

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

HELSINKI COMMISSION - Baltic Marine
Environment Protection Commission

HELCOM EXTRA 99
Minutes of the Meeting

Extraordinary Meeting
Helsinki, 6-7 September 1999

Attachment 5

HELCOM RECOMMENDATION 20E/6 *)

Adopted 7 September 1999
having regard to Article 13, Paragraph b)
of the Helsinki Convention 1974

**REQUIREMENTS FOR DISCHARGING OF WASTE WATER FROM THE
CHEMICAL INDUSTRY **)**

THE COMMISSION,

RECALLING Paragraph 1 of Article 6 of the Convention on the Protection of the Marine Environment of the Baltic Sea Area, 1992 (Helsinki Convention), in which the Contracting Parties undertake to prevent and eliminate pollution of the Baltic Sea Area from land -based sources by using , inter alia, Best Environmental Practice for all sources and Best Available Technology for point sources,

HAVING REGARD also to Article 3 of the Helsinki Convention, in which the Contracting Parties shall individually or jointly take all appropriate legislative, administrative or other relevant measures to prevent and abate pollution in order to promote the ecological restoration of the Baltic Sea Area,

RECALLING ALSO Annex I, Part 1 of the Convention, according to which the Contracting Parties shall, in their preventive measures, give priority to the groups of substances listed in Annex I, Part 1 which are generally recognised as harmful substances,

RECALLING FURTHER the Ministerial Communiqué 1998, calling to implement the strategy on the cessation of discharges, emissions and losses of hazardous substances by the year 2020,

RECALLING FURTHER that the Ministerial Declaration 1988, of the ninth meeting of the Helsinki Commission calls for a considerable reduction of land-based pollution,

RECOGNIZING that the chemical industry is responsible for an important part of the discharges of hazardous substances into the Baltic Sea,

DESIRING to limit the discharges from this industry in line with best available technology,

*) Superseding HELCOM Recommendation 16/5

***) Industrial plants according to the Standard Classification of Chemical Industry (see Appendix 1)

DESIRING ALSO to implement HELCOM Recommendation 9/8 concerning measures aimed at the reduction of discharges from industry,

RECOMMENDS to the Governments of the Contracting Parties that they apply to chemical industry the precautionary principle, the principle of the Best Available Technology and the substitution principle, by which is meant substitution of the use of hazardous substances by less hazardous substances or preferably non-hazardous substances where such alternatives are available,

RECOMMENDS to the Governments of the Contracting Parties that they apply the following requirements to chemical industries producing waste water which is discharged into waters or municipal sewerage systems:

1. General requirements

Waste water should only be discharged if the waste water volume and pollutant load are minimised by the use of best available technologies, inter alia:

- separation of process water from cooling water;
- separate pre-treatment of waste water containing substances which due to their specific properties should preferably be removed prior to the final treatment;
- combined treatment of different waste waters containing hazardous substances only if an adequate reduction of the pollutant load is achieved compared to the purification of every single waste water stream;
- use of water-saving techniques in washing and cleaning processes such as water circulation and counter-current washing;
- multiple use of process water;
- indirect cooling systems and condensation of vapours and organic liquids instead of direct cooling systems;
- processes for generating vacuum, which do not produce waste water, should be used if there is the possibility that hazardous substances get into the water;
- processing of mother-liquors, e.g. for recovery of materials or energy;
- substitution of the use of hazardous substances by less hazardous substances or preferably non-hazardous substances where such alternatives are available,
- adequate equipment for monitoring of effluent parameters should be used, e.g. flow, pH and oxygen concentration.

2. Requirements to the effluent of the plant

The mixing or diluting of different waste waters (i.e. mixing of treated process water with cooling water) for the purpose of compliance with the limit values established for the effluent should not be allowed. This means that all limit values mentioned below refer to the process waste water.

The total load of the parameters COD or TOC, nutrients, AOX and heavy metals should be minimised first according to the main principles mentioned above and to measures specified in Paragraph 1 (General requirements).

The below mentioned requirements are based on 2- to 24-hour values.

2.1 Chemical Oxygen Demand (COD) or Total Organic Carbon (TOC)

For plants discharging into water bodies the reduction of COD- or TOC-load in pre- and final waste water treatment facilities should be at least 80%. This requirement should also be regarded as fulfilled when BAT has been applied and the concentration in the effluent of the plant of COD is lower than 250 mg/l or the concentration of TOC is lower than 80 mg/l.

2.2 Phosphorous and Nitrogen

For plants discharging into water bodies the concentration of total-Phosphorus in effluent should not exceed 2 mg/l and for total-Nitrogen^{***}) should not exceed 50 mg/l. The requirement for Nitrogen is fulfilled if the concentration does not exceed 75 mg/l and the reduction rate is at least 75%.

2.3 Adsorbable Organic Halogen (AOX)

For plants discharging into water bodies or connected to municipal sewerage system the concentration of AOX should not exceed 1 mg/l. This requirement should also be regarded as fulfilled if the reduction of the AOX-load in the pre- and final waste water treatment facilities is at least 80%.

These requirements should neither be exceeded in the effluent after final treatment for plants discharging into water bodies nor in the effluent connected to municipal sewerage systems.

2.4 Heavy metals

For plants discharging into water bodies or connected to municipal sewerage system the concentration should not exceed the following values:

Mercury (Hg)	0.05 mg/l
Cadmium (Cd)	0.2 mg/l
Copper (Cu)	0.5 mg/l
Nickel (Ni)	1.0 mg/l
Lead (Pb)	0.5 mg/l
Chromium (Cr)	0.5 mg/l
Chromium VI (Cr-VI)	0.1 mg/l
Zinc (Zn)	2.0 mg/l

***) Total-N means the sum of total Kjeldahl nitrogen (organic N+NH₄), nitrate (NO₃)-nitrogen and nitrite (NO₂)nitrogen

These requirements should neither be exceeded in the effluent after final treatment for plants discharging into water bodies nor in the effluent connected to municipal sewerage system.

2.5 Toxicity of the effluent

For plants discharging into water bodies the toxicity effect of the waste water should be determined by two toxicity tests which could be chosen out of the following four toxicity tests:

- toxicity to fish
- toxicity to invertebrates (Daphniidae)
- toxicity to algae
- toxicity to bacteria

2.6 Analysing methods

Internationally accepted standardised sampling, analysing and quality assurance methods (e.g. CEN-standards, ISO-standards, OECD-Guidelines) should be used whenever available.

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

RECOMMENDS ALSO that the above requirements and limit values be implemented by 1 January 2000 and for countries in transition by 1 January 2005,

RECOMMENDS FURTHER that the Contracting Parties report to the Commission in 2003 and thereafter every three years.

RECOMMENDS FURTHER to reconsider the Recommendation in 2003.

HELCOM Recommendation 20E/6

Standard Classification of Chemical Industry *)

Manufacture of Chemicals and Chemical Products

1. Manufacture of basic chemicals
 - 1.1 Manufacture of basic chemicals, except for fertilizers and nitrogen compounds
 - 1.2 Manufacture of fertilizers and nitrogen compounds
 - 1.3 Manufacture of plastics in primary forms and of synthetic rubber

2. Manufacture of other chemical products
 - 2.1 Manufacture of pesticides and other agrochemical products
 - 2.2 Manufacture of paints, varnishes and similar coatings, printing ink and mastics
 - 2.3 Manufacture of pharmaceuticals, medical chemicals and botanical products
 - 2.4 Manufacture of soap and detergents, cleaning and polishing preparations, perfumes and toilet preparations
 - 2.5 Manufacture of other chemical products n.e.c.

3. Manufacture of man-made fibres

Manufacture of Refined Petrochemical Products

*) This classification is based on International Standard Industrial Classification of all Economic Activities, Statistical Papers, Series M, no. 4, Rev.3. United Nations, New York 1989

REPORTING FORMAT FOR HELCOM RECOMMENDATION 20E/6 CONCERNING REQUIREMENTS FOR DISCHARGING OF WASTE WATER FROM THE CHEMICAL INDUSTRY

I Specific Report

Only for plants > 10 m³/day process waste water

1. Country
2. Plant and its location
3. Description of capacities
4. Description of type of plant and production technology
5. Information on measures taken to reduce waste water volume and pollutant load according to Item 1 of the Recommendation
6. Water consumption in m³/year (process water only)

7. Effluent loads:

	Pollution load (t/year)	Rate of reduction	Concentration (%) (mg/l)
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COD

TOC

Phosphorous
(tot-P)

Nitrogen
(tot-N)

AOX

Heavy metals	Concentration (mg/l)(kg/year)	Total load
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Hg

Cd

Cu

Ni

Pb

Cr

Cr-VI

Zn

8. Results of toxicity tests (and of tests on overall persistence and bioaccumulation characteristics of the organic substances of the effluent, if available*)

9. Information about waste water treatment (pre-treatment and final treatment)
10. Action undertaken for reducing discharges and substitution of hazardous substances in the last three years

II General Report

Summarized description about the implementation results for plants with < 10 m³/day process waste water.

* If only results of research projects exist, please, report these results