

CONVENTION ON THE PROTECTION OF THE MARINE  
ENVIRONMENT OF THE BALTIC SEA AREA

HELSINKI COMMISSION - Baltic Marine  
Environment Protection Commission

19th Meeting  
Helsinki, 23-27 March 1998

HELCOM 19/98  
15/1  
Annex 18

---

**HELCOM RECOMMENDATION 19/5**

Adopted 26 March 1998,  
having regard to Article 13, Paragraph b)  
of the Helsinki Convention

**HELCOM OBJECTIVE WITH REGARD TO HAZARDOUS SUBSTANCES**

**THE COMMISSION,**

**RECALLING** Article 3, Paragraph 1 of the Convention on the Protection of the Marine Environment of the Baltic Sea Area, 1992 (Helsinki Convention), in which the Contracting Parties undertake individually or jointly to take all appropriate legislative, administrative or other relevant measures to prevent and eliminate pollution in order to promote the ecological restoration of the Baltic Sea Area and the preservation of its ecological balance,

**RECALLING ALSO** Article 5 of the Helsinki Convention, 1992, in which the Contracting Parties undertake to prevent and eliminate pollution of the marine environment of the Baltic Sea Area caused by harmful substances from all sources,

**RECALLING ALSO** that the Baltic Sea Environmental Declaration, 1992, approved the strategic approach and principles reflected in the Baltic Sea Joint Comprehensive Environmental Action Programme,

**RECALLING ALSO** that the Kalmar Communiqué of the Council of the Baltic Sea States (CBSS), 1996, stated that the uncontrolled use and handling of chemicals, including pesticides, require special attention, and called for the development by the Helsinki Commission of an Action Programme to ensure that discharges, emissions and losses of hazardous substances will be continuously reduced, towards the target of their cessation within one generation (25 years), with the ultimate aim of achieving concentrations in the environment near background values for naturally occurring substances and close to zero concentrations for man-made synthetic substances,

**RECALLING FURTHER** that the Kalmar Communiqué of the CBSS, 1996, noted that to achieve this goal the European Union directives on chemicals, including pesticides, should be implemented as soon as possible by all countries in the Region with European Agreements according to these agreements and to pre-accession efforts, and other States in the Region will implement provisions representing a comparable standard,

**RECALLING FURTHER** that the 1988 HELCOM Ministerial Declaration called for a considerable reduction of land-based pollution,

**BEING AWARE** both of the progress made in this respect and of the difficulties encountered as well as the deficiencies in implementing the reduction goal, and

**DESIRING** to attain and implement the target set by the Kalmar Communiqué of the CBSS, 1996, with regard to hazardous substances,

**BEING MINDFUL** of the need for harmonization of principal approaches applied within HELCOM and OSPAR with regard to hazardous substances,

**DECIDES** that the Objective of the Commission with regard to hazardous substances is to prevent pollution of the Convention Area by continuously reducing discharges, emissions and losses of hazardous substances, with the ultimate aim of concentrations in the environment near background values for naturally occurring substances and close to zero for man-made synthetic substances,

**RECOMMENDS** that the Governments of the Contracting Parties continue the efforts to reduce discharges, emissions and losses of hazardous substances likely to reach the marine environment, to levels that are not harmful to man or nature as soon as possible and in a stepwise process and time-frame,

**RECOMMENDS ALSO** that the Governments of the Contracting Parties apply the Strategy to implement the HELCOM Objective with regard to hazardous substances as appears in the Attachment, and make every endeavour to move towards the target of the cessation of discharges, emissions and losses of hazardous substances, set up by the Kalmar Communiqué of the CBSS, 1996, by the year 2020,

**DECIDES** that the Strategy to implement the HELCOM Objective with regard to hazardous substances should be reviewed by the Technological Committee when needed, but not later than in the year 2004, and updated if appropriate, *inter alia*, in line with the relevant strategy applied within OSPAR,

**RECOMMENDS** that the Contracting Parties report to the Commission via the Technological Committee every three years starting in 2003.

## STRATEGY TO IMPLEMENT HELCOM OBJECTIVE WITH REGARD TO HAZARDOUS SUBSTANCES

### 1. Guiding Principles

Assessments made, and programmes and measures adopted to implement the Strategy to achieve the HELCOM Objective with regard to hazardous substances will be in accordance with the general obligations as set out in Articles 3 and 5 of the Helsinki Convention, 1992, and consequently will involve the application of:

- (i) the precautionary principle;
- (ii) the polluter pays principle;
- (iii) best available technology and best environmental practice.

In addition, substitution of the use of hazardous substances by less hazardous substances or preferably non-hazardous substances, where such alternatives are available, as a means to reach this objective.

Using the principles of the EU legislation concerning the marketing and use of dangerous substances and similar legislation in the Contracting Parties not members of the EU, emissions, discharges and losses of new hazardous substances shall be avoided except where these are justified for intermediate use by the application of the principle of substitution.

In the work to achieve this objective, the assessment of risks is a tool for setting priorities and developing action programmes.

### 2. Definitions

2.1. For the purpose of this Strategy:

- a) "Hazardous substances" are substances which fall into one of the following categories:
  - (i) substances or groups of substances that are toxic, persistent and liable to bioaccumulate;
  - (ii) other substances or groups of substances which are agreed by the Commission as requiring a similar approach as the substances referred to in (i) even if they do not meet all the criteria for toxicity, persistence and bioaccumulation, but which also give grounds for concern; this second category will include both substances which work synergistically with other substances to generate such concern and also substances which do not themselves justify inclusion but which degrade or transform into substances referred to in (i) or (ii).

The Commission will identify, and assess such other substances or groups of substances using available information and internationally accepted methods and criteria.

- b) "Substance" means a chemical element or compound in the natural state or obtained by any production process, including any additive necessary to preserve the stability of the product and any impurity deriving from the process used, but excluding any solvent which may be separated without affecting the stability of the substance or changing its composition.

- c) "Group of substances" means a number of substances :
- (i) where the substances have been shown to present a similar level of hazard, using internationally accepted criteria; and
  - (ii) which are sufficiently related both in terms of their physicochemical properties and their field of application to be jointly managed and which require common preventive action because of the comparable level of concern which they pose to the environment or man estimated by extrapolation of the assessment of an appropriate sample of the group.

2.2. The Commission will stimulate the further development of the criteria for hazardous substances namely toxicity, persistency and liability to bioaccumulate with respect to the marine environment and improve their operation as part of the work to implement this Strategy.

2.3. In addition to this, a number of other technical terms used in the Strategy and described in the Glossary (Appendix 1) will also be further developed.

### **3. Strategy of HELCOM with regard to Hazardous Substances**

Using the guiding principles, in particular the precautionary principle, the Commission will identify, prioritize and monitor and require the Contracting Parties to control (i.e. to prevent, reduce and, to the extent possible, eliminate) the emissions, discharges and losses of hazardous substances which reach, or could reach, the marine environment.

#### *3.1 Criteria for selection and priority setting of substances*

The Commission will, considering the work undertaken in other fora:

- (i) participate in the development of dynamic selection and prioritization mechanisms to select the hazardous substances to be given priority in its work, and in doing so take the specific conditions in the Baltic Sea into consideration;
- (ii) apply these selection and prioritization mechanisms to substances of concern including those substances and groups of substances set out in Appendix 2 according to the following criteria in order to produce a HELCOM List of Chemicals for Priority Action ranked in the order of priority.

The criteria used in these selection and prioritisation mechanisms may include that the substances or groups of substances:

- a) are a general threat to the aquatic environment due to their hazardous properties;
- b) show indications of risks for the marine environment or may endanger human health via consumption of food directly or indirectly from the marine environment;
- c) have been found in one or more compartments of the Convention Area;
- d) reach, or are likely to reach, the marine environment, for instance from a diversity of sources through various pathways.

The application of these criteria should both reflect the hazardous characteristics of substances and groups of substances and give priority to their actual or potential occurrence and effects in the Convention Area.

In developing the mechanisms of selecting and prioritizing substances and groups of substances, special reference should be paid to endocrine disruptors. Noting the growing international research effort especially in OSPAR, EU and OECD, HELCOM will take the results of such investigations into account. Once suitable monitoring and testing techniques are available, HELCOM will conduct surveys of the Convention Area to gauge the spatial extent of their occurrence and distribution and of any adverse effects.

HELCOM will keep the selection and prioritization mechanisms under review to ensure that it remains effective to identify all aspects of hazard and risk which should give rise to reasonable grounds of concern about substances taking account of developments in OSPAR, the Intergovernmental Forum on Chemical Safety and LRTAP.

### 3.2 Assessment Methodologies

Noting the limited experiences with the assessment of the risk of hazardous substances in the marine environment particularly as regards the consequences of low degradation rates, long-term exposure on the marine organisms and large dilution, the Commission will, considering the specific conditions in the Baltic Sea and, taking into consideration the work undertaken in other fora, address the following issues as a matter of urgency:

- a) development of relevant tools for assessing risks of hazardous substances in the marine environment;
- b) the extent to which methodologies and results of a freshwater risk assessment or any other relevant risk assessment can be translated to and used for the assessment of the risk that a substance poses to the marine environment;
- c) criteria and methods which could be used for identification and development of less hazardous, or preferable non-hazardous, substances which could be used as substitutes for hazardous substances.

HELCOM will seek co-operation with OSPAR and other relevant organizations and the EU process for improving such tools, *inter alia* drawing upon the relevant elements in the existing EU Technical Guidance in Support of Directive 93/67/EEC on Risk Assessment of New Notified Substances and Regulation EC 1488/94 on Risk Assessment for Existing Substances, and future expansions of that guidance.

The classification criteria for “Dangerous Substances”, as specified in Annex VI of EC Directive 67/548, could form a basis for the development of a general screening tool for identifying hazardous substances of concern in the marine environment and to give guidance for developing less hazardous or preferably non-hazardous substitutes. Section 5.2 of Annex VI (Criteria for classification, indication of danger, choice of risk phrases) and in particular section 5.2.1 dealing with the aquatic environment and section 4 with specific effects on human health offer a good starting point for the development of such a screening tool.

In the assessment of monitoring data concerning the presence of hazardous substances in the marine environment, HELCOM has at its disposal some, but insufficient, background/reference concentration values as presented in the Periodic Assessments of the State of the Baltic Sea. Given that it can be difficult to establish whether there are reasonable grounds for concern when there is a lack of relevant background/reference values, monitoring data or risk assessments, the Commission should initiate programmes to address these shortcomings. However, the existence of background values is not a pre-requisite for selection and prioritization of substances in question.

### 3.3 Criteria for the selection and implementation of measures

In accordance with the Precautionary Principle, effective actions are to be taken when there are reasonable grounds for concern that hazardous substances, present in the marine environment or which reach or could reach the marine environment, may bring about hazards to human health, harm living resources and marine ecosystems, damage amenities or interfere with other legitimate uses of the sea, even when there is no conclusive evidence of a causal relationship between the inputs and the effects.

The most cost effective measures should have the highest priority for implementation and should be selected by taking into account:

- a) the sustainability of the marine ecosystem;
- b) the polluter-pays principle by virtue of which the costs of pollution, prevention, control and reduction measures are to be borne by the polluter;
- c) the advantages and disadvantages of proposed measures.

Measures should be developed and/or applied in the light of the requirements laid down in the definitions of BAT and BEP in the Helsinki Convention, taking the minimization of use of hazardous substances fully into account. If in this process hazardous substances are to be substituted by other available substances, it has to be ensured that they are less hazardous or non-hazardous.

Recognizing the extended producer responsibility, the improvement of industry practices aiming at the substitution of substances, products and processes by more environmentally sound solutions, could help to achieve the objective of moving towards the cessation of discharges, emissions and losses of hazardous substances, in particular:

- a) the development and use of environmentally sound products and the development of less hazardous or preferably non-hazardous substances or more environmentally sound technologies;
- b) the principle of substitution - wherever possible, in line with other environmental goals - of products and processes causing the release of hazardous substances to the environment by ones that do not. This includes the substitution of hazardous substances by changes processes to ones not involving these substances. In doing so, the whole life cycle of the product should be considered;
- c) waste handling and waste management, as well as development and use of treatment technology that avoid losses of hazardous substances to the environment.

### 3.4 Measures and Actions

A stepwise approach will be developed, e.g. by setting intermediate targets and time frames.

With regard to hazardous substances identified by the Commission for action, such action generally includes:

- a) identifying the sources of hazardous substances and their pathways to the marine environment, using, *inter alia*, information derived from monitoring, research, specific surveys and assessment activities;

- b) establishing, with the help of an appropriate combination of monitoring and modelling, suitable methodologies for assessing risks whether these sources represent either a widespread problem or a problem restricted to regional or local environments within the maritime area;

and, as a result,

- c) the identification of relevant measures to deal with the problem, including the adoption of measures to reduce discharges, emissions and losses of hazardous substances and taking into account the sources and pathways of hazardous substances.

Considering also the programmes of work on point and diffuse sources which need to be developed by HELCOM and integrated with this Strategy, HELCOM should in particular address the following issues:

- actions at the appropriate geographical and administrative level;
- improvement of policy instruments;
- effectiveness of economic instruments;
- co-operation with all relevant authorities and target groups.

BAT/BEP Recommendations should be adopted for those sectors and activities identified for action. BEP should be established for diffuse sources of concern, including products.

HELCOM will require the Contracting Parties to continue the work on those substances for which a 50% reduction goal was set up by the Commission (HELCOM 12/18, Annex 6, and HELCOM 14/18, Paragraph 6.40), as included in list 1, Appendix 2.

The Commission will initiate a process to develop a comprehensive information basis and reporting system on the production and use of selected hazardous substances under the jurisdiction of the Contracting Parties.

Notwithstanding the process outlined in sections 3.1 and 3.2, the Commission will continue to work on those substances which have already been selected by HELCOM for a phase out (Helsinki Convention, 1992, Annex I, Parts 2 and 3), and include in its work those hazardous substances or groups of substances which are listed by UN-ECE for priority action under the draft protocol (POPs and HMs) to the Convention of Long-Range Transboundary Air Pollution and selected substances which are in OSPAR Action Programme and which were agreed as priority substances at the Third and Fourth North Sea Conferences. The selected substances for immediate priority action are listed in Appendix 3.

As a starting point, the appropriate HELCOM Committees will:

- generate information on the import, production, stockpiling, use and export of substances as selected in Appendix 3, including contaminants;
- generate information on discharges, emissions and losses of those selected substances which do not arise from production or use of trading products;
- establish an appropriate reporting system taking into account the experiences made during this process;
- assess the obtained information in order to identify priorities for action.

The initial selection of substances is made on an interim basis and will be, as soon as possible but not later than the year 2000, updated with those substances selected for priority action in accordance with section 3.1.

### 3.5 Co-operation and Dialogue

The Commission and Contracting Parties, individually or jointly, will endeavour to maintain and develop further a constructive dialogue on the reduction of hazardous substances with all parties concerned, including producers, manufacturers, user groups, authorities and environmental NGOs to ensure that all relevant information is available for the work of the Commission in connection with this Strategy.

The Commission and the Contracting Parties will invite and encourage industry to co-operate in fulfilling the Objective of HELCOM with regard to hazardous substances, *inter alia* :

- a) to incorporate the Strategy in the implementation of BAT and/or BEP;
- b) to provide reliable data on production volumes, use patterns, emission scenarios, exposure concentrations and properties of substances.

In order to achieve internationally harmonized approaches and to avoid duplication of work on hazardous substances, the Commission will ensure that measures and information which have already been agreed or which are being negotiated by Contracting Parties in other fora are considered by the Commission as appropriate in the development of measures and initiative to control hazardous substances within HELCOM. Contracting Parties shall bring these measures and this information to the attention of the Commission. When significant common ground has been identified in measures and initiatives proposed by HELCOM and those other fora, the Commission will initiate appropriate discussions to determine the level of co-operation and liaison necessary.

## 4. Implementation

The Commission will initiate and promote implementation-programmes to fulfil the Objective's goal of the year 2020, especially for the countries in transition, within its Committees and PITF and facilitate an adequate transfer of technology, management systems, public administration systems and information.

### 4.1 Work plans of HELCOM subsidiary bodies

The Strategy on hazardous substances will be included and further developed in the work plans of the Technological Committee (TC), the Environment Committee (EC), the Maritime Committee (MC) and the Programme Implementation Task Force (PITF) which will establish priorities, assign tasks and set appropriate deadlines and targets.

The appropriate HELCOM bodies will consider the following:

- programmes within PITF and TC to provide suitable information on, *inter alia*, the selected hazardous substances exposed to the environment, e.g. pollution load data, surveys on the use and flow of hazardous substances in the catchment area (mass balance analysis) for point and diffuse sources;
- programmes within MC to provide suitable information on hazardous antifouling compounds and less harmful substitutes or alternative actions to avoid the use of antifouling;



- programmes within EC to provide suitable monitoring data, e.g. surveys on those selected hazardous substances and their effects in the marine environment;
- the revision of monitored parameters to cohere with the requirements of this Strategy.

The Commission will review the TC, EC and MC work plans on a regular basis.

#### *4.2 Progress Report*

The Technological Committee will develop appropriate procedures by the end of 1998 to enable a review of progress achieved through this Strategy to be prepared every three years. Based upon this review the Commission will, if necessary, revise the Strategy. Such a review should take into account:

- a) assessment of the implementation and effectiveness of measures;
- b) the experiences gained with this Strategy;
- c) the findings of the quality assessment reports of the Convention Area;
- d) progress achieved with the development and use of a selection scheme for hazardous substances;
- e) any further new information.

**GLOSSARY TO THE STRATEGY TO IMPLEMENT HELCOM OBJECTIVE  
WITH REGARD TO HAZARDOUS SUBSTANCES**

The following working definitions are proposed for the purpose of this Strategy and will be reviewed from time to time :

1. "Toxicity" is defined as the capacity of a substance to cause toxic effects to organisms or their progeny such as:
  - reduction in survival, growth and reproduction;
  - carcinogenicity, mutagenicity or teratogenicity;
  - adverse effects as result of endocrine disruption.

Depending on the exposure time and life cycle of the target organism, toxicity can be classified as:

- acute toxicity: lethal and/or sublethal toxicity resulting from intermittent or continuous exposure to a substance or mixture of substances for a period substantially shorter than the life cycle of the organism in question (e.g. 96 h LC<sub>50</sub> for a fish with a life cycle measured in months or years);
- subchronic toxicity: sublethal (and possibly also lethal) toxicity resulting from intermittent or continuous exposure to a substance or mixture of substances for a period which is a substantial proportion of the life cycle of the organism in question (e.g. 21 day reproductive NOEC for a crustacean with a life cycle measured in weeks or months);
- chronic toxicity: sublethal toxicity resulting from intermittent or continuous exposure to a substance or mixture of substances for a period not less than the life cycle of the organism in question (e.g. lifecycle reproductive NOEC for a fish which includes measurements of the F1 generation).

For reasons of precaution, particularly persistent substances that are found in or are likely to reach the marine environment and that due to their intrinsic properties are likely to cause chronic or subchronic toxic effects should be treated as if belonging into that category until evidence to the contrary has been established.

2. A substance is defined to be "persistent" if its conversion or the conversion of its degradation products is slow enough to permit long-term occurrence and widespread distribution in the marine environment.
3. "Bioaccumulation" is defined as the enrichment of a substance in an organism and includes "bioconcentration" from environmental concentrations and additional uptake via the food chain; bioaccumulation includes all routes, i.e. via the air, water, soil and food.
4. "Bioconcentration" is defined as the net result of uptake, distribution and elimination of a substance in an organism.
5. "Risk assessment" is the determination of the relationship between the predicted exposure and adverse effects in four major steps: hazard identification, dose-response assessment, exposure assessment and risk characterization.

6. "Exposure assessment" is the determination of the emissions, pathways and rates of movement of a substance and its transformation or degradation in order to estimate the concentration/doses to which human populations or environmental compartments are or may be exposed.
7. "Hazard identification" is the identification of the adverse effects which a substance has an inherent capacity to cause.
8. "Dose (concentration) - response (effect) assessment" is the estimation of the relationship between dose, or level of exposure to a substance, and the incidence and severity of an effect.
9. "Risk characterization" is the estimation of the incidence and severity of the adverse effects likely to occur in a human population or environmental compartment due to actual or predicted exposure to a substance, and may include "risk estimation", i.e., the quantification of that likelihood.
10. In accordance with the OECD Weybridge Workshop, an "endocrine disrupter" is an exogenous substance that causes adverse health effects in an intact organism, or its progeny, consequent to changes in endocrine function. In applying this definition to the marine environment it will be required to consider substances that are likely to affect directly or indirectly the hormonal regulation in the whole organisms by the mimicking of hormones or by affecting enzyme systems responsible for hormone equilibria.
11. "Losses" are transfers of substances, other than as discharges, emissions or the result of accidents, directly or indirectly to the marine environment, which have:
  - leached, eroded or become detached from a manufactured product, waste or structure;
  - leached or run off from land on which it has been spread or deposited;
  - leaked or escaped from container in which it has been kept.

## **LIST OF POTENTIAL SUBSTANCES OF CONCERN TO BE CONSIDERED BY HELCOM**

List of substances which are candidates for selection, assessment and prioritisation according to section 3.1 of the Strategy to Implement HELCOM Objective with Regard to Hazardous Substances

### **Key to Lists 1-9**

- 1: List of substances identified as of concern by HELCOM (HELCOM 12/18, Annex 6, and HELCOM 14/18, Paragraph 6.40, Helsinki Convention 1992, Annex I, Part 2, Banned substances, and Part 3, Pesticides)
- 2: List of Substances for international Action within the UNECE LRTAP POP- and Heavy Metal-protocols (under negotiation)
- 3: List of Substances for international Action, including a global legally binding instrument (UNEP POP-Programme)
- 4: List of substances identified as of concern by OSPAR in the period 1991-1996, which are part of the OSPAR Work-Programme
- 5: List of priority substances agreed by the Third North Sea Conference (Annex 1A, The Hague Declaration)
- 6: Reference List of Substances agreed by the Third and Fourth North Sea Conference (e.g. Annex 1 D to The Hague Declaration), for further selection of priority substances
- 7: Pesticides referred to in paragraph 27 of the Esbjerg Declaration (Annex 2, Appendix 1 of the Esbjerg Declaration), for priority review within the framework of EU Council Directive 91/414
- 8: OSPAR List of Potential Endocrine Disruptors - Part A, which have been reported in the scientific literature to induce changes to the endocrine system of varying severity in the course of in vivo tests
- 9: OSPAR List of Potential Endocrine Disruptors - Part B, which have been reported in the scientific literature to induce changes to the endocrine system of varying severity in the course of in vitro tests

Casn	Name	1	2	3	4	5	6	7	8	9
	<b>Alkanes</b>									
79345	1,1,2,2-Tetrachloroethane						X			
79005	1,1,2-Trichloroethane						X			
76131	1,1,2-Trichlorotrifluoroethane						X			
75343	1,1-Dichloroethane						X			
78875	1,2-Dichloropropane						X	X		
2163000	1,6-Dichlorohexane						X			
544105	1-Chlorohexane						X			
56235	Carbontetrachloride	X				X				
<b>85535848</b>	<b>Chlorinated paraffins, short chained</b>		X		X					
n.a.	Chlorinated paraffins, medium and long chained				X					
<b>67663</b>	<b>Chloroform</b>	X				X				
110827	Cyclohexane						X			
107062	Dichloroethane 1,2-	X				X				
75092	Dichloromethane (methylenechloride)						X			
101815	Diphenylmethane						X			
67721	Hexachloroethane						X			
108872	Methylcyclohexane						X			
111659	Octane						X			
76017	Pentachloroethane						X			
109660	Pentane						X			
558134	Tetabromomethane						X			
71556	Trichloroethane, 1,1,1-	X				X				
	<b>Alkenes (Olefins)</b>									
75354	1,1-Dichloroethene						X			
540590	1,2-Dichloroethene						X			
542756	1,3-Dichloropropene						X	X		
78886	2,3-Dichloropropene						X			
126998	2-Chloro-1,3-butadiene (chloroprene)						X			
107051	3-Chloropropene (allylchloride)						X			
75014	Chloroethene (vinylchloride)						X			
n.a.	Halogenated solvents				X					
127184	Tetrachloroethylene	X				X				
79016	Trichloroethylene	X				X				
	<b>Anilines</b>									
14861177	2,4-Dichlorophenoxy-4-aniline						X			
95512	2-Chloroaniline						X			
95761	3,4-Dichloroaniline								X	
108429	3-Chloroaniline						X			
106478	4-Aniline						X			
121879	4-Chloro-2-nitroaniline						X			
27134276	Dichloroaniline (all isomers)						X			
	<b>Benzenes</b>									
95943	1,2,4,5-Tetrachlorobenzene						X			
95501	1,2-Dichlorobenzene						X			
541731	1,3-Dichlorobenzene						X			
99650	1,3-Dinitrobenzene						X			

106467	1,4-Dichlorobenzene						X		
97007	1-Chloro-2,4-dinitrobenzene						X		
1544689	1-Fluoro-4-isocyanatobenzene						X		
89214	2-Chloronitrobenzene						X		
88733	3-Chloronitrobenzene						X		
121733	4-Chloronitrobenzene						X		
1817476	4-Nitro-1-isopropylbenzene						X		
71432	Benzene						X		
108907	Chlorobenzene						X		
25567673	Chlorodinitrobenzene (mixed isomers)						X		
27900750	Dichloronitrobenzene (all isomers)						X		
100414	Ethylbenzene						X		
98828	Isopropylbenzene (cumene)						X		
98953	Nitrobenzene						X		
608935	Pentachlorobenzene						X		
12002481	Trichlorobenzene	X			X	X			
	<b>Hormones</b>								
57636	17-Ethynylestradiol								X
56531	Diethylstilbestrol								X
72333	Mestranol								X
50282	Oestradiol								X
53167	Oestron								X
	<b>Inorganic compounds</b>								
7681529	Hypochlorite, sodium-				X				
	<b>Metallic compounds</b>								
7440382	Arsenic	X				X			
<b>7440439</b>	<b>Cadmium</b>	<b>X</b>	<b>X</b>			<b>X</b>			
7440473	Chromium	X				X			
7440508	Copper	X			X	X			
<b>7439921</b>	<b>Lead</b>	<b>X</b>	<b>X</b>			<b>X</b>			
<b>7439976</b>	<b>Mercury</b>	<b>X</b>	<b>X</b>		<b>X</b>	<b>X</b>			
7440020	Nickel	X				X			
<b>7782492</b>	<b>Selenium</b>	<b>X</b>							
7440666	Zinc	X			X	X			
	<b>Organic nitrogen compounds</b>								
33855479	1,2-Ethanediamine						X		
108770	2,4,6-Trichloro-1,3,5-triazin (cyanuric chloride)						X		
92875	4,4'-diaminodiphenyl (benzidine)						X		
14678058	5-Isoxazolamine						X		
461585	Cyanoguanidine						X		
108918	Cyclohexylamine						X		
1331471	Dichlorodiaminodiphenyl (dichlorobenzidine) (all isomers)						X		
109897	Diethylamine						X		
124403	Dimethylamine						X		
122394	N,N-Diphenylamine						X		
	<b>Organic oxygen compounds</b>								
96231	1,3-Dichloro-2-propanol						X		

75990	2,2-Dichloropropionic acid						X		
107073	2-Chloroethanol						X		
104767	2-Ethyl-1-hexanol						X		
3452979	3,5,5-Trimethyl-1-hexanol						X		
108601	bis(2-Chloroisopropyl)ether						X		
85687	Butylbenzylphthalate						X	X	
79118	Chloroacetic acid						X		
112301	Decanol						X		
117840	Di-n-octylphthalate						X		
<b>84742</b>	<b>Dibutylphthalate</b>						<b>X</b>	<b>X</b>	
<b>117817</b>	<b>Diethylhexylphthalate</b>								<b>X</b>
84662	Diethylphthalate						X		
102090	Diphenoxymethanal (carbonic acid, diphenyl ester)						X		
101848	Diphenylether						X		
106898	Epichlorhydrine						X		
25339177	Isodecanol						X		
27258942	Isononanol						X		
90193763	o-Phthalic acid						X		
111875	Octanol						X		
n.a.	Phthalates, other								X
76039	Trichloroacetic acid						X		
302170	Trichloroethanal (chloral)						X		
	<b>Organic phosphorous compounds</b>								
26444495	Cresyldiphenylphosphate						X		
126727	Tris(2,3-dibromo-1-propyl)phosphate						X		
126738	Tributylphosphate						X		
1330785	Tricresylphosphate						X		
78422	Trioctylphosphate						X		
115866	Triphenylphosphate						X		
25155231	Trixylenylphosphate						X		
	<b>Organic compounds</b>								
107642	Dimethyldistearylammoniumchloride				X				
61789808	Dimethylbis(hydrogenated tallowalkyl)ammoniumchloride				X				
68783788	Dimethyl ditallowalkylammoniumchloride				X				
n.a.	Organohalogens (toxic, persistent and liable to bioaccumulate)				X				
n.a.	Halogenated organic substances (measured as AOX)	X							
n.a.	Substances suspected to have endocrine or hormone-like effects				X				
	<b>Organometallic compounds</b>								
77587	Dibutylbis(oxylauroyl)tin						X		
818086	Dibutyltinoxide						X		
712481	Diphenylchloro arsine						X		
598141	Ethyldichloro arsine						X		
1461252	Tetrabutyltin						X		

13463393	Tetracarbonyl nickel						X		
78002	Tetraethyl lead						X		
	<b>Pesticides/Biocides</b>								
<b>106934</b>	<b>1,2-Dibromoethane</b>	<b>X</b>							
94757	2,4-Dichlorophenoxyacetic acid (2,4-D)						X		
120365	2,4-Dichlorophenoxypropanoic acid (dichlorprop)						X		
1194656	2,6-Dichlorobenzonitrile						X		
<b>93765</b>	<b>2,4,5-T</b>	<b>X</b>							
94746	2-Methyl-4-chlorophenoxyacetic acid (MCPA)						X		
93652	2-Methyl-4-chlorophenoxypropanoic acid (MCPA)						X		
<b>107131</b>	<b>Acrylonitrile</b>	<b>X</b>							
116063	Aldicarb						X		
<b>309002</b>	<b>Aldrin</b>	<b>X</b>	<b>X</b>	<b>X</b>					
61825	Amitrol						X		
<b>140578</b>	<b>Aramite</b>	<b>X</b>							
1912249	Atrazine	X				X			X
2642719	Azinphos-ethyl	X				X			
86500	Azinphos-methyl	X				X			
25057890	Bentazone						X		
<b>319857</b>	<b>beta-HCH</b>	<b>X</b>	<b>X</b>						<b>X</b>
86748	Carbazole						X		
1563662	Carbofuran						X		
<b>57749</b>	<b>Chlordane</b>	<b>X</b>	<b>X</b>	<b>X</b>					<b>X</b>
<b>143500</b>	<b>Chlordecone (Kepone)</b>	<b>X</b>	<b>X</b>						<b>X</b>
<b>6164983</b>	<b>Chlordimeform</b>	<b>X</b>							
76062	Chlorpicrin	X							
56724	Cumafos						X		
21725462	Cyanazine							X	
<b>50293</b>	<b>DDT</b>	<b>X</b>	<b>X</b>	<b>X</b>		<b>X</b>			<b>X</b>
57749	Demeton						X		
n.a.	Dibutyltin salt (all)						X	X	
62737	Dichlorvos	X				X		X	
115322	Dicofol						X		X
<b>60571</b>	<b>Dieldrin</b>	<b>X</b>	<b>X</b>	<b>X</b>		<b>X</b>			<b>X</b>
13464807	Dihydrazinesulphate						X		
60515	Dimethoate						X	X	
88857	Dinoseb						X		
298044	Disulfoton						X	X	
148185	Dithiocarbamates						X		
330541	Diuron							X	
<b>n.a.</b>	<b>Drins</b>		<b>X</b>	<b>X</b>		<b>X</b>			
115297	Endosulfan	X				X			X
<b>72208</b>	<b>Endrin</b>	<b>X</b>	<b>X</b>	<b>X</b>					
122145	Fenitrothion	X				X			
55389	Fenthion	X				X			
<b>7664393</b>	<b>Fluoroacetic acid and derivatives</b>	<b>X</b>							
14816183	Foxim						X		



<b>608731</b>	<b>HCH</b>	X	X			X				
<b>76448</b>	<b>Heptachlor</b>	X	X	X						
<b>118741</b>	<b>Hexachlorobenzene</b>	X	X	X		X				X
87683	Hexachlorobutadiene	X				X				
51235042	Hexazinone							X		
34123596	Isoproturon							X		
<b>297789</b>	<b>Isobenzane</b>	X								
<b>465736</b>	<b>Isodrin</b>	X								
<b>4234791</b>	<b>Kelevan</b>	X								
115322	Kelthane									X
<b>143500</b>	<b>Kepon (Chlordecone)</b>	X	X							X
<b>58899</b>	<b>Lindane</b>	X	X		X					X
330552	Linuron						X			
121755	Malathion	X				X				
1929880	Metabenzthiazuron							X		
67129082	Metazachlor							X		
51218452	Methalachlor							X		
10265926	Methamidophos						X			
72435	Methoxychlor									X
19937596	Metoxuron							X		
7786347	Mevinphos						X	X		
<b>2385855</b>	<b>Mirex</b>		X	X						
1746812	Monolinuron						X			
<b>4636833</b>	<b>Morfamquat</b>	X								
<b>1836755</b>	<b>Nitrophen</b>	X								
1113026	Omethoate						X			
301122	Oxydemeton-methyl						X			
2074502	Paraquat						X			
56382	Parathion	X				X		X		
298000	Parathion-methyl	X				X				
<b>87865</b>	<b>Pentachlorophenol</b>	X	X			X				
n.a.	Pesticides (agriculture, horticulture and forestry)				X					
1918167	Propachlor							X		
709988	Propanil						X			
1698608	Pyrazone (chloridazon)						X	X		
n.a.	Pyrethroids, synthetic									X
<b>82688</b>	<b>Quintozene</b>	X								
122349	Simazine	X				X				
148798	Thiabendazole							X		
<b>8001352</b>	<b>Toxaphene</b>	X	X	X						X
n.a.	Triazines (e.g. atrazine)									X
24017478	Triazophos						X			
n.a.	Tributyltin compounds	X				X		X	X	
52686	Trichlorfon						X			
1582098	Trifluralin	X				X				
n.a.	Triphenyltin compounds	X				X		X		
50471448	Vinclozolin							X		
	<b>Phenols</b>									

140669	1,1,3,3-Tetramethyl-4-butylphenol						X		
576249	2,3-Dichlorophenol						X		
120832	2,4-Dichlorophenol						X		
95852	2-Amino-4-chlorophenol						X		
120321	2-Benzyl-4-chlorophenol						X		
95578	2-Chlorophenol						X		
97541	2-Methoxy-4-propenylphenol						X		
95487	2-Methylphenol						X		
108430	3-Chlorophenol						X		
80057	4,4'-Methylethylidenebisphenol						X	X	
59507	4-Chloro-3-methylphenol						X		
106489	4-Chlorophenol						X		
25013165	Butylhydroxyanisol								X
98544	Butylphenol								X
1335859	Dinitro-2-methylphenol (dinitro-o-cresol, DNOC)						X		
27193868	Dodecylphenol (mixed isomers)						X		
<b>104405</b>	<b>Nonylphenol, 4-</b>			X			X	X	
<b>9016459</b>	<b>Nonylphenoethoxylate</b>	X		X					X
n.a.	Nonylphenoethoxylate carboxylic acid								X
140669	Octylphenol			X				X	
9036195	Octylphenoethoxylate								
95954	Trichlorophenol (all isomers)						X		
	<b>Polycyclic halogenated aromatic compounds</b>								
n.a.	Brominated flame retardants			X					X
<b>36355018</b>	<b>Hexabromobiphenyl</b>		X						
<b>1336363</b>	<b>PCB</b>	X	X	X	X				X
n.a.	PCB hydroxy metabolites								X
<b>617883388</b>	<b>PCT (mixtures)</b>	X							X
1335871	Polyhalogenated naphthalenes (hexachloro-)			X					
<b>1746016</b>	<b>TCDD, PCDD, PCDF</b>	X	X	X	X				X
	<b>Polycyclic aromatic hydrocarbons</b>								
3389717	1,2,3,4,7,7-Hexachloronorborene						X		
131099	2-Chloroantraquinone						X		
83329	Acenaphthene						X		
120127	Anthracene						X		
92524	Biphenyl						X		
25586430	Chloronaphthalene (all isomers)						X		
206440	Fluoranthene						X		
1335871	Hexachloronaphthalene						X		
91203	Naphthalene						X		
<b>50328</b>	<b>PAH</b>	X	X	X					X
85018	Phenanthrene						X		
	<b>Products</b>								
8012951	Mineral oil						X		
	<b>Toluenes and xylenes</b>								
95476	1,2-xylene (o-xylene)	X					X		
108383	1,3-xylene (m-xylene)	X					X		
106423	1,4-xylene (p-xylene)	X					X		

602017	2,3-Dinitrotoluene						X		
121142	2,4-Dinitrotoluene						X		
95498	2-Chlorotoluene						X		
108418	3-Chlorotoluene						X		
106434	4-Chlorotoluene						X		
98511	4-tert-Butyltoluene						X		
384225	alpha,alpha,alpha-Trifluoro-2- nitrotoluene						X		
98464	alpha,alpha,alpha-Trifluoro-3- nitrotoluene						X		
402540	alpha,alpha,alpha-Trifluoro-3-nitro-4-chlorotoluene						X		
402540	alpha,alpha,alpha-Trifluoro-4- nitrotoluene						X		
98873	alpha,alpha-Dichlorotoluene (benzylidenechloride)						X		
100447	alpha-Chlorotoluene (benzylchloride)						X		
1715408	Bromocylene				X				
n.a.	Chloroaminotoluene (chlorotoluidine, all isomers)						X		
25567684	Chloronitrotoluene (all isomers)						X		
25550145	Ethyltoluene (mixed isomers)						X		
<b>81152</b>	<b>Musk xylene</b>				X				
108883	Toluene						X		

SELECTED SUBSTANCES FOR IMMEDIATE PRIORITY ACTION

Casn	Name
	<b>Alkanes</b>
85535848	Chlorinated paraffins, short chained
67663	Chloroform
	<b>Phenols</b>
9016459	Nonylphenoethoxylate and the degradation/transformation products
104405	Nonylphenol, 4-
	<b>Xylenes</b>
81152	Musk xylene
	<b>Organic oxygen compounds</b>
117817	Diethylhexylphthalate
84742	Dibutylphthalate
	<b>Metallic compounds</b>
7440439	Cadmium
7439921	Lead
7439976	Mercury
7782492	Selenium
	<b>Pesticides/Biocides</b>
106934	1,2-Dibromoethane
93765	2,4,5-T
107131	Acrylonitrile
309002	Aldrin
140578	Aramite
319857	beta-HCH
57749	Chlordane
143500	Chlordecone (Kepone)
6164983	Chlordimeform
50293	DDT
60571	Dieldrin
n.a.	Drins
72208	Endrin
7664393	Fluoroacetic acid and derivatives
608731	HCH
76448	Heptachlor
118741	Hexachlorobenzene
297789	Isobenzane
465736	Isodrin
4234791	Kelevan
143500	Kepone (Chlordecone)

58899	Lindane
2385855	Mirex
4636833	Morfamquat
1836755	Nitrophen
87865	Pentachlorophenol
82688	Quintozene
8001352	Toxaphene
n.a.	Organotin Compounds

***Polycyclic halogenated aromatic compounds***

36355018	Hexabromobiphenyl
1336363	PCB
617883388	PCT (mixtures)
1746016	TCDD, PCDD, PCDF

***Polycyclic aromatic hydrocarbons***

50328	PAH
-------	-----

---

These substances are highlighted in Appendix 2

---