

**Proposal for a Council Decision concerning the approval, on behalf of the Community, of OSPAR Decision 98/4 on emission and discharge limit values for the manufacture of vinyl chloride monomer and of OSPAR Decision 98/5 on emission and discharge limit values for the vinyl chloride sector**

(1999/C 158/04)

(Text with EEA relevance)

COM(1999) 190 *final* — 99/0098 (CNS)

*(Submitted by the Commission on 26 April 1999)*

THE COUNCIL OF THE EUROPEAN UNION,

Having regard to the Treaty establishing the European Community, and in particular Article 130r(4), the first sentence of Article 228(2) and the first subparagraph of Article 228(3) thereof,

Having regard to the Commission proposal,

Having regard to the opinion of the European Parliament,

(1) Whereas the Community is a Contracting Party to the Convention for the protection of the marine environment of the north-east Atlantic (OSPAR Convention) pursuant to Council Decision 98/249/EC of 7 October 1997<sup>(1)</sup>; whereas the aim of that Convention, which entered into force on 25 March 1998, is to prevent and eliminate pollution and to protect the maritime area against the harmful effects of human activities;

(2) Whereas the executive body of the OSPAR Convention (the OSPAR Commission) may adopt measures in the fields covered by the Convention; whereas it has adopted OSPAR Decisions 98/4 and 98/5 on emission and discharge limit values for the manufacture of vinyl chloride monomer (VCM), including the manufacture of 1,2-dichloroethane (EDC), and on emission and discharge limit values for the vinyl chloride sector, applying to the manufacture of suspension-PVC (s-PVC) from vinyl chloride monomer (VCM);

(3) Whereas the Commission has taken part in the negotiations in accordance with the Council conclusions concerning negotiating directives for the Convention for the protection of the marine environment of the north-east Atlantic;

(4) Whereas the Council has adopted Directive 96/61/EC<sup>(2)</sup> concerning integrated prevention and reduction of pollution, Directives 76/464/EEC<sup>(3)</sup> and 86/280/EEC<sup>(4)</sup> on discharges of certain dangerous substances and Directive 84/360/EEC<sup>(5)</sup> on the combating of air pollution from industrial plants;

(5) Whereas the Community should approve this Decision,

HAS DECIDED AS FOLLOWS:

*Sole article*

1. OSPAR Decision 98/4 on emission and discharge limit values for the manufacture of vinyl chloride

<sup>(1)</sup> OJ L 104, 3.4.1998, p. 1.

<sup>(2)</sup> OJ L 257, 10.10.1996, p. 26.

<sup>(3)</sup> OJ L 129, 18.5.1976, p. 23.

<sup>(4)</sup> OJ L 181, 4.7.1986, p. 16.

<sup>(5)</sup> OJ L 188, 16.7.1984, p. 20.

monomer (VCM), including the manufacture of 1,2-dichloroethane (EDC), and OSPAR Decision 98/5 on emission and discharge limit values for the vinyl chloride sector, applying to the manufacture of suspension-PVC (s-PVC) from vinyl chloride monomer, are hereby approved on behalf of the Community.

2. The Commission is authorised to notify this approval to the OSPAR Commission.

Done at ...

The text of the said Decisions is attached to this Decision.

*For the Council*

...

*The President*

## OSPAR DECISION 98/4

**on emission and discharge limit values for the manufacture of vinyl chloride monomer (VCM) including the manufacture of 1,2-dichloroethane (EDC)**

RECALLING Article 2(1) of the Convention for the protection of the marine environment of the north-east Atlantic ('OSPAR Convention'),

RECALLING that the 1997/1998 Action Plan of the Oslo and Paris Commissions calls for the adoption of further measures, including the application of best available techniques (BAT) and best environmental practice (BEP), for the reduction or elimination of inputs to the maritime area from specific industrial sectors, and in considering these sectors, attention should be given in particular to activities which result in inputs of hazardous substances (especially organohalogen substances) and to the reduction of such inputs, with the aim of their elimination,

RECALLING that the Oslo and Paris Commissions published in 1996 a Description of BAT for the vinyl chloride industry,

RECALLING PARCOM Recommendation 96/2 concerning best available techniques for the manufacture vinyl chloride monomer (VCM),

NOTING Council Directive 96/61/EC concerning integrated pollution prevention and control (IPPC Directive) and corresponding legislation of other Contracting Parties,

RECOGNISING that the vinyl chloride industry has the potential to release significant amounts of organohalogens to the environment,

RECOGNISING that the releases of chlorinated hydrocarbons arising in the manufacture of VCM can be minimised by applying BAT,

THE CONTRACTING PARTIES TO THE CONVENTION FOR THE PROTECTION OF THE MARINE ENVIRONMENT OF THE NORTH-EAST ATLANTIC DECIDE THAT:

**1. Definitions**

For the purposes of this Decision:

'chlorinated hydrocarbons'	means the sum of at least 1,2-dichloroethane (EDC), vinyl chloride monomer (VCM), chloroform, carbon tetrachloride, trichloroethane, methyl chloride and hexachlorobenzene;
'existing plant'	means plant the operation of which was authorised before 9 February 1999;
'new plant'	means plant the operation of which was authorised on or after 9 February 1999;
'VCM-plant'	means plant manufacturing VCM and/or EDC from ethylene and chlorine and/or hydrochloric acid (HCl) as feedstock;
'dioxins'	means polychlorinated dibenzo-p-dioxins and polychlorinated dibenzofuranes, reported as Toxic Equivalents (TEQ);
'fugitive emissions'	means releases into air due to leakages.

## 2. Scope

- 2.1. The purpose of this Decision is to prevent and eliminate pollution and to take the necessary measures to protect the maritime area against the adverse effects of human activities due to the manufacture of VCM including the manufacture of EDC.
- 2.2. This Decision lays down limit values for releases of certain hazardous substances into water and air from the manufacturing process of VCM including EDC from ethylene and chlorine and/or HCl as feedstock.
- 2.3. The discharge limit values in table 3.2. apply only to VCM plants from which discharges may reach the maritime area of the OSPAR Convention by waterborne routes.
- 2.4. The emission limit values in table 3.1. apply to all VCM plants of Contracting Parties.

## 3. Programmes and measures

### 3.1. General provisions

- 3.1.1. The annual averages of emissions from VCM plants to the air shall not exceed the emission limit values in table 3.1.
- 3.1.2. The annual averages of discharges from VCM plants to the water environment shall not exceed the discharge limit values in table 3.2.
- 3.1.3. The dilution of treated or untreated waste air or waste water streams for the purpose of compliance with limit values as set out in points 3.2. and 3.3. shall not be permitted.

### 3.2. Emissions to air:

- 3.2.1. Potential point sources of gas emissions from the installation/equipment shall be collected as far as possible for treatment in an incinerator or in equipment with comparable performance.

Table 3.1. — Emission limit values

Substance	Limit value <sup>(1)</sup>
VCM	5 mg/Nm <sup>3</sup>
EDC	5 mg/Nm <sup>3</sup>
Dioxins	0,1 ng/Nm <sup>3</sup> (TEQ)
HCl	30 mg/Nm <sup>3</sup>

<sup>(1)</sup> Standardised at the following conditions: temperature 273°K, pressure 101,3 kPa and 11 % O<sub>2</sub>.

Fugitive emissions to air shall be minimised as far as possible.

3.3. *Discharges to water* (total of aqueous waste streams)

Table 3.2. — Discharge limit values

Substance	Sampling point	Limit values	
		Concentration	Releases in unit of weight per tonne
Chlorinated hydrocarbons	After stripper, before secondary treatment		0,7 g/tonne EDC purification capacity
Copper (total)	After final treatment		For plants with fixed bed reactors: 0,5 g/tonne of oxychlorination capacity for plants with fluidised bed reactors: 1,0 g/tonne of oxychlorination capacity
Dioxins	After final treatment		1 $\mu\text{g}$ TEQ per tonne oxychlorination capacity
Chemical Oxygen Demand (COD)	After final treatment	250 mg/litre	

3.3.1. Adsorbable organic halogen compounds (AOX) or extractable organic halogen compounds (EOX) can be used as optional alternative parameters for chlorinated hydrocarbons, provided that a correlation, on a plant by plant basis, between AOX or EOX and chlorinated hydrocarbons has been established and will be reported in the reporting on implementation. On sites where no VCM is manufactured and EDC is not purified, the discharge limits for chlorinated hydrocarbons shall be defined in terms of EDC production capacity and not in terms of EDC purification capacity.

3.3.2. As copper discharges are related only to oxychlorination technology, their limits shall only be applied to discharges of the oxychlorination processes for VCM/EDC production.

3.3.3. On sites where no VCM is manufactured and oxychlorination processes are not used for VCM/EDC production, the discharge limits for dioxins shall be defined in terms of EDC production capacity. In this case, the limit value shall be 0,1  $\mu\text{g}$  TEQ per tonne of EDC production capacity.

3.3.4. As an alternative to the discharge limit value of 250 mg/litre for COD, a 90 % reduction of the load of COD may be applied.

3.3.5. As an alternative to COD as parameter, total organic carbon (TOC) may be used as a control parameter, provided a correlation factor between COD and TOC has been established.

3.4. *Sampling*

3.4.1. Samples shall be taken for analysis on the following bases:

- (a) for emissions to the atmosphere, a sample, or a number of samples, representative of such emissions over a period of one hour;
- (b) for discharges to water, a sample, or a number of samples, representative of such discharges over a period of one day. Analysis of chlorinated hydrocarbons (or AOX or EOX) shall be performed on the basis of spot samples over a period of one day.

- 3.4.2. The frequency of analysis shall be determined by the competent authorities taking into account the results obtained.
- 3.4.3. For dioxins, one analysis per year can be sufficient, provided that the sampling procedure ensures representative samples.
- 3.4.4. Water samples shall be homogenised, unfiltered and undecanted, where this is compatible with the analytical methodology specified in table 3.3.
- 3.5. *Analyses*
- 3.5.1. The analytical methods set out in table 3.3., or methods yielding equivalent results, shall be used:

Table 3.3. — Analytical methods

COD	To be analysed by using potassium dichromate oxidation (See ISO 6060, second edition)
TOC	To be analysed in accordance with EN 1484
AOX, EOX	To be analysed according to ISO 9562 and EN 1485
Cu (total)	To be analysed by using flame atomic absorption spectrometry (See ISO 8288: Water Quality — determination of cobalt, nickel, copper, zinc, cadmium and lead. — Flame atomic absorption spectrometric methods)
EDC	To be analysed by gas chromatography
VCM	To be analysed by gas chromatography
Dioxins	To be analysed according to EN 1948 parts 1-3
Chlorinated hydrocarbons	To be analysed by gas chromatography
Fugitive emissions	To be quantified by using appropriate methods (e.g. by using a trace gas technique)

#### 4. Entry into force

- 4.1. This Decision enters into force on 9 February 1999 for new plants and on 1 January 2006 for existing plants. The programmes and measures of this Decision shall be applied to:
- new plants from 9 February 1999;
  - existing plants from 1 January 2006.
- 4.2. In the case of technical modifications to an existing VCM plant, the competent authorities shall decide whether the provisions for existing plants in this Decision still apply to the modified plant.

#### 5. Implementation reports

- 5.1. Reports on the implementation of this Decision shall be submitted to the appropriate OSPAR working group in accordance with OSPAR's Standard Implementation Reporting and Assessment Procedure. In respect of existing plants this reporting shall commence in the intersessional period 2007/2008.
- 5.2. When reporting on implementation, the format as set out in the Appendix should be used to the extent possible.

Appendix

Format for implementation reports of OSPAR Decision 98/4 on emission and discharge limit values for the manufacture of vinyl chloride monomer (VCM) (including manufacture of 1,2-dichloroethane (EDC))

I. IMPLEMENTATION REPORT ON COMPLIANCE

Country:

Reservation applies

Is measure applicable in your country?

If not applicable, then state why not (e.g. no relevant plant)

.....  
.....  
.....  
.....  
.....  
.....

Means of implementation:

By legislation	By administrative action	By negotiated agreement
yes/no (1)	yes/no (1)	yes/no (1)

Please provide information on:

- (a) specific measures taken to give effect to this measure;
- (b) any special difficulties encountered, such as practical or legal problems, in the implementation of this measure;
- (c) the reasons for not having fully implemented this measure should be spelt out clearly and plans for full implementation should be reported.

.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....

(1) Delete as appropriate.

## II. IMPLEMENTATION REPORT ON EFFECTIVENESS

Contracting Parties should endeavour to report also the following items in accordance with the reporting format.

### Emissions into the atmosphere

(annual averages, accompanied by appropriate statistical information)

Plant/site	Production <sup>(a)</sup> (tonnes)	EDC (mg/m <sup>3</sup> )	VCM (mg/m <sup>3</sup> )	HCl (mg/m <sup>3</sup> )	Dioxins (ng/Nm <sup>3</sup> (TEQ))

- <sup>(a)</sup> Production in tonnes for the year of reporting can be given either as:
- Actual production of VCM or EDC (indicate as 'A-VCM' or 'A-EDC');
  - Production capacity of VCM (indicate as 'PC-VCM');
  - Production capacity of EDC (indicate as 'PC-EDC');
  - EDC purification capacity (indicate as 'PU-EDC'); or
  - Oxychlorination capacity (indicate as 'O-C').

### Discharges into water

(annual averages, accompanied by appropriate statistical information)

Plant/site	Chlorinated hydrocarbons (g/tonne EDC purification capacity) <sup>(a)</sup>	Cu (total) (g/tonne of oxychlorination capacity) <sup>(b)</sup>		Dioxins (µg TEQ per tonne oxychlorination capacity) <sup>(b)</sup>	COD (mg/l) <sup>(b)</sup>
		fixed bed	fluidised bed		

<sup>(a)</sup> Chlorinated hydrocarbons (to be sampled after stripper, before secondary treatment) may alternatively be calculated from AOX or EOX if a correlation, on a plant-by-plant basis, has been established. The application of those alternatives should be described in the implementation report.

<sup>(b)</sup> To be sampled after final treatment.



## OSPAR DECISION 98/5

on emission and discharge limit values for the vinyl chloride sector, applying to the manufacture of suspension-PVC (s-PVC) from vinyl chloride monomer (VCM)

THE CONTRACTING PARTIES TO THE CONVENTION FOR THE PROTECTION OF THE MARINE ENVIRONMENT OF THE NORTH-EAST ATLANTIC

RECALLING Article 2(1) of the Convention for the protection of the marine environment of the north-east Atlantic ('OSPAR Convention'),

RECALLING that the 1997/1998 Action Plan of Oslo and Paris Commissions calls for the adoption of further measures, including the application of best available techniques (BAT) and best environmental practice (BEP), for the reduction or elimination of inputs to the maritime area from specific industrial sectors, and in considering these sectors, attention should be given in particular to activities which result in inputs of hazardous substances (especially organohalogen substances) and to the reduction of such inputs, with the aim of their elimination,

RECALLING that the Oslo and Paris Commissions published in 1996 a Description of BAT for the Vinyl Chloride Industry,

RECALLING PARCOM Recommendation 96/3 concerning Best Available Techniques for the Manufacture of s-PVC from VCM,

NOTING Council Directive 96/61/EC concerning integrated pollution prevention and control (IPPC Directive) and corresponding legislation of other Contracting Parties,

RECOGNISING that the vinyl chloride industry has the potential to release significant amounts of organohalogens to the environment,

RECOGNISING that the release of chlorinated hydrocarbons arising in the manufacture of s-PVC can be minimised by applying BAT and BEP,

DECIDE THAT:

1. **Definitions**

For the purposes of this Decision:

- |                      |   |
|----------------------|---|
| 'existing plant'     | means plant the operation of which was authorised before 9 February 1999;   |
| 'new plant'          | means plant the operation of which was authorised on or after 9 February 1999;  |
| 'single plant'       | means plant manufacturing suspension-polyvinyl chloride (s-PVC);  |
| 'combined plant'     | means plant manufacturing s-PVC and being part of an industrial site, where other chemical processes are being carried out; |
| 'fugitive emissions' | means releases into air due to leakages.  |

## 2. Scope

- 2.1. The purpose of this Decision is to prevent and eliminate pollution and to take the necessary measures to protect the maritime area against the adverse effects of human activities due to the manufacture of s-PVC from vinyl chloride monomer (VCM).
- 2.2. This Decision lays down limit values for releases of certain hazardous substances into water and air from the manufacturing process of s-PVC from VCM, i. e. polyvinyl chloride produced from VCM by the suspension process.
- 2.3. This discharge limit values in tables 3.2 and 3.3 apply only to single or combined plants from which discharges may reach the maritime area of the OSPAR Convention by waterborne routes.
- 2.4. The emission limit values in table 3.1 apply to all single or combined plants of Contracting Parties.

## 3. Programmes and measures

### 3.1. General provisions

- 3.1.1. The annual averages of emissions from plants producing s-PVC to the air shall not exceed the emission limit values in table 3.1.
- 3.1.2. The annual averages of discharges from plants producing s-PVC to the water environment shall not exceed the discharge limit values in tables 3.2 and 3.3.
- 3.1.3. The dilution of treated or untreated waste air or waste water streams for the purpose of compliance with limit values as set out in paragraphs 3.2. and 3.3. and shall not be permitted.

### 3.2. Emissions to air from point sources

Table 3.1. — Emission limit values

Substance	Limit value
VCM	80 g VCM per tonne s-PVC produced

- 3.2.1. Fugitive emissions shall be minimised as far as possible. They should be measured from the s-PVC production applying modern techniques.

### 3.3. Discharges to water

- (a) After effluent stripper, before secondary treatment

Table 3.2. — Discharge limit values

Substance	Limit value
VCM	1 mg VCM per litre
	5 g VCM per tonne s-PVC produced

- 3.3.1. Adsorbable organic halogen compounds (AOX) or extractable organic halogen compounds (EOX) can be used as optional alternative parameters for VCM, provided that a correlation, on a plant by plant basis, between AOX or EOX and VCM has been established and will be reported in the reporting on implementation.

(b) At outlet of effluent water treatment plant

Table 3.3. — Discharge limit values

Substance	Limit value
Chemical oxygen demand (COD)	For single plants: 125 mg COD per litre For combined plants: 250 mg COD per litre
Suspended solids	30 mg suspended solids per litre

3.3.2. The main parts of the suspended solids referred to in table 3.3. are PVC particles. These suspended solids may be calculated from AOX if a correlation, on a plant by plant basis, between AOX and suspended solids has been established and will be reported in the reporting on implementation.

3.3.3. As an alternative to the discharge limit value of 250 mg/litre for chemical oxygen demand (COD), a 90 % reduction of the load of COD may be applied.

3.3.4. As an alternative to COD as parameter, total organic compounds (TOC) may be used as a control parameter, provided that a correlation factor between COD and TOC has been established.

#### 3.4. Sampling

3.4.1. Samples shall be taken for analysis on the following bases:

- (a) for emissions to the atmosphere, a sample, or a number of samples, representative of such emissions over a period of one hour;
- (b) for discharges to water, a sample, or a number of samples, representative of such discharges over a period of one day. Analysis of chlorinated hydrocarbons (or AOX or EOX) shall be performed on the basis of spot samples over a period of one day.

3.4.2. The frequency of analysis shall be determined by competent authorities taking into account the results obtained.

3.4.3. Water samples shall be homogenised, unfiltered and undecanted, where this is compatible with the analytical methodology specified in table 3.4.

#### 3.5. Analyses

3.5.1. The analytical methods set out in table 3.4, or methods yielding equivalent results, shall be used:

Table 3.4. — Analytical methods

VCM	To be analysed by gas chromatography
TOC	To be analysed in accordance with EN 1484
AOX, EOX	To be analysed according to ISO 9562 and EN 1485
COD	To be analysed by using potassium dichromate oxidation (See ISO 6060, second edition)
Suspended solids	To be determined in water effluent by filtration through glass fibre filters (see EN 872)
Fugitive emissions of VCM	To be quantified by using appropriate methods (e.g. by using a trace gas technique)

**4. Entry into force**

- 4.1. This Decision enters into force on 9 February 1999 for new plants and on 1 January 2003 for existing plants. The programmes and measures of this Decision shall be applied to:
- (a) new plants from 9 February 1999;
  - (b) existing plants from 1 January 2003.
- 4.2. In the case of technical modification to an existing PVC plant, the competent authorities shall decide whether the provisions for existing plants in this Decision still apply to the modified plant.

**5. Implementation reports**

- 5.1 Reports on the implementation of this Decision shall be submitted to the appropriate OSPAR working group in accordance with OSPAR's Standard Implementation Reporting and Assessment Procedure. In respect of existing plants this reporting shall commence in the intersessional period 2004/2005.
- 5.2 When reporting on implementation, the format as set out in the Appendix should be used to the extent possible.
-

Appendix

Format for implementation reports of OSPAR Decision 98/5 on emission and discharge limit values for the vinyl chloride sector, applying to the manufacture of s-PVC from VCM

I. IMPLEMENTATION REPORT ON COMPLIANCE

Country: [ ]

Reservation applies [yes/no (1)]

Is measure applicable in your country? [yes/no (1)]

If not applicable, then state why not (e.g. no relevant plant)

.....
.....
.....
.....
.....
.....
.....

Table with 3 columns: Means of Implementation, By legislation, By administrative action, By negotiated agreement. Rows for yes/no (1).

Please provide information on:

- (a) specific measures taken to give effect to this measure;
(b) any special difficulties encountered, such as practical or legal problems, in the implementation of this measure;
(c) the reasons for not having fully implemented this measure should be spelt out clearly and plans for full implementation should be reported.

.....
.....
.....
.....
.....
.....
.....

(1) Delete as appropriate.

## II. IMPLEMENTATION REPORT ON EFFECTIVENESS

Contracting Parties should endeavour to report also the following items in accordance with the reporting format.

### Emissions into the atmosphere

(annual averages, accompanied by appropriate statistical information, including sampling frequencies)

Plant/ site	Production <sup>(a)</sup> (tonnes)	VCM (g/tonne s-PVC; point sources)	VCM (g/tonne s-PVC; fugitives)	Description of techniques to estimate fugitive emissions

<sup>(a)</sup> — Actual production of PVC (indicate as A-PVC)  
— Production capacity of PVC (indicate as P-PVC)

### Discharges into water

(annual averages, accompanied by appropriate statistical information, including sampling frequencies)

Plant/ site	VCM <sup>(a)</sup> <sup>(c)</sup> (mg/l)	VCM <sup>(a)</sup> <sup>(c)</sup> (g/tonne s-PVC)	COD <sup>(d)</sup> (mg/l)		Suspended solids <sup>(b)</sup> <sup>(d)</sup> (mg/l)
			Single plants	Combined plants	

<sup>(a)</sup> Please state correlation when VCM data are based on AOX or EOX measurements.  
<sup>(b)</sup> Please state correlation when suspended solids data are based on AOX measurements.  
<sup>(c)</sup> After effluent stripper, before secondary treatment.  
<sup>(d)</sup> At outlet of effluent water treatment plant.