

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

HELSINKI COMMISSION - Baltic Marine HELCOM 16/17
Environment Protection Commission

Annex 11

16th Meeting
Helsinki, 14-17 March 1995

HELCOM RECOMMENDATION 16/7

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

BASIC PRINCIPLES IN WASTE WATER MANAGEMENT IN THE LEATHER INDUSTRY

THE COMMISSION,

RECALLING Article 5 of the Convention on the Protection of the Marine Environment of the Baltic Sea Area, 1974 (Helsinki Convention), in which the Contracting Parties undertake to counteract the introduction of certain hazardous substances, as specified in Annex I of the Convention, into the Baltic Sea Area,

RECALLING ALSO that according to Article 6 of the Helsinki Convention all appropriate measures to control and strictly limit pollution by noxious substances listed in Annex II of the Convention, shall be taken, and that according to Annex III of the Convention the pollution load of industrial wastes shall be minimized,

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

RECOGNIZING that the leather industry is responsible for a part of the discharges of hazardous substances, especially chromium, into the Baltic Sea,

RECOGNIZING ALSO that many leather industry plants discharge to municipal sewerage systems where HELCOM Recommendation 13/2 should be applied,

RECOMMENDS to the Governments of the Contracting Parties that they apply to leather industry plants discharging into water bodies or municipal sewerage systems, the following basic principles:

- a) to reduce pollution loads from the leather industry Best Available Technologies as per examples listed in Appendix 1, should be selectively applied. It is essential to reduce the volume of waste water discharges through, i.a., a specific water consumption reduction to a maximum rate of 50 m³/t input hide;
 - b) waste water discharges into either water bodies or municipal sewerage systems should be treated using optional waste water treatment processes, examples of which are listed in Appendix 2;
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c)the limit values for waste water discharges from the leather industry into water bodies or municipal sewerage systems should not exceed the following values:

Cr_{tot} -0.075 kg/t input hide as annual mean and 1.5 mg/l Cr as 24 h-value or shorter sampling period

COD_{Cr} -20 kg/t input hide as annual mean for discharges to water bodies and for discharges into sewerage systems which are not connected to municipal treatment plants

tot-N -8 kg /t input hide as annual mean for discharges to water bodies and for discharges into sewerage systems which are not connected to municipal treatment plants

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

d)the tanning odour influence should be taken into account in siting of a new production unit as well as in a sludge dumping location,

RECOMMENDS ALSO that the above limit values should be implemented for production units newly constructed or reconstructed by 1 January 1996, and for existing units by 1 January 2000,

DECIDES that the above limit values be re-examined in 1998,

RECOMMENDS FURTHER that the Contracting Parties report to the Commission every three years starting in 1997.

Appendix 1

BEST AVAILABLE TECHNOLOGY

Examples of preventive technologies in leather industry reducing the amounts of pollutants

Examples of preventive technologies	Potential pollutants	Manufacturing process	Reduction
General good house-keeping, short floats, modern tannery vessels, spring valves, recycling	Water consumption general	All wet processes	Water consumption
Hide chilling	Salt	Hide preserve	No salt
Hair recovery	High COD and BOD	Unhairing and BOD	Reduced COD
Reduced sulphide unhairing	Sulphide	Unhairing	Reduced sulphide
Low-lime unhairing	Lime	Unhairing	Reduced SS (lime)
Ammonium free deliming	Ammonium compounds	Deliming bating	No use of ammonia Reduced BOD and N
Aqueous degreasing	Solvents (effluent)	Degreasing	No solvent
Improved chromium exhaustion/fixation	Chromium	Chrome tanning	Reduced chromium effluent
Chromium recovery/recycling	Chromium	Chrome tanning	Reduced chromium effluent
Chromium replacement partial or complete	Chromium	Chrome tanning	Reduced or no chromium effluent and solid waste
Wet white pretanning	Chromium	Chrome tanning solid waste	Reduced chromium

Appendix 2

Examples of waste water treatment processes for leather industry

Examples of treatment processes	Potential pollutants	Reduction
1. <u>Pretreatment</u>		
Screening	large fragments	up to 30-40% of total SS
Settling	COD	up to 30%
Flow equalization (balancing)		neutralization agent and possibility of mutual precipitation in certain cases
2. <u>Primary treatment</u>		
Catalytic oxidation or direct precipitation of sulphides	sulphides	lower pH
Precipitation/Flocculation Chromium	chromium	up to 0.5 mg/l
Physical-chemical treatment for BOD and solids removal	BOD SS	up to 95% of SS around 70% of BOD
3. <u>Secondary treatment</u>		
Biological treatment - biological filters - activated sludge (oxidation ditch) - activated sludge (conventional) - anaerobic process (lagoons)	BOD COD	below 20 mg/l of BOD ₅ and 250 mg/l of COD up to 85% of BOD ₅
4. <u>Tertiary treatment</u>		
Nitrification/denitrification Sedimentation/filtration	N SS	eutrophication reduction up to 95% efficiency

**REPORTING FORMAT ON HELCOM RECOMMENDATION 16/7
CONCERNING BASIC PRINCIPLES IN WASTE WATER MANAGEMENT
IN THE LEATHER INDUSTRY**

1. Country
2. Plant and location
3. Actual production (tonnes of input hides/a and/or m²/a)
4. Water consumption, sewage discharge and pollution loads

Water consumption m ³ /a -----municipal sewerage	Sewage discharged into:	
	water bodies systems m ³ /a -----	m ³ /a -----
(kg/t) or max(kg/t) or max ParametersLoadconcentration (t/a)(mg/l) for	Specific load Load concentration (t/a) (mg/l) for Cr _{tot} onlyCr _{tot} only	Specific load
Cr _{tot}		
COD _{Cr} *)		
tot-N		

*) For Contracting Parties who are measuring TOC the conversion factor should be indicated

5. Description of technological processes, chemicals in use, preventive and waste water treatment processes
6. Actions undertaken for reducing discharges in the last three years.