

L.N. 227 of 2001

**ENVIRONMENT PROTECTION ACT, 2001  
(ACT NO. XX OF 2001)**

**Limit Values and Quality Objectives for Discharges of Certain  
Dangerous Substances into the Aquatic Environment  
Regulations, 2001**

BY virtue of the powers conferred by articles 3, 9, 11 and 28 of the Environment Protection Act, 2001, the Minister for the Environment has made the following regulations:-

Citation and entry  
into force.

1. (1) The title of these regulations is the Limit Values and Quality Objectives for Discharges of Certain Dangerous Substances Discharged into the Aquatic Environment Regulations, 2001.

(2) These regulations shall come into force on such date as the Minister responsible for the environment may by notice in the Gazette appoint, and different dates may be so appointed for different provisions and different purposes of these regulations.

(3) A notice under sub-regulation (2) of this regulation may make such transitional provisions as appear to the Minister to be necessary or expedient in connection with the provisions thereby brought into force.

Definitions.

2. (1) For the purpose of these regulations and unless the context otherwise requires:-

“competent authority” means the Department for Environment Protection under the guidance of the Director for Environment Protection and such other body or person as the Minister responsible for the environment may by order in the Gazette prescribe and different bodies or persons may be designated as a competent authority for different provisions and different purposes of these regulations;

“existing plant” means an industrial plant which is operational on the date of entry into force of these regulations;

“handling of substances” means any industrial process involving the production, the processing or use of substances, or

any other industrial process in which the presence of such substances is inherent;

“industrial plant” means a plant at which substances, or any other substances containing them, are handled;

“limit values” means the values specified in Annex II, under heading A, in respect of substances;

“new plant” means:

(a) an industrial plant which becomes operational after the entry into force of these regulations;

(b) an existing industrial plant whose capacity for handling the substances is substantially increased after the entry into force of these regulations;

“quality objectives” means the requirements specified in Annex II, under heading B, in respect of substances;

“substances” means those dangerous substances, belonging to the families and groups of substances appearing in List I in the Annex to the Pollution Caused by Certain Dangerous Substances Discharged into the Aquatic Environment Regulations, which are specified in Annex II to these regulations;

(2) These regulations apply to the waters referred to in sub-regulation (2) of regulation (2) of the Pollution Caused by Certain Dangerous Substances Discharged into the Aquatic Environment Regulations, with the exception of ground water.

3. (1) The limit values, the time limits for compliance therewith and the procedures for monitoring discharges are laid down in the Annexes, under heading A. Limit Values.

(2) (a) The competent authority shall apply the limit values at the point where waste waters containing substances leave the industrial plant:

Provided that if the competent authority considers, in the case of certain substances, to lay down other points where the limit values shall apply, it shall list these points in Annex II.

(b) The competent authority may permit the limit values to be applied at the point where the waste waters leave the treatment

plant, when waste waters containing these substances are treated outside the industrial plant at a treatment plant intended for their removal.

(3) The competent authority shall ensure that any permits or licence referred to in regulation 4 of the Pollution Caused by Certain Dangerous Substances Discharged into the Aquatic Environment Regulations, shall contain provisions at least as stringent as those set out under heading A in the Annexes to these regulations, except where the competent authority is complying with sub-regulation (3) of regulation 3 of the Pollution Caused by Certain Dangerous Substances Discharged into the Aquatic Environment Regulations, on the basis of heading B in the Annexes to these regulations. The competent authority shall review any permit or licence at least every four years.

(4) Without prejudice to their obligations arising from sub-regulations (1), (2) and (3) of this regulation and to the Pollution Caused by Certain Dangerous Substances Discharged into the Aquatic Environment Regulations, the competent authority may grant permits or licences 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 regulation 3 of the said regulations or for the prevention of distortions of competition.

(5) The competent authority shall use the reference method of analysis listed under heading C in Annex II:

Provided that the competent authority may use other limits of detection, precision and accuracy which are at least as good as those laid down under heading C in Annex II.

(6) The competent authority shall seek to ensure that the measures taken pursuant to these regulations do not result in an increase in the pollution of other media, notably soil and air, by these substances.

Monitoring the aquatic environment.

4. (1) The competent authority shall be responsible for monitoring the aquatic environment affected by discharges from industrial establishments and by other sources of significant discharges.

(2) In the case of discharges affecting the territorial waters of Malta and of other States the competent authority concerned shall cooperate with the competent authorities of Malta and other States, with a view to harmonizing monitoring procedures.

5. (1) The competent authority shall, with respect to substances to which specific reference is made in Annex II, draw up specific programmes to avoid or eliminate pollution from significant sources of these substances, including multiple and diffuse sources, other than sources of discharges subject to such other regulations in force establishing limit value rules or emission standards.

Pollution Reduction programmes.

(2) The programmes shall include the most appropriate measures and techniques for the replacement, retention or recycling of the substances referred to in sub-regulation (1).

(3) The specific programmes shall be implemented not later than five years after the date of entry into force of these regulations which relates specifically to the substance concerned.

6. Any person shall be guilty of an offence under these regulations if :

Offences under these regulations.

(a) he fails to comply with any provision of these regulations or with any order lawfully given in terms of any provision of these regulations; or

(b) he contravenes any restriction, prohibition or requirement imposed by or under these regulations; or

(c) he acts in contravention of any of the provisions of these regulations; or

(d) he conspires or attempts, or aids, or abets, any other person by whatever means, including advertising, counselling or procurement to contravene the provisions of these regulations or to fail to comply with any such provisions, including any order lawfully given in terms of any of the provision of these regulations, or to contravene any restriction, prohibition or requirement imposed by or under the said regulations.

7. Any person who commits an offence against these regulations shall, on conviction, be liable: Penalties.

(a) on a first conviction to a fine (*multa*) of not less than five hundred liri but not exceeding one thousand liri;

(b) on a second or subsequent convictions, to a fine (*multa*) of not less than one thousand liri but not exceeding two thousand liri, or to imprisonment for a term not exceeding two years, or to both such fine and imprisonment:

Provided that whenever any person is found guilty of committing an offence under these regulations by means of a vehicle, the owner of the said vehicle, where applicable, is held liable in the same manner and degree;

Provided further that the court shall order any person who has been found guilty of committing an offence against these regulations to pay for the expenses incurred by the public entities and/or other persons acting on their behalf involved in the implementation of these regulations and restitution of the environment as a result of the said offence, the revocation of the permit issued by the Police and the confiscation of the *corpus delicti*.

Applicability of the Criminal Code.

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**8.** (1) The provisions of article 23 and subarticle (1) of section 30 of the Criminal Code shall, *mutatis mutandis*, apply to proceedings, in respect of offences against these regulations, so however that the disqualification from holding or obtain a licence, permit or authority shall in no case be for less than one year.

(2) Notwithstanding the provisions of article 370 of the Criminal Code, proceedings for an offence against these regulations shall be taken before the Court of Magistrates (Malta) or the Court of Magistrates (Gozo), as the case may be, and shall be in accordance with the provisions of the Criminal Code regulating the procedure before the said courts as courts of criminal judicature.

(3) Notwithstanding the provisions of the Criminal Code, the Attorney General shall always have a right of appeal to the Court of Criminal Appeal from any judgement given by the Court of Magistrates (Malta) or the Court of Magistrates (Gozo) in respect of proceedings for any offence against these regulations.

Language of Annexes.

**9.** Annex I and II of these regulations are being published in English together with the English version of these regulations.

## ANNEX I

### GENERAL PROVISIONS

This Annex is divided into three headings which set out the general provisions applicable to all the substances concerned:

-A: limit values for emission standards,

-B: quality objectives,

-C: reference methods of measurement

The general provisions are amplified and supplemented in Annex II by a series of specific provisions applicable to individual substances.

### HEADING A

Limit values, dates set for compliance therewith and procedures for monitoring discharges

1. The limit values and the dates set for compliance therewith are set out in Annex II, under heading A, in respect of the different types of industrial plant concerned.

2. The quantities of substances discharged are expressed in terms of the quantity of substances produced, processed or used by the industrial plant during the same period or, in accordance with sub-regulation (1) of regulation 6 of the Pollution Caused by Certain Dangerous Substances Discharged into the Aquatic Environment Regulations, 2000, of another parameter characteristic of that activity

3. Limit values for industrial plants which discharge substances and which are not mentioned under heading A in Annex II shall, where necessary, be determined by the Council at a later stage. Meanwhile, the competent authority shall set, in accordance with the Pollution Caused by Certain Dangerous Substances Discharged into the Aquatic Environment Regulations, 2000, emission standards for discharges of such substances. Such standards shall take into account the best technical means available and shall not be less stringent than the most nearly comparable limit value set out under heading A in Annex II. This paragraph shall also apply where an industrial plant has activities other than those for which limit values have been set under heading A in Annex II and which are likely to be a source of discharges of substances.

4. Limit values expressed as concentrations which, in principle, shall not be exceeded are given in Annex II under heading A, in respect of the industrial plants concerned. In no instance may limit

values expressed as maximum concentrations, when they are not the only values applicable, be greater than limit values expressed by weight divided by water requirements per element characteristic of the polluting activity. However, because the concentration of these substances in effluents depends on the volume of water involved, which varies for different processes and plants, the limit values expressed in terms of the weight of the substances discharged in relation to the parameters characteristic of the activity given under heading A in Annex II, shall be complied with in all cases

5. A monitoring procedure shall be instituted to check whether the discharges of substances comply with the emission standards. This procedure shall provide for the taking and analysis of samples and for measurement of the flow of the discharge and the quantity of substances handled or, where appropriate, measurement of the parameters characteristic of the activity causing pollution as listed in Annex II, heading A. In particular, should the quantity of substances handled be impossible to determine, the monitoring procedure may be based on the quantity of substances that may be used as a function of the production capacity on which the authorization was based.

6. A sample representative of the discharge over a period of 24 hours shall be taken. The quantity of substances discharged over one month shall be calculated on the basis of the daily quantities of substances discharged. Annex II may, however, lay down for discharges of certain substances quantitative thresholds below which the competent authority may apply a simplified monitoring procedure.

7. The sampling and flow measurement provided for in paragraph 5 shall normally be effected at the points of application of the limit values provided for in sub-regulation (2) of regulation 3. However, where necessary to ensure that the measurements comply with the requirements of heading C of the Annexes, the competent authority may allow the sampling and flow measurement to be effected at another point before that at which the limit values apply, provided that:

(a) all waters discharged from the plant that may have been polluted by the substance in question are taken into account by those measurements,

(b) regular checks show that the measurements are fully representative of the quantities discharged at the points of application of the limit values or are always higher.

## **HEADING B**

Quality objectives, dates set for compliance therewith and procedure for monitoring compliance with them

1 Should the competent authority opt for the exception provided for in sub-regulation (3) of regulation 7 of the Pollution Caused by Certain Dangerous Substances Discharged into the Aquatic Environment Regulations, 2000, the emission standards which it shall establish and apply, pursuant to regulation 6 of these regulations, shall be fixed so that the appropriate quality objective or objectives from those fixed pursuant to paragraphs 2 and 3 below is or are complied with in the area affected by discharges of substances. The competent authority shall determine the area affected in each case and shall select from the quality objectives fixed pursuant to paragraphs 2 and 3 below the objective or objectives that it deems appropriate having regard to the intended

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use of the area affected, while taking account of the fact that the purpose of this Directive is to eliminate all pollution.

2. With a view to eliminating pollution, as defined in the Pollution Caused by Certain Dangerous Substances Discharged into the Aquatic Environment Regulations, 2000, and pursuant to regulation 3 of those regulations, the quality objectives and dates set for compliance therewith are set out under heading B in Annex II.

3. Unless otherwise specified under heading B in Annex II, all the concentrations mentioned as quality objectives shall refer to the arithmetic mean of the results obtained over a year.

4. Where more than one quality objective is applied to waters within one area, the quality of the water shall be sufficient to comply with each of those objectives.

5. For each authorization granted pursuant to these regulations, the competent authority shall specify the detailed rules, monitoring procedures and dates for ensuring compliance with the quality objective or objectives concerned.

6. In accordance with sub-regulation (3) of regulation 7 of the Pollution Caused by Certain Dangerous Substances Discharged into the Aquatic Environment Regulations, 2000, the competent authority shall, for each quality objective chosen and applied, report to the Commission on:

(a) the points of discharge and the means of dispersal;

(b) the area in which the quality objective is applied;

(c) the location of sampling points;

(d) the frequency of sampling;

(e) the methods of sampling and measurement;

(f) the results obtained.

7. Samples shall be taken at a point sufficiently close to the discharge point to be representative of the quality of the aquatic environment in the area affected by the discharges, and the frequency of sampling shall be sufficient to show any changes in the aquatic environment, having regard in particular to natural variations in hydrological conditions.

### HEADING C

Reference methods of measurement and limit of detection



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- 1 The definitions given in the Methods of Measurement and Frequencies of Sampling and Analysis of Surface Water Intended for the Abstraction of Drinking Water Regulations, 2000<sup>1</sup> shall apply in the context of these regulations.
2. The reference methods of measurement to be used for determining the concentration of the substances in question and the limit of detection for the environment concerned are set out under heading C in Annex II.
3. The limit of detection, the accuracy and the precision of the method are specified for each substance under heading C in Annex II.
4. Effluent flow measurements shall be carried out to an accuracy of  $\pm 20\%$ .

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<sup>1</sup> Still to transpose Council Directive 79/869/EEC of 9 October 1979 OJ N° L 271, 29, 10 1979, p. 44.

**ANNEX II**  
**SPECIFIC PROVISIONS**

1. Relating to carbon tetrachloride
2. Relating to DDT
3. Relating to pentachlorophenol
4. Relating to aldrin, dieldrin, endrin and isodrin
5. Relating to hexachlorobenzene
6. Relating to hexachlorobutadiene
7. Relating to chloroform
8. Relating to 1,2-dichloroethane (EDC)
9. Relating to trichloroethylene (TRI)
10. Relating to perchloroethylene (PER)
11. Relating to trichlorobenzene (TCB).

The numbering of the substances listed in this Annex corresponds to the list of 129 substances contained in the communication from the Commission to the Council of 22 June 1982(1).

Should substances be included in future in this Annex which are not set out in the abovementioned list, they shall be numbered in chronological order of inclusion beginning with N° 130.

**I. Specific provisions relating to carbon tetrachloride (N° 13)<sup>2</sup>**CAS N° 56-23-5<sup>3</sup>*Heading A(13): Limit values for emission standards*

Type of industrial plant <sup>(4)</sup> ( <sup>5</sup> )	Type of average value	Limit values expressed as <sup>6</sup> weight concentration	To be complied with as from	
1. Carbon tetrachloride production by perchlorination	Monthly	a) process involving washing 40g CCl <sub>4</sub> per tonne of total production capacity of CCl <sub>4</sub> and perchlorethylene	1.1.2003	
				1,5mg/l
	Daily	b) process not involving washing: 2,5g/tonne		1,5mg/l
		a) process involving washing: 80g/tonne		3mg/l
	b) process not involving washing: 5g/tonne	3mg/l		
2. Production of chloromethanes by methane chlorination (including high-pressure electrolytic chlorine generation) and from methanol	Monthly	10 g CCl <sub>4</sub> per tonne of total production capacity of chloromethanes	1.1.2003	
	Daily	20 g/tonne		3 mg/l
3. Production of chlorofluorocarbons <sup>7</sup>	Monthly	---	---	
	Daily	---	---	

<sup>2</sup> Regulation 5 applies in particular to use of carbon tetrachloride in industrial laundries<sup>3</sup> CAS (Chemical Abstract Service) number<sup>4</sup> Among the industrial establishments referred to under heading A. point 3. of Annex I. reference is made in particular to plants using carbon tetrachloride as a solvent.<sup>5</sup> A simplified monitoring procedure may be introduced if annual discharges do not exceed 30kg a year<sup>6</sup> In view of the volatility of carbon tetrachloride and in order to ensure compliance with sub-regulation (6) of regulation 3. where a process involving agitation in the open air of effluent carbon tetrachloride. is used. the competent authority shall require compliance with the limit values upstream of the plant concerned: it shall ensure that all water likely to be polluted shall taken fully into account.<sup>7</sup> It is not possible at present to adopt limit values for this sector

*Heading B (13): Quality Objectives<sup>8</sup>*

Environment	Quality objective	Unit of measurement	To be complied with as from
Estuary water	12	µg/CCl <sub>4</sub>	1.1.2003
Inland surface waters	12	µg/CCl <sub>4</sub>	1.1.2003
Internal coastal wastes other than estuary waters	12	µg/CCl <sub>4</sub>	1.1.2003
Territorial waters	12	µg/CCl <sub>4</sub>	1.1.2003

*Heading C (13): Reference method of measurement.*

1. The reference method of measurement to be used for determining the presence of carbon tetrachloride in effluents and water is gas chromatography.

A sensitive detector shall be used when concentration levels are below 0,5 mg/l and in this case the determination limit<sup>9</sup> is 0,1 µg/l. For concentration levels higher than 0,5 mg/l a determination limit of 0,1 mg/l is acceptable.

2. The accuracy and precision of the method shall be ± 50 % at a concentration which represents twice the value of the determination limit.

**II. Specific provisions relating to DDT (N° 46)<sup>(10)(11)</sup>**

CAS N° 50-29-3<sup>12</sup>

STANDSTILL: The concentration of DDT in the aquatic environment, sediments and/or molluscs and/or shellfish and/or fish shall not increase significantly with time.

*Heading A (46): Limit values for emission standards<sup>13,14</sup>*

<sup>8</sup> Without prejudice the Pollution Caused by Certain Dangerous Substances Discharged into the Aquatic Environment Regulations, 2000, where there is no evidence of any problem in meeting and continuously maintaining the quality objective set out above, a simplified monitoring procedure may be introduced.

<sup>9</sup> The "determination limit" µg of a given substance is the smallest quantity, quantitatively determinable in a sample on the basis of a given working method, which can still be distinguished.

<sup>10</sup> The sum of the isomers 1,1,1-trichloro-2,2 bis (p-chlorophenyl) ethane, 1,1,1-trichloro-2 (o-chlorophenyl) -2-(p-chlorophenyl) ethane; 1,1,1-dichloro-2,2 bis (p-chlorophenyl) ethylene; and 1,1,1-dichloro-2,2 bis (p-chlorophenyl) ethane.

<sup>11</sup> Regulation 5 applies to DDT if sources other than those mentioned in this Annex are identified.

<sup>12</sup> CAS (Chemical Abstract Service) number.

<sup>13</sup> With regard to new plants, the best technical means available shall already make it possible to lay down, for DDT, emission standards lower than 1g/tonne substances produced.

<sup>14</sup> On the basis of experience gained in implementing these regulations, the Competent Authority in good time, proposals aimed at fixing more stringent limit values.

Type of industrial plant <sup>1516</sup>	Type of average value	Limit value expressed as		To be complied with as from
		g/tonne of substances produced, handled or used	mg/l of water discharged	
Production of DDT including formulation of DDT on the same site	Monthly	8	0,7	1.1.2003
	Daily	16	1,3	1.1.2003
	Monthly	4	0,2	1.1.2006
	Daily	8	0,4	1.1.2006

*Heading B (46) Quality Objectives*

Environment	Quality objective	Unit of measurement	To be complied with as from
Estuary water	10 for the isomer para-para-DDT 25 for total DDT	µg/l	1.1.2003
Inland surface waters	10 for the isomer para-para-DDT 25 for total DDT	µg/l	1.1.2003
Internal coastal wastes other than estuary waters	10 for the isomer para-para-DDT 25 for total DDT	µg/l	1.1.2003
Territorial waters	10 for the isomer para-para-DDT 25 for total DDT	µg/l	1.1.2003

*Heading C (46): Reference method of measurement*

1. The reference method of measurement to be used for determining DDT in effluents and the aquatic environment is gas chromatography with electron capture detection after extraction by means of an appropriate solvent. The limit of determination<sup>17</sup> for total DDT is approximately 4 µg/l for the aquatic environment and 1 µg/l for effluents, depending on the number of extraneous substances present in the sample.

2. The reference method to be used for determining DDT in sediments and organisms is gas chromatography with electron capture detection after appropriate preparation of samples. The limit of determination<sup>18</sup> is 1 µg/kg.

<sup>15</sup> Among the industrial plants referred to under heading A, point 3, of Annex I, reference is made in particular to plants formulating DDT away from the production site and to the dicofol production industry.

<sup>16</sup> A simplified monitoring procedure may be introduced if annual discharges do not exceed 1kg a year.

<sup>17</sup> The "limit of determination" is the smallest quantity, quantitatively determinable in a sample on the basis of a given working method, which can still be distinguished from zero.

<sup>18</sup> *Ibid*

3. The accuracy and precision of the method shall be  $\pm 50\%$  at a concentration which represents twice the value of the limit of determination.<sup>19</sup>

### III. Specific provisions relating to pentachlorophenol (N° 102)<sup>2021</sup>

CAS N° 87-86-5<sup>22</sup>

STANDSTILL: The concentration of PCP in sediments and/or molluscs and/or shellfish and/or fish shall not increase significantly with time.

Type of industrial plant <sup>2324</sup>	Type of average value	Limit value expressed as g/tonne production/ utilization capacity		To be complied with as from
			mg/l of water discharged	
Production of sodium pentachlorophenate by hydrolysis of hexachlorobenzene	Monthly	25	1	1.1.2003
	Daily	50	2	1.1.2003

#### Heading B (102) Quality objectives

Environment	Quality objective	Unit of measurement	To be complied with as from
Estuary water	2	$\mu\text{g/l}$	1.1.2003
Inland surface waters	2	$\mu\text{g/l}$	1.1.2003
Internal coastal wastes other than estuary waters	2	$\mu\text{g/l}$	1.1.2003
Territorial waters	2	$\mu\text{g/l}$	1.1.2003

#### Heading C (102): Reference method of measurement

1. The reference method of measurement to be used for determining pentachlorophenol in effluents and the aquatic environment is high-pressure liquid chromatography or gas chromatography with electron-capture detection after extraction by means of an appropriate

<sup>19</sup> *Ibid.*

<sup>20</sup> The chemical compound 2,3,4,5,6-Pentachloro-1-hydroxybenzene and its salts.

<sup>21</sup> Regulation 5 applies to pentachlorophenol, and particularly to its use for treating wood.

<sup>22</sup> CAS (Chemical Abstract Service) number.

<sup>23</sup> Among the industrial plants referred to under heading A, point 3. of Annex I, reference is made in particular to plants producing sodium pentachlorophenate by saponification and to those producing pentachlorophenol by chlorination.

<sup>24</sup> A simplified monitoring procedure may be introduced if annual discharges do not exceed 3kg a year.

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solvent. The limit of determination<sup>25</sup> is 2 µg/l for effluents and 0,1 µg/l for the aquatic environment.

2. The reference method to be used for determining pentachlorophenol in sediments and organisms is high-pressure liquid chromatography or gas chromatography with electroncapture detection after appropriate preparation of samples. The limit of determination<sup>26</sup> is 1 µg/kg.

3. The accuracy and precision of the method shall be ± 50 % at a concentration which represents twice the value of the limit of determination.<sup>27</sup>

**IV. Specific provisions relating to:**

24	aldrin (No 1) <sup>28</sup>	CAS-No 309-00-2
25	dieldrin (No 71) <sup>29</sup>	CAS No 60-57-1
26	endrin (No 77) <sup>30</sup>	CAS-No 72-20-8
27	isodrin (No 130) <sup>31</sup>	CAS-No 465-73-6

*Heading A (1,71,77,130): Limit values for emission standards<sup>32</sup>*

Type of industrial plant <sup>33</sup>	Type of average value	Limit value expressed as		To be complied with as from
		weight discharged <sup>34</sup>	concentration in effluent µg/l of water	
Production of aldrin or dieldrin or endrin including formulation of these substances on the same site	Monthly	3 g per tonne of total production capacity (g/tonne)	2	1.1.2003
	Daily	15 g per tonne of total production capacity (g/tonne) <sup>36</sup>	10 <sup>35</sup>	1.1.2003

<sup>25</sup> The "limit of determination" is the smallest quantity, quantitatively determinable in a sample on the basis of a given working method, which can still be distinguished from zero.

<sup>26</sup> *Ibid.*

<sup>27</sup> *Ibid.*

<sup>28</sup> Aldrin is the chemical compound C<sub>12</sub>H<sub>8</sub>Cl<sub>6</sub>.

1,2,3,4,10, 10-hexachloro-1, 4, 4a, 5, 8, 8a-hexaHYDRO-1, 4-endo-5, 8-Exo-dimethanonaphtalene.

<sup>29</sup> Dieldrin is the chemical compound C<sub>12</sub>H<sub>8</sub>Cl<sub>6</sub>O.

1,2,3,4,10, 10-hexachloro-6, 7-epoxy-1, 4, 4a, 5, 6, 7, 8, 8a-octahydro-1, 4-endo-5, 8-exo-dimethanonaphtalene.

<sup>30</sup> Endrin is the chemical compound C<sub>12</sub>H<sub>8</sub>Cl<sub>6</sub>O.

1,2,3,4,10, 10-hexachloro-6, 7-epoxy-1, 4, 4a, 5, 6, 7, 8, 8a-octahydro-1, 4-endo-5, 8-endo-dimethanonaphtalene.

<sup>31</sup> Isodrin is the chemical compound C<sub>12</sub>H<sub>8</sub>Cl<sub>6</sub>.

1,2,3,4,10, 10-hexachloro-1, 4, 4a, 5, 8, 8a-hexahydro-1, 4-endo-5, 8-endo-dimethanonaphtalene.

<sup>32</sup> The limit values indicated in this heading shall apply to the total discharge of aldrin, dieldrin and endrin.

<sup>33</sup> Among the industrial plants referred to under heading A, point 3, of Annex I, reference is made in particular to plants formulating aldrin or dieldrin or endrin away from the production site.

<sup>34</sup> These figures take into account of the total amount of water passing through the plant.

<sup>35</sup> If possible, daily values should not exceed twice the monthly value.

*Heading B (1,71,77,130): Quality objectives*

Environment	Substance	Quality objectives ng/l to be complied with as from:	
		1.1.2003	1.1.2008
Inland surface waters	Aldrin	30 in total	10 in total
Esutary waters	Dieldrin	30 in total	10 in total
Internal coastal waters other than estuary waters	Endrin	5 in total	5 in total
Territorial waters	Isodrin	30 in total	5 in total

Standstill: The concentration(s) of aldrin or dieldrin or endrin or isodrin in sediments or molluscs or shellfish or fish shall not increase significantly with time.

*Heading C (1, 71, 77, 130): Reference method of measurement*

1. The reference method of measurement to be used for determining aldrin, dieldrin, endrin and/or isodrin in effluents and the aquatic environment is gas chromatography with electron-capture detection after extraction by means of an appropriate solvent. The limit of determination<sup>37</sup> for each substance is 2,5 ng/l for the aquatic environment and 400 ng/l for effluents, depending on the number of parasite substances present in the sample.

2. The reference method to be used for determining aldrin, dieldrin and/or endrin and/or isodrin in sediments and organisms is gas chromatography with electron-capture detection after appropriate preparation of samples. The limit of determination is 1 µg/kg dry weight for each separate substance.

3. The accuracy and precision of the method shall be ± 50 % at a concentration which represents twice the value of the limit of determination.

**V. Specific provisions relating to hexachlorobenzene (HCB) (No 83)**

CAS-118-74-1

*Heading A (83): Limit values for emission standards*

Standstill. There shall be no significant direct or indirect increase over time in pollution arising from discharges of HCB and affecting concentrations in sediments or molluscs or shellfish or fish.

<sup>37</sup> If possible, daily values should not exceed twice the monthly value.

<sup>38</sup> The "limit of determination" x g of a given substance is the smallest quantity, quantitatively determinable in a sample on the basis of a given working method, which can still be distinguished from zero.



Type of industrial plant <sup>38,39,40</sup>	Type of average value	Limit value expressed as		To be complied with as from
		weight	concentration	
1. HCB production and processing	Monthly	10 g HCB/tonne of HCB production capacity	1 mg/l of HCB	1.1.2003
	Daily	20 g HCB/tonne of HCB production capacity	2 mg/l of HCB	1.1.2003
2. Production of perchloro ethylene (PER) and carbon tetrachloride (CCl <sub>4</sub> ) by perchlorination	Monthly	1,5 g HCB/tonne HCB of PER + CCl <sub>4</sub> total production capacity	1,5 mg/l of HCB	1.1.2003
	Daily	3 g HCB/tonne of PER + CCl <sub>4</sub> total production capacity	3 mg/l of HCB	1.1.2003
Production of trichloroethylene or perchloroethylene by any other process <sup>41</sup>	Monthly	---	---	---
	Daily	---	---	---

*Heading B (83): Quality objectives<sup>42</sup>*

Standstill: The concentration of HCB in sediments or molluscs or shellfish or fish shall not increase significantly with time

Environment	Quality objective	Unit of measurement	To be complied with
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<sup>38</sup> A simplified monitoring procedure may be introduced if annual discharges do not exceed 1 kg a year.

<sup>39</sup> Among the industrial plants referred to under Annex I, heading A, point 3, reference is made in particular to industrial plants producing quinoxaline and tecnazene, industrial plants producing chlorine by chlor-alkali electrolysis with graphite electrodes, industrial rubber processing plants, plants manufacturing pyrotechnic products and plants producing vinylchloride.

<sup>40</sup> On the basis of experience gained in implementing these regulations, and taking into account the fact that the use of best technical means already makes it possible to apply in some cases much more stringent values than those indicated above, the Council shall decide, on the basis of proposals from the Commission, upon more stringent limit values.

<sup>41</sup> It is not possible at present to adopt limit values for this sector. The Competent authority shall adopt such limit values at a later stage. In the meantime, the competent authority shall apply national emission standards in accordance with Annex I, heading A, point 3.

<sup>42</sup> The Commission shall keep under review the possibility of setting more stringent quality objectives, taking into account measured concentrations of HCB in sediments or molluscs or shellfish or fish, and shall report to the Council, for decision as to whether any changes should be made to these regulations.

			as from
Inland surface water	0,03	µg/l	1.1.2003
Estuary waters	0,03	µg/l	1.1.2003
Internal coastal wastes other than estuary waters	0,03	µg/l	1.1.2003
Territorial waters	0,03	µg/l	1.1.2003

*Heading C (83): Reference method of measurement*

1. The reference method of measurement to be used for determining the presence of HCB in effluents and waters shall be gas chromatography with electron-capture detection after extraction by means of an appropriate solvent.

The limit of determination<sup>43</sup> for HCB shall be within the range 1 to 10 ng/l for waters and 0,5 to 1 µg/l for effluents depending on the number of extraneous substances present in the sample.

2. The reference method to be used for determining HCB in sediments and organisms is gas chromatography with electron-capture detection after appropriate preparation of the sample. The limit of determination<sup>44</sup> shall be within the range 1 to 10 µg/kg of dry matter.

3. The accuracy and precision of the method shall be  $\pm 50\%$  at a concentration which represents twice the value of the limit of determination.<sup>45</sup>

**VI. Specific provisions relating to hexachlorobutadiene (HCBD) (No 84)**

CAS-87-68-3

*Heading A (84): Limit values for emission standards*

Standstill: There shall be no significant direct or indirect increase over time in pollution arising from discharges of HCB and affecting concentrations in sediments or molluscs or shellfish or fish.

Type of industrial plant <sup>46,47,48</sup>	Type of average value	Limit value expressed as		To be complied with as from
		weight	concentration	
1. Production of	Monthly	1,5 g HCBD/tonne	1,5mg/l of HCBD	1.1.2003

<sup>43</sup> The "limit of determination" is the smallest quantity, quantitatively determinable in a sample on the basis of a given working method, which can still be distinguished from zero.

<sup>44</sup> *Ibid*

<sup>45</sup> *Ibid*

<sup>46</sup> A simplified monitoring procedure may be introduced if annual discharges do not exceed 1 kg a year.

<sup>47</sup> Among the industrial plants referred to under Annex I, heading A, point 3, reference is made in particular to industrial plants using HCBD for technical purposes.

<sup>48</sup> On the basis of experience gained in implementing these regulations, and taking into account the fact that the use of best technical means already makes it possible to apply in some cases much more stringent values than those indicated above, competent authority shall decide upon more stringent limit values.

perchloroethylene (PER) and carbon tetrachloride (CCl <sub>4</sub> ) by perchlorination	Daily	of HCB production capacity of PER + CCl <sub>4</sub>  3 g HCBD/tonne of HCB production capacity of PER + CCl <sub>4</sub>	3mg/l of HCBD	1.1.2003
2. Production of trichloroethylene or perchloroethylene by any other process <sup>49</sup>	Monthly	---	---	---
	Daily	---	---	---

*Heading B (84) : Quality objectives<sup>50</sup>*

Standstill The concentration of HCBD in sediments or molluscs or shellfish or fish shall not increase significantly with time

Environment	Quality objective	Unit of measurement	To be complied with as from
Inland surface water	0,1	µg/l	1.1.2003
Estuary waters	0,1	µg/l	1.1.2003
Internal coastal wastes other than estuary waters	0,1	µg/l	1.1.2003
Territorial waters	0,1	µg/l	1.1.2003

*Heading C (84): Reference method of measurement*

1. The reference method of measurement to be used for determining HCBD in effluents and waters shall be gas chromatography with electron-capture detection after extraction by means of an appropriate solvent.

The limit of determination<sup>51</sup> for HCBD shall be within the range 1 to 10 ng/l for waters and 0,5 to 1 µg/l for effluents, depending on the number of extraneous substances present in the sample.

2. The reference method to be used for determining HCBD in sediments and organisms is gas

<sup>49</sup> It is not possible at present to adopt limit values for this sector. The Competent Authority shall adopt such limit values at a later stage. In the meantime, the competent authority shall apply national emission standards in accordance with Annex I, heading A, point 3.

<sup>50</sup> The Competent Authority shall keep under review the possibility of setting more stringent quality objectives, taking into account measured concentrations of HCBD in sediments or molluscs or shellfish or fish.

<sup>51</sup> The "limit of determination" x g of a given substance is the smallest quantity, quantitatively determinable in a sample on the basis of a given working method, which can still be distinguished from zero.

chromatography with electron-capture detection after appropriate preparation of the sample. The limit of determination<sup>52</sup> shall be within the range 1 to 10 µg/kg of dry matter. 3. The accuracy and precision of the method shall be ± 50 % at a concentration which represents twice the value of the limit of determination.<sup>53</sup>

### VII. Specific provisions relating to chloroform (CHCl<sub>3</sub>) (No 23)<sup>54</sup>

CAS-67-66-3

#### Heading A (23): Limit values for emission standards

Type of industrial plant <sup>55,56</sup>	Limit value (monthly averages) expressed as <sup>57,58</sup> weight	concentration	To be complied with as from
1. Production of chloromethanes from methanol or from a combination of methanol and methane <sup>59</sup>	10g CHCl <sub>3</sub> /tonne of total production capacity of chloromethanes	1mg/l	1.1.2003
2. Production of chloromethanes by chlorination of methane	7,5 g CHCl <sub>3</sub> /tonne of total production capacity of chloromethanes	1mg/l	1.1.2003
3. Production of chlorofluorocarbon (CFC) <sup>60</sup>	---	---	---

<sup>52</sup> *Ibid.*

<sup>53</sup> *Ibid.*

<sup>54</sup> In the case of chloroform. The Pollution Caused by Certain Dangerous Substances Discharged into the Aquatic Environment Regulations, 2001 shall apply to discharges from industrial processes which may in themselves contribute significantly to the level of chloroform in the aqueous effluent. in particular it shall apply to those mentioned under Heading A of this Annex. Regulation 5 of these regulations applies if sources other than those listed in this Annex are identified.

<sup>55</sup> Among the industrial plants referred to under Heading A, point 3 of Annex I, special reference is made, in the case of chloroform, to plants manufacturing monomer vinyl chloride using dichloroethane pyrolysis, those producing bleached pulp and other plants using CHCl<sub>3</sub> as a solvent and plants in which cooling waters or other effluents are chlorinated. The Council shall adopt limit values for these sectors at a later stage acting on proposals from the Commission.

<sup>56</sup> A simplified monitoring procedure may be introduced if annual discharges do not exceed 30 kg a year.

<sup>57</sup> Daily average limit values are equal to twice the monthly average values.

<sup>58</sup> In view of the volatility of chloroform and in order to ensure compliance with sub-regulation (6) of regulation 3, where a process involving agitation in the open air of effluent containing chloroform is used, the competent authority shall require compliance with the limit values upstream of the plant concerned, it shall ensure that all water likely to be polluted is taken fully into account.

<sup>59</sup> I.e. by hydrochlorination of methanol, chlorination of methyl chloride.

<sup>60</sup> It is not possible at present to adopt limit values for this sector. The Competent Authority shall adopt such limit values at a later date. In the meantime, the competent authority shall apply national emission standards in accordance with Annex I, heading A, point 3.

*Heading B: Quality objectives<sup>61</sup>*

Environment	Quality objective	Unit of measurement	To be complied with as from
Inland surface water	12	µg/l	1.1.2003
Estuary waters	12	µg/l	1.1.2003
Internal coastal wastes other than estuary waters	12	µg/l	1.1.2003
Territorial waters	12	µg/l	1.1.2003

*Heading C (23): Reference method of measurement*

1. The reference method of measurement to be used for determining the presence of chloroform in effluents and the aquatic environment shall be gas chromatography.

A sensitive detector shall be used when concentration levels are below 0,5 mg/l and in this case the determination limit<sup>62</sup> is 0,1 µg/l. For concentration levels higher than 0,5 mg/l a determination limit of 0,1 mg/l is acceptable.

2. The accuracy and precision of the method shall be  $\pm 50\%$  at a concentration which represents twice the value of the determination limit.

**VIII: Specific provisions relating to 1,2 dichloroethane (EDC) (No 59)<sup>63</sup>**

CAS – No 107-06-2

*Heading A: Limit values for emission standards<sup>64</sup>*

Type of industrial plant <sup>6566</sup>	Type of average value	Limit values expressed as	To be complied
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<sup>61</sup> Without prejudice to the Pollution Caused by Certain Dangerous Substances Discharged into the Aquatic Environment Regulations, 2001, where there is no evidence of any problem in meeting and continuously maintaining the quality objective set out above, a simplified monitoring procedure may be introduced.

<sup>62</sup> The "determination limit" x g of a given substance is the smallest quantity, quantitatively determinable in a sample on the basis of a given working method, which can still be distinguished from zero.

<sup>63</sup> Regulation 5 applies in particular to EDC used as a solvent away from a production or processing site if annual discharges amount to less than 30kg/year. Such small discharges may be exempted from the requirements of the Pollution Caused by Certain Dangerous Substances Discharged into the Aquatic Environment Regulations, 2001. Notwithstanding sub-regulation (3) of regulation 5 of these regulations, the competent authority shall implement its specific programmes not later 1 January 2003.

<sup>64</sup> In view of the volatility of EDC and in order to ensure compliance with sub-regulation (6) of regulation 3, where the process used involves open-air agitation of the effluents containing EDC, the competent authority shall require compliance with the limit values upstream of the plants concerned: they shall ensure that all waters likely to be polluted are properly taken into account.

		Weight (g/tonne) <sup>67</sup>	concentration (mg/litre) <sup>68</sup>	with as from
(a) Production only of 1,2 dichloroethane (without processing or use on the same site)	Monthly	24	2	1.1.2003
		2,5	1,25	1.1.2005
	Daily	25	4	1.1.2003
		5	2,5	1.1.2005
(b) Production of 1,2dichloroethane, and processing or use at the same site, except for the use defined in (e) below <sup>69</sup> <sup>70</sup>	Monthly	26	6	1.1.2003
		27	2,5	1.1.2005
	Daily	28	12	1.1.2003
		10	5	1.1.2005
(c) Processing of 1,2-dichloroethane into substances other than vinyl chloride <sup>71</sup>	Monthly	2,5	1	1.1.2003
	Daily	5	2	1.1.2003
(d) Use of EDC for degreasing metals (away from an	Monthly	---	0,1	1.1.2003
	Daily	---	0,2	1.1.2003

<sup>65</sup> The purified EDC production capacity includes that fraction of the EDC which is not cracked in the vinyl chloride (VC) production unit associated with the EDC production unit and which is recycled to the EDC purification section of the plant. Production or processing capacity is the capacity authorized by the administration or, failing that, the highest annual quantity produced or processed over the four years prior to the granting or review of the authorization. The capacity authorized by the administration should not differ greatly from actual production.

<sup>66</sup> A simplified monitoring procedure may be introduced where annual discharges do not exceed 30 kg/year.

<sup>67</sup> These limit values relate:

- for sectors (a) and (b), to purified EDC production capacity expressed in tonnes.
- for sector (c), to EDC processing capacity expressed in tonnes.

However, in the case of sector (b), if the processing and utilization capacity is greater than the production capacity, the limit values shall be applied in relation to the global processing and utilization capacity. If there are several plants on the same site, the limit values shall apply to the plants taken together.

<sup>68</sup> Without prejudice to the provisions of heading A (4) in Annex I, these concentration limits relate to the following reference volumes:

- (a) 2 m<sup>3</sup>/tonne of purified EDC production capacity;
- (b) 2,5 m<sup>3</sup>/tonne of purified EDC production capacity;
- (c) 2,5 m<sup>3</sup>/tonne of EDC processing capacity;
- (c) 2,5 m<sup>3</sup>/tonne of EDC processing capacity.

<sup>69</sup> The limit values take account of all diffuse internal sources or of EDC used as a solvent within the industrial production site: this shall ensure a reduction in EDC discharges of more than 99 %. Nevertheless, the combination of the best available technology and the absence of any diffuse internal source enables reduction amounts greater than 99,9 % to be achieved.

The following limit value shall be complied with as 40 g EDC/tonne of purified EDC production capacity (monthly and daily averages). The limit value expressed as concentration is deduced on the basis of the volume of water discharged by the plant(s) concerned.

The production of the following substances specifically is involved here: ethylene diamine, ethylene polyamine, 1,1,1-trichloroethane, trichloroethylene and perchloroethylene.

industrial site covered by (b) <sup>72</sup>			
(e) Use of EDC in the production of ion exchangers <sup>73</sup>	Monthly Daily	--- ---	--- ---

*Heading B (59): quality objectives.*

Environment	Quality objectives (µg/litre)	To be complied with as from
Inland surface waters	10	1.1.2003
Estuary waters	10	1.1.2003
Inland coastal waters other than estuary waters	10	1.1.2003
Territorial waters	10	1.1.2003

The Commission shall compare the results of the monitoring carried out, in accordance with regulation 14 of the Pollution Caused by Certain Dangerous Substances Discharged into the Aquatic Environment Regulations, 2000, with an indicative concentration of 2,5 µg/litre.

The Commission shall, by 1998, re-examine the quality objectives on the basis of the experience acquired in the application of the present measures.

*Heading C (59): reference method of measurement .*

1. The reference method of measurement to be used for determining the presence of 1,2-dichloroethane in effluents and the water environment is gas chromatography with electron capture detection after extraction by means of an appropriate solvent or gas chromatography following isolation by means of the "purge and trap" process and trapping by using a cryogenically cooled capillary trap. The limit of determination is 10 µg/litre for effluents and 1 µg/litre for the water environment.

2. The accuracy and precision of the method shall be plus or minus 50 % at a concentration which represents twice the value of the limit of determination.

3. Member States may determine concentrations of EDC by reference to the quantity of AOX, EOX or VOX, provided that the Commission is first satisfied that these methods give equivalent results and until the general solvent Directive is adopted.

The Member States concerned shall establish regularly the relationship in concentration between EDC and the parameter used.

**IX. Specific provisions relating to trichloroethylene (TRI) (No 121)<sup>74</sup>**

<sup>72</sup> These limit values apply only to plants the annual discharges from which exceed 30 kg/year.

<sup>73</sup> It is not possible at present to adopt limit values for this sector. In the meantime, the Competent Authority shall apply national limit values in accordance with Annex I, heading A, point 3.

CAS 79.01.6

*Heading A (121): limit values for emission standards<sup>75</sup>*

Type of industrial plants <sup>76</sup>	Type of average value	Limit values expressed as weight concentration (g/tonne) <sup>77</sup> (mg/litre) <sup>78</sup>		To be complied with as from
1. Trichloroethylene (TRI) and perchloroethylene (PER) production	Monthly	10	2	1.1.2003
		2,5	0,5	1.1.2005
	Daily	20	4	1.1.2003
		5	1	1.1.2005
2. Use of TRI for degreasing metals <sup>79</sup>	Monthly		0,1	1.1.2003
	Daily		0,2	1.1.2003

*Heading B (121): quality objectives*

Environment	Quality objectives (µg/litre)	To be complied with as from
Inland surface waters	10	1.1.2003
Estuary waters	10	1.1.2003
Inland coastal waters other than estuary waters	10	1.1.2003
Territorial waters	10	1.1.2003

The Commission shall compare the results of the monitoring carried out, in accordance with regulation 14 of the Pollution Caused by Certain Dangerous Substances Discharged into the Aquatic Environment Regulations, 2000, with an indicative concentration of 2,5 mg/litre.

<sup>74</sup> Regulation 5 applies in particular to TRI used as a solvent for dry-cleaning, for the extraction of grease or odours and for degreasing metals where annual discharges amount to less than 30 kg/year. Such small discharges may be exempted from the requirements of the Pollution Caused by Certain Dangerous Substances Discharged into the Aquatic Environment Regulations, 2001.

<sup>75</sup> In view of the volatility of trichloroethylene and in order to ensure compliance with sub-regulation (6) of regulation 3, where the process used involves open-air agitation of the effluents containing trichloroethylene, the competent authority shall require compliance with the limit values upstream of the plants concerned; it shall ensure that all waters likely to be polluted are properly taken into account.

<sup>76</sup> A simplified monitoring procedure may be introduced where annual discharges do not exceed 30 kg/year.

<sup>77</sup> For sector (a), limit values for TRI discharges relate to overall TRI + PER production capacity. For existing plant using dehydrochlorination of tetrachloroethane, the capacity of production is equivalent to the capacity of TRI-PER production, the ratio of TRI-PER production taken at one third. Production or processing capacity is the capacity authorized by the administration or, failing that, the highest annual quantity produced or processed over the four years prior to the granting or review of the authorization. The capacity authorized by the administration should not differ greatly from actual production.

<sup>78</sup> Without prejudice to the provisions of heading A (4) in Annex I, TRI limit concentrations relate to the following reference values: - sector (a), 5 m<sup>3</sup>/tonne of TRI + PER production.

<sup>79</sup> These limit values apply only to industrial plants the annual discharges from which exceed 30 kg/year.



The Commission shall re-examine the quality objectives on the basis of the experience acquired in the application of the present measures.

*Heading C (121): reference method of measurement*

1. The reference method of measurement to be used for determining the presence of trichloroethylene (TRI) in effluents and the water environment shall be gas chromatography with electron capture detection after extraction by means of an appropriate solvent.

The limit of determination for TRI is 10 µg/litre for effluents and 0,1 µg/litre for the water environment

2. The accuracy and precision of the method shall be plus or minus 50 % at a concentration which represents twice the value of the limit of determination.

3. The competent authority may determine concentrations of TRI by reference to the quantity of AOX, EOX or VOX provided that the Commission is first satisfied that these methods give equivalent results and until the general solvent Directive is adopted. The competent authority shall establish regularly the relationship in concentration between TRI and the parameter used.

**X. Specific provisions relating to perchloroethylene (PER) (No 111)<sup>80</sup>**

CAS-127-18-4

*Heading A (111): limit values for emission standards<sup>81</sup>*

Type of industrial plant <sup>82</sup>	Type of average value	Limit values expressed as		To be complied with as from
		weight concentration (g/tonne) <sup>83</sup>	concentration (mg/litre) <sup>84</sup>	
(a). Trichloroethylene (TRI) and perchloroethylene (PER) production (TRE-PER processes)	Monthly	10	2	1.1.2003
		2,5	0,5	1.1.2005
	Daily	20	4	1.1.2003
		5	1	1.1.2005

<sup>80</sup> Regulation 5 applies in particular to PER used as a solvent for dry-cleaning, for the extraction of grease or odours and for degreasing metals where annual discharges amount to less than 30 kg/year.

<sup>81</sup> In view of the volatility of perchloroethylene and in order to ensure compliance with sub-regulation (6) of regulation 3, where the process used involves open-air agitation of the effluents containing perchloroethylene, the competent authority shall require compliance with the limit values upstream of the plants concerned; it shall ensure that all waters likely to be polluted are properly taken into account.

<sup>82</sup> A simplified monitoring procedure may be introduced where annual discharges do not exceed 30 kg/year.

<sup>83</sup> For sectors (a) and (b) the limit values for PER discharges relate either to overall TRI + PER production capacity or to overall TETRA + PER production capacity.

Production or processing capacity is the capacity authorized by the administration or, failing that, the highest annual quantity produced or processed over the four years prior to the granting or review of the authorization. The capacity authorized by the administration should not differ greatly from actual production.

<sup>84</sup> Without prejudice to the provisions of heading A (4) in Annex I, PER limit concentrations relate to the following reference volumes - (a), 5 m<sup>3</sup>/tonne of TRI + PER production, - (b), 2 m<sup>3</sup>/tonne of TETRA + PER production.

(b) Carbon tetrachloride and perchloroethylene production (TETRA-PER processes)	Monthly	10	5	1.1.2003
		2,5	1,25	1.1.2005
	Daily	20	10	1.1.2003
		5	2,5	1.1.2005
(c) Use of PER for degreasing metals <sup>85</sup>	Monthly	---	0,1	1.1.2003
	Daily	---	0,2	1.1.2003
(d) Chlorofluorocarbon production <sup>86</sup>	Monthly	---	---	---
	Daily	---	---	---

*Heading B (111): quality objectives*

Environment	Quality objectives (µg/litre)	To be complied with as from
Inland surface waters	10	1.1.2003
Estuary waters	10	1.1.2003
Inland coastal waters other than estuary waters	10	1.1.2003
Territorial waters	10	1.1.2003

The Commission shall compare the results of the monitoring carried out, in accordance with regulation 14 of the Pollution Caused by Certain Dangerous Substances Discharged into the Aquatic Environment Regulations, 2000, with an indicative concentration of 2,5 µg/litre.

The Commission shall re-examine the quality objectives on the basis of the experience acquired in the application of the present measures.

*Heading C (111): reference method of measurement*

1. The reference method of measurement to be used for determining the presence of perchloroethylene (PER) in effluents and the water environment shall be gas chromatography with electron capture detection after extraction by means of an appropriate solvent.

The limit of determination for PER is 10 µg/litre for effluents and 0,1 µg/litre for the water environment.

2. The accuracy and precision of the method shall be plus or minus 50 % at a concentration which represents twice the value of the limit of determination.

<sup>85</sup> These limit values apply only to industrial plants the annual discharges from which exceed 30 kg/year.

<sup>86</sup> It is not possible at present to adopt limit values for this sector. In the meantime, the competent authority shall apply national emission standards in accordance with Annex I, heading A, point 3.

3. The competent authority may determine concentrations of PER by reference to the quantity of AOX, EOX or VOX, provided that the Commission is first satisfied that these methods give equivalent results and until the general solvent Directive is adopted.

The competent authority shall establish regularly the relationship in concentration between PER and the parameter used.

### XI. Specific provisions relating to trichlorobenzene<sup>87</sup> (TCB) (117, 118)<sup>88</sup>

#### *Heading A (117, 118): limit values for emission standards*

Standstill: There shall be no significant direct or indirect increase over time in pollution arising from discharges of TCB and affecting concentrations in sediments or molluscs or shellfish or fish.

Type of industrial plant	Type of average value	Limit values expressed as weight concentration (g/tonne) <sup>89</sup> (mg/litre) <sup>90</sup>		To be complied with as from
(a). Production of TCB via dehydrochlorination of HCH and/or processing TCB	Monthly	25	2,5	1.1.2003
		10	1	1.1.2005
	Daily	50	5	1.1.2003
		20	2	1.1.2005
(b) Production and/or processing of chlorobenzenes via chlorination of benzene <sup>91</sup>	Monthly	5	0,5	1.1.2003
		0,5	0,05	1.1.2005
	Daily	10	1	1.1.2003
		1	0,1	1.1.2005

<sup>87</sup> Regulation 5 applies in particular to TCB used as a solvent or colouring support in the textile industry, or as a component of the oils used in transformers until such time as there is specific legislation on this subject.

<sup>88</sup> TCB may occur as one of the following three isomers:

- 1, 2, 3-TCB - CAS 87/61-6;
- 1, 2, 4-TCB - CAS 120-82-1 (No 118 of the EEC list);
- 1, 3, 5-TCB - CAS 180-70-3.

Technical TCB (No 117 of the EEC list) is a mixture of these three isomers, with a preponderance of 1,2,4-TCB, and may also contain small quantities of di- and tetrachlorobenzene. In any case, these provisions apply to the total TCB (the sum of the three isomers).

<sup>89</sup> The limit values for discharges of TCB (sum of the three isomers) are given.

- for sector (a): in relation to the total TCB production capacity;
- for sector (b): in relation to the total production or processing capacity for mono- and dichlorobenzenes.

Production or processing capacity is the capacity authorized by the administration or, failing that, the highest annual quantity produced or processed over the four years prior to the granting or review of the authorization. The capacity authorized by the administration should not differ greatly from actual production.

<sup>90</sup> Without prejudice to the provisions of heading A (4) in Annex I, limit concentrations relate to the following reference volumes: - sector (a): 10 m<sup>3</sup>/tonne of TCB produced or processed, - sector (b): 10 m<sup>3</sup>/tonne of mono- and dichlorobenzene produced or processed.

<sup>91</sup> For the existing plants discharging less than 50 kg/year by 1 January 2003, the limit values which are to be complied with at this date are equal to half of the limit values which are to be complied with as from 1 January 2001.

*Heading B (117, 118): quality objectives*

Standstill: There shall be no significant increase over time in the concentration of TCB in sediments or molluscs or shellfish or fish.

Environment	Quality objectives (µg/litre)	To be complied with as from
Inland surface waters	0,4	1.1.2003
Estuary waters	0,4	1.1.2003
Inland coastal waters other than estuary waters	0,4	1.1.2003
Territorial waters	0,4	1.1.2003

The Commission shall compare the results of the monitoring carried out, in accordance with regulation 14 of the Pollution Caused by Certain Dangerous Substances Discharged into the Aquatic Environment Regulations, 2000, with an indicative concentration of 0,1 µg/litre.

The Commission shall re-examine the quality objectives on the basis of the experience acquired in the application of the present measures.

*Heading C (117, 118): reference method of measurement*

1. The reference method of measurement to be used for determining the presence of trichlorobenzene (TCB) in effluents and the water environment shall be gas chromatography with electron capture detection after extraction by means of an appropriate solvent. The limit of determination for each isomer separately is 1 µg/litre for effluents and 10 ng/litre for the water environment.
2. The reference method to be used for determining TCB in sediments and organisms is gas chromatography with electron capture detection after appropriate preparation of the sample. The limit of determination for each isomer separately is 1 µg/kg of dry matter.
3. The competent authority may determine concentrations of TCB by reference to the quantity of AOX or EOX, provided that the Commission is first satisfied that these methods give equivalent results and until the general solvent Directive is adopted.

The competent authority shall establish regularly the relationship in concentration between TCB and the parameter used.

4. The accuracy and precision of the method shall be plus or minus 50 % at a concentration which represents twice the value of the limit of determination.
-