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

HELSINKI COMMISSION - Baltic MarineHELCOM 16/17 Environment Protection Commission

Annex 14

16th Meeting Helsinki, 14-17 March 1995

HELCOM RECOMMENDATION 16/10

Adopted 15 March 1995 having regard to Article 13, Paragraph b) of the Helsinki Convention

REDUCTION OF DISCHARGES AND EMISSIONS FROM PRODUCTION OF TEXTILES

THE COMMISSION,

- **RECALLING** Paragraph 1 of Article 6 of the Convention on the Protection of Marine Environment of the Baltic Sea Area, 1992 (Helsinki Convention), in which the Contracting Parties undertake to prevent and eliminate pollution of the marine environment of the Baltic Sea Area from land-based sources,
- **RECALLING ALSO** that according to Paragraph 2 of Article 2 of the Helsinki Convention land-based pollution includes also airborne pollution,
- **RECALLING ALSO** the Ministerial Declaration of the ninth meeting of the Helsinki Commission,
- RECALLING ALSO the Baltic Sea Declaration of 1990,
- **RECOGNIZING** the importance of reducing the discharges into waters and the emissions into the atmosphere from the production of textiles because of the use or creation of substances with toxic, persistent and bioaccumulative properties during the production process,
- **RECOGNIZING** the importance of HELCOM Recommendation 13/2 concerning industrial connections to municipal sewage systems for the production of textiles,
- **RECOMMENDS** that the Governments of the Contracting Parties to the Helsinki Convention agree on the following definitions for the purposes of this Recommendation
- *"Textile" means any product derived from the manufacture of natural fibres such as wool, cotton, flax and/or the manufacture of fibres synthesized and processed from petrochemicals and modified wood pulp such as polyester, nylon, polypropylene and viscose. These products can be yarns, fabrics or consumer products (e.g. garments, carpets, upholstery, technical textiles)
- *"Textile Production" means the preparation of natural and man-made (semi-natural and synthetic) fibres, including both:

- a) the mechanical processes such as carding, spinning, weaving, knitting or tufting, and
- b)the physicochemical processes which mainly take place in aqueous ('wet') media, such as the pretreatment, the colouring or printing and the finishing of the fibres, yarns and fabrics.
- The upstream delimitation is the production of the raw material from which a treatable fibre can be produced (both the growing of natural fibres and the production of (semi-)chemical fibres, such as viscose); these processes are not considered in this Recommendation.
- The downstream delimitation is determined by the last process which alters the intrinsic properties of yarns and fabrics, before they are handled or reassembled into final products (clothing industry, etc.),
- **RECOMMENDS FURTHER** to the Governments of the Contracting Parties that they take the following measures to reduce pollution from production of textiles
- 1. The application of best available technology to the production of textiles should include the following techniques of abatement, recycling and treatment to reduce the discharges into waters and the emissions into the atmosphere
- -non-use of Chromium (VI) as oxidation agent for sulphur dyes;
- -non-use of the hazardous substances polychlorinated biphenyles (PCB) and pentachlorophenol;
- -non-use of arsenic, mercury and their compounds as biocides;
- -substitution of hazardous substances as e.g. trichlorobenzenes and alkylphenolethoxilates (APEO);
- -use of chlorinated substances as solvents only in air-closed systems with recirculation of the solvent except for use in small quantities for spot removal in order to avoid wasting of valuable produced textile. They should only be used when their overall environmental impact is considered less damaging than other methods for grease removal;
- -use of hydrocarbons which contain minimized content of aromatic hydrocarbons (with a percentage of carbon atoms linked in aromatic rings of less than 1 per cent).
- According to a case-by-case evaluation it should be decided whether the following techniques could be realized in the plant:
- -substitution of bleaching with chlorine-containing substances (e.g. hypochlorite) by bleaching with non-chlorine-containing substances (e.g. H_2O_2);
- -separation, concentration (e.g. ultrafiltration) and reuse of synthetic sizes (e.g. polyacrylates and polyvinylalcoholes);
- -no discharge into waste water of liquid or solid unused concentrates (e.g. remains of dyes, sizes or painting pastes);

- -reuse of sodium hydroxide from washing water from the mercerizing process;
- -separation of hot and cold waste water to establish regaining of heat;
- -reuse of low contaminated washing waters by e.g. counterflow techniques for continuous processes; in discontinuous processes overflow-rinsing should be avoided (i.e. the process bath should be emptied before rinsing takes part);
- -use of equipment that gains the conservation of energy, water and chemicals (e.g. controlled addition of chemicals by automatized colour-kitchen and computerized recipes).
- 2. The following limit values should not be exceeded for discharges into water bodies

2 hr sampling or 24 hr sampling

Chemical Oxygen Demand (COD_{Cr})

160 mg/l

Phosporus total

2 mg/l

Colour *), **):

spectral absorption coefficient at

436 nm 7 m⁻¹

525 nm 5 m⁻¹ 620 nm 3 m⁻¹

3. The following limit values should not be exceeded for discharges into water bodies and municipal treatment plants

Active Chlorine 1 mg/l **)

Adsorbable organic halogens (AOX) 1 mg/l Chromium (VI) 0.2 mg/l

Chromium, total 0.7 mg/l

Copper 0.5 mg/l

Zinc 2 mg/l

4.Toxicity Tests

The toxicity effect of discharges into water bodies should be determined by (at least) two toxicity tests which could be chosen out of the following four toxicity tests

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

^{*)}according to Section 2 of EN 27887

^{**)}other determination methods could be used if it can be shown that the results are comparable and equivalent

^{**)}only be measured if hypochlorite or chlorodioxide is used in the plant

5. The following limit values should not be exceeded for emissions into the atmosphere out of the production of textiles

These requirements have to be met only for textile producing plants, which -colour flock, yarn or fabric by use of carriers;

or

-bleach yarn or fabric by use of alkalies, chlorine or compounds containing chlorine;

or

-finish textiles by more than 500 m² textiles/hour.

6. Analysing methods

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

RECOMMENDS ALSO that these measures should be implemented by 1 January 1998 for new plants and by 1 January 2000 for existing plants,

RECOMMENDS FURTHER that the Contracting Parties report to the Commission in year 2000 and thereafter every three years

REPORTING FORMAT FOR HELCOM RECOMMENDATION 16/10 CONCERNING REDUCTION OF DISCHARGES AND EMISSIONS FROM PRODUCTION OF TEXTILES

Country Year	_
A.Plants which discharge directly into surface waters	
1)Name, location (map) and production structure of the plant.	
2)Description of waste water collecting and treatment systems including war minimization and recycling processes.	iste water volume, measures for its
3)Description of efforts to substitute hazardous substances.	
4)Discharge data for COD, AOX, Tot-P and heavy metals.	
5)Data for results of toxicity tests and colour measuring.	
6)Data for air emissions.	
B.Plants which discharge into municipal treatment plants	
1)Number of plants, their overall waste water volume and emission situation (w	aste water and air).
2)Details about measures to avoid, to recycle and pretreat the waste water.	
3)Description of efforts to substitute hazardous substances.	