 1979, p. 2.

⁽³⁾ OJ No C 341, 31. 12. 1980, p. 24.

⁽⁴⁾ OJ No C 83, 2. 4. 1980, p. 16.

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Whereas it is important that the Commission forward to the Council, every five years, a comparative assessment of the implementation of this Directive by the Member States;

Whereas, since groundwater is the subject of a specific Directive, it is excluded from the scope of this Directive,

HAS ADOPTED THIS DIRECTIVE:

Article 1

1. This Directive:

- in pursuance of Article 6 (1) of Directive 76/464/EEC, lays down limit values for emission standards for mercury in discharges from industrial plants as defined in Article 2 point (d) of this Directive,
- in pursuance of Article 6 (2) of Directive 76/464/EEC, lays down quality objectives for mercury in the aquatic environment,
- in pursuance of Article 6 (4) of Directive 76/464/EEC, lays down the time limits for compliance with the conditions of the authorizations granted by the competent authorities of Member States in the case of existing discharges,
- in pursuance of Article 12 (1) of Directive 76/464/EEC, lays down the reference methods of measurement enabling the mercury content in discharges and in the aquatic environment to be determined,
- in pursuance of 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) 'mercury' means:
 - the chemical element mercury,
 - the mercury contained in any of its compounds;
- (b) 'limit values' means:
 - the values specified in Annex I;
- (c) 'quality objectives' means:
 - the requirements specified in Annex II;
- (d) 'industrial plant' means:
 - a plant in which alkali chlorides are electrolyzed by means of mercury cells;
- (e) 'existing plant' means:
 - an industrial plant which is operational on the date of notification of this Directive;
- (f) '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 electrolysis of alkali chlorides by means of mercury cells has been substantially increased after the date of notification of this Directive.

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.

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

The authorizations shall be reviewed at least every four years.

3. Without prejudice to their obligations arising out of paragraphs 1 and 2 and the provisions of Directive 76/464/EEC, Member States may grant authorizations for new plants only if such authorizations contain a reference to the standards corresponding to the best technical means available for preventing discharges of mercury.

Whatever the method it adopts, the Member State, where for technical reasons the intended measures do not conform to the best technical means available, shall provide the Commission, before any authorization, with the justifications for these reasons.

Within three months, the Commission shall send a report to the Member States stating its opinion on the derogation covered by the second subparagraph.

4. The reference method of analysis for determining the presence of mercury are 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.1. The accuracy required in the measurement of effluent flow is given in Annex III.2.

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 several Member States, the Member States concerned shall cooperate with a view to harmonizing monitoring procedures.

*Article 5***▼M1**

At intervals of three years the 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. This report shall be drawn up on the basis of a questionnaire or outline drafted by the Commission in accordance with the procedure laid down in Article 6 of Directive 91/692/EEC⁽¹⁾. 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 sent to the Commission within nine months of the end of the three-year period covered by it.

The first report shall cover the period from 1993 to 1995 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.

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In the event of a change in scientific knowledge relating principally to the toxicity, persistence and accumulation of mercury 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.

⁽¹⁾ OJ No L 377, 31. 12. 1991, p. 48.

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Article 6

1. Member States shall bring into force the measures necessary to comply with this Directive before 1 July 1983. 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

Limit values, time limits by which they must be complied with, and monitoring procedure for discharges

1. The limit values expressed in terms of concentration which, in principle, should not be exceeded are set out in the following table.

Unit of measurement	Monthly average limit values not to be exceeded from 1 July		Remarks
	1983	1986	
<i>Recycled brine and lost brine</i> Micrograms of mercury per litre	75	50	Applicable to the total quantity of mercury present in all mercury-containing water discharged from the site of the industrial plant

In all cases, limit values expressed as maximum concentrations may not be greater than those expressed as maximum quantities divided by water requirements per tonne of installed chlorine production capacity.

2. However, because the concentration of mercury in effluents depends upon the volume of water involved, which is different for different processes and plants, the limit values expressed in terms of quantity of mercury discharged in relation to installed chlorine production capacity given in the following table must be observed in all cases.

Unit of measurement	Monthly average limit values not to be exceeded from 1 July		Remarks
	1983	1986	
<i>Recycled brine</i> Grams of mercury per tonne of installed chlorine production capacity	0.5	0.5	Applicable to the mercury present in effluent discharged from the chlorine production unit
	1.5	1.0	Applicable to the total quantity of mercury present in all mercury-containing water discharged from the site of the industrial plant
<i>Lost brine</i> Grams of mercury per tonne of installed chlorine production capacity	8.0	5.0	Applicable to the total quantity of mercury present in all mercury-containing water discharged from the site of the industrial plant

3. The daily average limit values are four times the corresponding monthly average limit values given in points 1 and 2.
4. In order to check whether the discharges comply with the emission standards which have been fixed in accordance with the limit values laid down in this Annex, a monitoring procedure must be instituted. This procedure must provide for:
- the taking each day of a sample representative of the discharge over a period of 24 hours and the measurement of the mercury concentration of that sample, and
 - the measurement of the total flow of the discharge over that period.

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The quantity of mercury discharged during a month must be calculated by adding together the quantities of mercury discharged each day during that month. This total must then be divided by the installed chlorine production capacity.

*ANNEX II***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, shall be fixed so that the appropriate quality objective or objectives from among those listed below is or are complied with in the area affected by discharges of mercury from the chlor-alkali electrolysis industry. The competent authority shall determine the area affected in each case and shall 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, taking account of the fact that the purpose of this Directive is to eliminate all pollution.

1. In order to eliminate pollution as defined in Directive 76/464/EEC, and pursuant to Article 2 of that Directive, the following quality objectives are set:
 - 1.1. The concentration of mercury in a representative sample of fish flesh chosen as an indicator must not exceed 0.3 mg/kg wet flesh.
 - 1.2. The total concentration of mercury in inland surface waters affected by discharges must not exceed 1 µg/l as the arithmetic mean of the results obtained over a year.
 - 1.3. The concentration of mercury in solution in estuary waters affected by discharges must not exceed 0.5 µg/l as the arithmetic mean of the results obtained over a year.
 - 1.4. The concentration of mercury in solution in territorial sea waters and internal coastal waters other than estuary waters affected by discharges must not exceed 0.3 µg/l as the arithmetic mean of the results obtained over a year.
 - 1.5. The quality of the waters must be sufficient to comply with the requirements of any other Council Directive applicable to such waters as regards the presence of mercury.
2. The concentration of mercury in sediments or in shellfish must not increase significantly with time.
3. Where several quality objectives are applied to waters in an area, the quality of the waters must be sufficient to meet each of them.
4. The numerical values of the quality objectives specified in 1.2, 1.3 and 1.4 may, as an exception and where this is necessary for technical reasons, be multiplied by 1.5 until 30 June 1986, provided that the Commission has been notified beforehand.

▼B*ANNEX III***Reference method of measurement**

1. The reference method of analysis for determining the mercury content in waters, the flesh of fish, sediments and shellfish is by flameless atomic absorption spectrophotometry after suitable pretreatment of the sample which takes account in particular of pre-oxidation of the mercury and of successive reduction of the mercury ions Hg (II).

The limits of detection⁽¹⁾ must be such that the mercury concentration can be measured to an accuracy⁽¹⁾ of $\pm 30\%$ and a precision⁽¹⁾ of $\pm 30\%$ at the following concentrations:

- in the case of discharges, one tenth of the maximum permitted concentration of mercury specified in the authorization,
 - in the case of surface water, one tenth of the mercury concentration specified in the quality objective,
 - in the case of the flesh of fish and shellfish, one tenth of the mercury concentration specified in the quality objective,
 - in the case of sediments, one tenth of the mercury concentration in the sample or 0.05 mg/kg dry weight, whichever is the greater.
2. Flow measurement must be carried out to an accuracy of $\pm 20\%$.

⁽¹⁾ The definitions of these terms are as given in Council 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***Monitoring procedure for quality objectives**

1. For each authorization granted in pursuance of this Directive, the competent authority shall specify the restrictions, the monitoring procedure and deadlines for ensuring compliance with the quality objective or objectives concerned.
2. In accordance with Article 6 (3) of Directive 76/464/EEC, the Member State shall report to the Commission for each quality objective chosen and applied, 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 of measurement,
 - the results obtained.
3. Samples must be properly 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, taking into account in particular natural variations in the hydrological regime. The salt-water fish analysis must be carried out on a sufficiently representative number of samples and species.
4. With regard to the quality objective in 1.1 of Annex II, the competent authority shall choose the species of fish to be adopted as indicators for analysis. For salt waters the species chosen from among those inhabiting coastal waters and caught locally may include cod, whiting, plaice, mackerel, haddock and flounder.

Statement on Article 3 (3)

The Council and the Commission state that the application of the best technical means available makes it possible to limit discharges of mercury from the site of a new industrial plant using the recycled-brine process to less than 0.5 g/tonne of installed chlorine production capacity.