HELSINKI COMMISSION
Baltic Marine Environment Protection Commission

Implementing the HELCOM Objective with regard to Hazardous Substances

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Guidance Document on Nonylphenol/Nonylphenolethoxylates (NP/NPEs)

Presented by Sweden

June 2002

Guidance for policy makers to select and apply appropriate instruments in order to achieve cessation of emission, losses and discharges of certain hazardous substances in the Baltic Sea Area.

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0. BACKGROUND

Hazardous substances are substances or groups of substances that are persistent and liable to bioaccumulate and toxic or other substances or groups of substances, which are agreed by the Helsinki Commission as requiring a similar approach even if they do not meet all the criteria for toxicity, persistence and bioaccumulation, but which also give grounds for concern. These could for example be endocrine disrupters and substances that can damage immune systems.

The HELCOM Objective with regard to Hazardous Substances, as adopted in 1998 within HELCOM Recommendation 19/5, is to prevent pollution of the Convention Area by continuously reducing discharges, emissions and losses of hazardous substances towards the target of their cessation by the year 2020, with the ultimate aim of achieving concentrations in the marine environment near background values for naturally occurring substances and close to zero for man-made synthetic substances.

Based on a list of numerous potential substances of concern, 43 were selected for immediate priority action, among them e.g. mercury and its compounds, cadmium and its compounds, short-chained chlorinated paraffins (SCCP), nonylphenol and nonylphenolethoxylates (NP/NPE), and dioxins (HELCOM Recommendation 19/5, ATTACHMENT, Appendix 3).

A Project Team for the implementation of the HELCOM Objective with regard to Hazardous Substances held its 1st meeting in October 1998 and since then meets twice a year in Helsinki. It consists of members from all Contracting Parties (Denmark, Estonia, European Community, Finland, Germany, Latvia, Lithuania, Poland, Russia, Sweden) and representatives of NGOs (e.g. CEFIC, EuroChlor, WWF).

The Project Team decided on a pilot programme for a subset of the hazardous substances for immediate priority action to

- identify sources (incl. stockpiles), pathways and fate
- survey the legislative and the market situation
- initiate and promote development of policy instruments and measures aiming at cessation of emissions, losses and discharges, e.g. by substitution and/or minimised use.

The Contracting Parties with the help of a questionnaire submitted available information on the occurrence and regulation of those substances. This information is used to assess the exposure situation and thus to assess the risk. After these assessments relevant measures have to be identified and applied.

The Extraordinary Meeting of the Project Team for the Implementation of the HELCOM Objective with regard to Hazardous Substances, held in May 2001, in Berlin/Germany, decided to prepare guidance documents on certain substances, which should take into account the available information from EU, OSPAR, HELCOM (e.g. 4th PA), CEFIC and EuroChlor. In case no data are available realistic assumptions/estimations of application areas and amount of uses should be made. Risk reduction measures should be identified.

The presented guidance document contains available information on production and use of nonylphenol and nonylphenolethoxylates, sources of emissions and discharges, possible pathways to the marine environment, and monitoring data. It assesses the extent of the problem caused by nonylphenol and nonylphenolethoxylates, identifies possible measures to reach reduction and cessation of emissions, discharges and losses and instruments to implement these measures. Finally, proposals for possible HELCOM actions are discussed.

The document aims to provide guidance to policy makers with regard to

- Identification of relevant sources of release
- Prioritisation among sources
- Identification of appropriate measures to cease these releases
- Identification of appropriate policy instruments to implement these measures
- Making the choice among the available instruments and measures aiming to get the best outcome for the efforts taken

1. IDENTIFICATION AND QUANTIFICATION OF SOURCES

1.1 Production and Use

Production and use of NP/NPE has declined in all countries being member of EU, mainly due to voluntary agreements of industry. However, data for countries not (or not yet) being members of EU are scarce.

1.1.1 Contracting Parties

Information on production and use of nonylphenol and nonylphenolethoxylates has been provided by the Contracting Parties to the Helsinki Convention and compiled in a report "The Implementation of the 1988 Ministerial Declaration on the Protection of the Marine Environment of the Baltic Sea Area with regard to Hazardous Substances. A final conclusion including the new goals. (May 2001)". Further details are listed in tables I and II in the Annex.

Denmark: The emission, discharges and losses of NP and NPEs are probably reduced to a relative low level due to voluntary agreements with the trade organisation SPT (Association of Danish Cosmetics, Toiletries, Soap and Detergent Industries) and pesticide industry (no pesticide containing NPE will be approved). The regulation of the different industrial installations (the permits) includes the discharging license as an integral part of the permit. Developments of substitutes for NP/NPEs in insulation materials and in paints, lacquer and varnishes are in progress. Preliminary results indicate that there are qualified alternatives available to be used in paints.

Estonia: Lacking information on production-, sales- or consumption volumes.

Finland: The amounts of NP/NPEs used, especially for industrial cleaning and in pesticides, have declined since 1994 (730 t) due to information provided for the industry and the users. Breakdown of use mainly happened in chemical-, paper- paint- and pesticide-industry. However, data from the late 1990ies are not available.

Germany: The voluntary agreement on renunciation of alkylphenolethoxylates (APEO, e.g. NPEs) in a wide range of washing and cleansing products has considerably reduced APEO releases to German surface waters. After full implementation of all APEO related voluntary agreements, the major part of NPEs risk reduction will be implemented in Germany.

Latvia: Lacking information on production-, sales- or consumption volumes.

Lithuania: Lacking information on production-, sales- or consumption volumes.

Poland: Nonylphenol and Nonylphenolethoxylates are not regulated within Polish law and not monitored. They are produced and widely used in Poland.

Russia: 4-Nonylphenol is used as an industrial chemical. It is subject to different legal acts. However, no information concerning consumption or release to the environment is available.

Sweden: The production/import volumes of NPEs decreased between 1990 and 1998 in total by about 90 %. This reduction was mainly due to the decrease in the industrial cleaning sector (99.9 %) and the chemical industry (52.4%).

1.1.2 EU

The EU production of Nonylphenols (NP) was, according to the EU risk assessment, 73,500 tonnes in 1997. Around 78,500 tonnes of NP were used in Europe in 1997. Most of this was manufactured in Europe.

NP is used almost exclusively as an intermediate in the production of other chemicals, with some 60 % (47,000 tonnes) used to make Nonylphenolethoxylates (NPEs) and the remainder to make other NP-derivatives.

The EU-production of NPE has likewise been estimated to 118,000 tonnes in 1997. Around 77,600 tonnes of NPE were used in Europe in 1997.

Depending on their precise make-up (i.e. chain length), NPEs may be used as emulsifiers, dispersive agents, surfactants and/or wetting agents. In certain applications, NPEs are also used for the other properties they confer. Given their versatility, NPEs are used in a wide range of industry sectors. The most important sector is the industrial and institutional cleaning sector (including domestic cleaning), which consumes some 30 % of the NPE used in the EU.

Other sectors, which use significant amounts of NPE include emulsion polymerisation, textiles, “captive use”, i.e. use in the chemical industry e.g. synthesis of nonylphenol ether sulphates and nonylphenol ether phosphates (9 %) and leather. NP burden associated with “other niche markets & unaccounted for” are mostly unknown. A part of this is attributable to Personal Domestic (personal care products).

Tab. 1: Estimations of uses of NPE in Western Europe in 1997 (UK). Figures are expressed in kilo tonnes (Kt)

Category	NPE Usage (Kt)	% of NPE Usage
Industrial & institutional & domestic cleaning	23	29.6
Other niche markets & Unaccounted for	12.6	16.2
Emulsion polymerisation	9	11.6
Textile auxiliaries	8	10.3
Captive use	7	9.0
Leather auxiliaries	6	7.7
Agriculture	5	6.4
Paints	4	5.2
Metal industry	2	2.6
Pulp & paper	1	1.3
Total	**77.6**	**100**

1.1.3 Swedish Product Register

According to the Swedish Product Register, there are industry sectors not covered by the risk assessment. More information might therefore be needed to further specify the use category unaccounted for. This is e.g. the use of NPEs in glues as water based adhesive for end use in different industry sectors. This is mainly in textile industry, but also in industry for pulp and paper and paper products, in printing-works and other industry for recorded media, construction industry and industry for plastic products. In the construction industry NPE uses are e.g. for sealing compounds, insulating materials, floor covering materials and dispersion adhesives. NP/NPEs are further used by the offshore industry. The main application is as dispersive agent.

1.2 Sources of emissions and discharges

According to the Overall HARP-HAZ Guidance Document major important sources and sub-sources of discharges to water of NP and NPEs are to be found in relation to cleaning activities in SMEs (Small and Medium sized Enterprises), to characteristic processes in the manufacture of chemicals, chemical products and man made fibres (polymers/plastics) in industrial activities (IPPC), and to municipal waste treatment (incl. storm water runoff and sludge). Medium important sources and sub-sources include household consumption, and several activities within SMEs and IPPC industrial sectors. Minor discharges to water relate to paint application, usage of veterinary medicine and pesticides, in pigment and ceramic manufacture, and in the refineries and offshore activities.

1.2.1 Contracting Parties

Information on sources of emissions and discharges of nonylphenol and nonylphenolethoxylates has been provided by the Contracting Parties to the Helsinki Convention. This information is compiled in tables I and II in the Annex.

1.2.2 EU

NP is used in EU almost exclusively as an intermediate in the production of various NP derivatives, mostly ethoxylates. Releases of NP from these production processes are estimated to be very low. As a result, very little NP enters into the environment directly. The primary source of NP found in the environment is considered to be NPEs, which can break down into NP in sewage treatment works or in the environment, after being released into the environment during their production, their formulation into various other products, and the use of such products. The wide variety in use makes products containing NPEs potential sources of diffuse emissions of NPEs and NP. This is mainly the case during use and waste management. During incineration of wastes neither NPs nor NPEs are released.

2. PATHWAYS TO THE MARINE ENVIRONMENT, MONITORING DATA, AND ASSESSMENT OF THE EXTENT OF PROBLEMS

2.1 Pathways to the marine environment

The main compartments to which releases occur are via industrial and municipal wastewater and wastewater treatment plants, to surface waters as rivers, lakes, seas and sediment, and via

sewage sludge containing NP/NPE spread on soil and to air. If NP/NPE reach the marine environment they will generally do so via industrial wastewater from different industry activities e.g. production of NP and NPE, when using NP and NPE in the formulation of other chemical products and articles and via municipal wastewater. No useful data concerning emissions of NPEs, and its degradation products, from articles have been found.

2.2 Monitoring data

Nonylphenol and nonylphenolethoxylates are not in HELCOM's regular monitoring programmes. Thus, no such data are available for these substances with regard to the Baltic marine environment.

The following subchapters (2.2.1-2.2.11) summarize monitoring data from the UK Draft risk assessment and the Netherlands' study "Endocrine-disrupting compounds in water systems: A pilot study of the occurrence of estrogenic compounds in surface and wastewater in the Netherlands". The later was carried out during 1997/98.

2.2.1 Surface water

Due to the industry led voluntary agreement, and partly the Swiss ban, the use of nonylphenol ethoxylates in domestic detergents in most European countries will have reduced in recent years. Some of the older measurements (notably the data from the Glatt River in Switzerland) may not reflect the current levels of nonylphenol, particularly where the major source was thought to be from nonylphenol ethoxylate use in detergents.

In a recent study levels of NPs of around 0.1-0.3 µg/l have been measured in the River Glatt in Switzerland. The corresponding levels in the year 1984, before the Swiss ban on the use of NPEs in detergents, were 0.3-45 and 0.3-99 µg/l, of NPs and NPEs, respectively. Levels of NPs of around <1.6-180 µg/l, 0.5-12 µg/l, 0.2-2.7 µg/l, 0.8-2.3 µg/l and 0.6-5.3 µg/l have been measured in six rivers in the United Kingdom. The highest concentration <1.6-180 µg/l, was measured in the River Aire, which received a high input of industrial surfactants from the textile industry. Levels of NPs of around 0.1-0.8 µg/l have been measured in a Finish lake, 1 km from a sewage treatment plant (car washing using NPE surfactants). Average levels of NPs of around 0.038-0.12 µg/l were measured in the river Main in Germany between the years 1989-1991. Levels of NPs up to 0.14 µg/l have been measured in surface waters in a Channel in the Netherlands. Average levels of NPs of around 0.013 µg/l have been measured in surface waters in Germany in the year 1998. The maximum concentration in rivers in Austria were found to be 0,3 µg/l in years 1998 to 1999.

2.2.2 Seawater

Levels of NPs of around 0.08-3.1 µg/l dissolved NP and 0.09-5.2 µg/l total extractable NP in the Tees estuary in the UK have been measured.

2.2.3 Groundwater

Average levels of NPs of around 0.96 µg/l, 0.40 µg/l, 0.44 µ/l and 0.20 µg/l were found 2.5m, 5m, 7m and 13m, respectively from the River Glatt, due to infiltration of river water to groundwater.

2.2.4 Suspended matter

Levels of NPEs and NPs of around 0,70-8,0 µg/g dry weight and 0,21-0,62 µg/g dry weight, respectively, have been measured in a Channel in the Netherlands.

2.2.5 Sediment

Levels of NPs of around 0.51-5.61 mg/kg have been measured in the River Glatt in Switzerland in the year 1984. Levels of NPs of around 180-890 µg/kg dry weight were found in a Finish lake, close to a sewage treatment plant. Average levels of NPs of around 7.7-9.5 mg/kg dry weight were found in the river Main in Germany in the year 1991. Levels of NPEs and NPs of around 2,6-5,7 µg/g dry weight and 0,63-1,70 µg/g dry weight, respectively, were found in the Netherlands. A survey of several groups of organic compounds was undertaken in 1995 in 22 estuaries in Western Europe (van Zeijl et al, 1997). In the Liffey estuary (Ireland) and Schelde (Belgium), no NP was detected. The highest levels were found in the estuaries of Rijn (Netherlands), Seine (France), Mersey (United Kingdom), Ems and Elbe (Germany). NPE was found at all studied locations with levels varying between 12 and 400 ng/g dry weight. The highest levels were found in the rivers Mersey, Seine, Liffey, Schelde and Rijn. There is a relation between NPE and NP because all NPE will end up as NP after degradation.

2.2.6 Air

No information available

2.2.7 Municipal wastewater treatment plants

Levels of NPs in municipal wastewater in the Zurich area was 14 µg/l and after treatment 8 µg/l. Level of NP of 467 µg/l and 1000 mg/kg dry weight respectively, were measured in anaerobic sludge digester and in anaerobic digested sludge. Levels of NP in activated sludge were 128 mg/kg dry weight. Levels of NPEs and NPs of around 2,1-170 µg/l and levels up to 23 µg/l were measured before treatment of municipal wastewater in the Netherlands. After treatment levels fell to 6.1 µg/l and up to 1,0 µg/l respectively. Levels of NPEs and NPs of around 0,7-880 µg/l and levels up to 125 µg/l have been measured in sewage sludge. The corresponding data for OPEs and OPs in sewage sludge were measured in levels up to 28 µg/l and up to 2 µg/l, respectively.

2.2.8 Industrial wastewater treatment plants

In Finland, levels of NPs and NPE of around 100-200 µg/l and 30,000-70,000 µg/l respectively, were measured in untreated wastewater in a sewage treatment plant. After treatment levels were around 434 µg/l and 4,600-12,900 µg/l respectively. Levels of NPs of around <1-214 mg/kg dry weight and <1-39 mg/kg dry weight in sewage sludge from domestic wastewater treatment plants and industrial wastewater treatment plants respectively were measured in Eastern Germany between the years 1993 to 1994. Levels of NPEs and NPs up to 2.270 µg/l and levels up to 400 µg/l have been measured in untreated industrial wastewater in the Netherlands and after treatment levels of around 0,9-15 µg/l and up to 1,2 µg/l, respectively. Levels of NPEs and NPs up to 2.400µg/l and levels up to 2.500µg/l have been measured in sewage sludge. The corresponding data for OPEs and OPs in sewage sludge were measured in levels up to 50 µg/l and up to 24 µg/l, respectively.

2.2.9 Sewage sludge

Levels of NPs of around 10 mg/kg have been measured in Germany in the year 1998. The corresponding levels in the year 1989 were 264 mg/kg. Levels of NPs of around 90 mg/kg have been measured in Switzerland in the year 1997. The corresponding levels in the year 1984 were 1010 mg/kg.

2.2.10 Concentrations in Biota

Levels of NPs in the range from <0.03 to 1.6 mg/kg dry weight have been measured in fish tissues taken from the Glatt River in Switzerland. Levels of NPs up to 1.2 mg/kg dry weight were found in samples from ducks (muscle) taken from the Glatt River in Switzerland. Levels of NPs and NPE of 1.0 mg/kg and 9.5 mg/kg dry weight respectively, were measured in kopvoorn liver and in kopvoorn muscle 0.18 mg/kg and 0.31 mg/kg respectively in River Air in Great Britain and in the Glatt River in Switzerland (CEFAS, 1998; Ahel, 1993).

2.2.11 Human beings

No information available

2.3 Assessment of the extent of problems

Occurrence of nonylphenol (NP) and nonylphenolethoxylates (NPE) in the aquatic environment of industrial areas and non-industrial areas as well as in aquatic and terrestrial organisms are reasons for concern. NPE degrade relatively easily in the environment to form short-chained nonylphenolethoxylates and (especially under anaerobic conditions) NP, which are toxic to organisms that live in water. NP and NPEs are accumulated in sewage sludge and sediment. Furthermore, NP bioaccumulates in aquatic species. The toxicity to aquatic organisms and possible endocrine disrupting properties are further reasons for concern.

In the EU environmental risk assessment it is concluded that aquatic, terrestrial and secondary poisoning (e.g. bioaccumulation) risks were unacceptable. In terms of lowest observable effect levels (LOEL), the most sensitive of these “endpoints” is the aquatic environment (including sediment). It is stated that background concentration levels must be reduced significantly, while local concentrations must also be controlled. It could however be noted that the current TGD does not comprise certain methods to assess the marine environment. Such methods are, however, under development.

It is also concluded that concern have been identified for some occupational exposure scenarios. Exposure for sources on a local level is of concern, when the exposure on a regional level is of no concern. Regarding consumers, no risk is expected.

Further problems may be revealed when additional considerations related to the specific conditions of the Baltic Sea are taken into account. These specific conditions have been identified and compiled in the paper: “The specific conditions in the Baltic Sea Region to be taken into account when selecting and prioritising hazardous substances for priority action.” (2001).

3. IDENTIFICATION OF POSSIBLE MEASURES AND INSTRUMENTS

3.1 Measures required by EU legislation or international agreements

The Draft Risk Reduction Strategy (RRS), within the framework of EU existing substances regulation, is mainly aiming at reducing direct contamination of the aquatic environment. The following is recommended:

- Under Council Directive 76/769, the marketing and use of NPEs should be banned for sectors responsible for the majority of environmental burden. This includes industrial and institutional & domestic cleaning, textile processing, leather processing, agriculture (biocidal products, in particular use in teat dips), metal working, pulp and paper industry and personal domestic (cosmetics and other personal care products).
- For use in pesticides, national authorities when granting authorisation decisions and in particular in cases where significant environmental impact is already experienced at local level should take into due consideration the results of the risk assessment. In such cases encouragement should be given to the development and use of alternatives to nonylphenol and nonylphenol ethoxylates. For the use as an adjuvant/co-formulant measures aimed at modifying consumer behaviour should also be taken into account. A similar approach is recommended for uses in veterinary medicinal products.
- Emission limits in licensing under the Directive on Integrated Pollution Prevention and Control (IPPC; 96/61/EEC) for the following uses: production of NPE; captive use; production of phenol/formaldehyde resin; production of other plastic stabilisers and emulsion polymerisation.
- The use of a limit value (EQS) for residual risks in remaining use categories. It is proposed to use the new Water Framework Directive or national measures.
- For the use of sludge containing nonylphenol and nonylphenol ethoxylates, within the legislative framework currently in force at Community level for sludge management, it is recommended that consideration be given to the development of provisions on concentration limit values for nonylphenol and nonylphenol ethoxylates when sludge is spread on land.

Restrictions on NP/NPE have been discussed in the working group on limitations on marketing and use of dangerous substances. No draft directive is yet presented. Within the Water Framework Directive a list of hazardous substances, including NP and octylphenol, has been developed. A further, prioritising process of work has developed a list of priority hazardous substances. NPs are included on that list, which are defined (Directive 2000/60/EC) as "substances or groups of substances that are toxic, persistent and liable to bio-accumulate, and other substances or groups of substances which give rise to an equivalent level of concern". These substances shall be subject to cessation or phase-out.

A draft proposal of a new Detergent Directive aims at restricting the use of detergents as APEs. Restrictions on marketing and use of APEs will be put into force by Directive 76/769/EEC.

3.2 Other existing or new measures and instruments

Norway has adopted a national regulation to strengthen an earlier voluntary agreement with industry aiming at the phase out of NP/NPE and OP/OPE.

3.2.1 Water based paints

Concerning the use of NPEs in the binding polymer emulsion of water based paints for domestic and industrial use, a large part of the substitution and reformulation has already been carried out in Denmark and Sweden. Most of the companies associated to the Swedish Paint and Printing Ink Manufacturers Association have fulfilled the goal set up to reduce the use of alkyl (C8-C10) phenol ethoxylates by approximately 90 % between 1995 – 2000. The Swedish paint industry has a timetable to phase out the use of NPEs in water-based paints for the building sector by the end of year 2001. All newly developed paints are without APEs. However, difficulties are remaining in replacing APEs or NPEs, in paints for the metal and wood working sectors. Therefore, the replacement of APEs or NPEs will be at a later date in paints for these sectors. In a Danish Product Policy Programme project studying substitution, the cost for substitution of NPEs or APEs in paints was found to mainly concern identification of alternatives, environmental and health screening of alternatives, formulation and technical testing of the product. The total cost for one product was expected to be 40 000 - 80 000 DKK. According to information from the European Producers Association of Alkylphenols and Derivatives, the total cost for substitution of NPE in paint is estimated to US$ 100000-150000.

3.2.2 Agricultural pesticides

In Sweden (since 1997) and Denmark, approval is no longer given to new agricultural pesticides if they contain NPEs or other similar APEs. In Norway corresponding approval measures are taken after year 2000. The major part of agricultural pesticides is imported into Sweden. A complete phase-out on the Swedish market is expected within a few years time. In year 2000, most Swedish suppliers have applied for the approval of re-formulated pesticides. Thus, alternatives to NPEs and APEs are available and work is ongoing in Europe to replace NPEs and APEs in pesticides.

3.2.3 Emulsion polymers

According to the Swedish adhesives industry the use of NPEs in water-based adhesives has been reduced by 98 % between 1995 - 1999. The aim is to achieve NPEs and APEs free alternatives to the Swedish market in year 2005 at the latest for different industry sectors such as pulp and paper, textile, paints, adhesives and plastics.

3.3 Alternatives

According to industry the substitutes in the use area detergents and cleaning agents are mostly alcohol ethoxylates. In terms of environmental risk, alcohol ethoxylates appear to present a clear advantage over NPEs, chiefly owing to issues of biodegradability. According to industry the substitutes in the use area detergents and cleaning agents for domestic and industrial uses are mixtures of anionic and non-ionic surfactants, such as linear alcohol ethoxylates, fatty acids and derivatives, fatty amines or unsaturated hydrocarbons.

Specifically, alcohol ethoxylates biodegrade more readily than NPEs in the environment. Furthermore, alcohol ethoxylates tend to degrade fully to carbon dioxide and water in a relatively short time scale, while NPEs degrade to form NPs, the toxicity and slow biodegradability of which have been identified in the risk assessment. In terms of human health risks, no data have been found which favour either alcohol ethoxylates or NPEs as a group. Nevertheless, when substituting an NPE with an alcohol ethoxylate, it is important to look at the toxicity of the specific chemicals under consideration, as toxicity may vary substantially depending on the alkyl chain lengths, chain branching and the degree of ethoxylation. In the

binding polymer emulsion of water based paints mostly fatty alcohol ethoxylates, but also esterified linseed oil, different kinds of non-ionic tensides, phosphate esters, and potassium polycarboxylates are used as alternatives to alkylphenolethoxylates according to the paint industry in Sweden.

According to the adhesives industry, mostly fatty alcohol ethoxylates are used as alternatives in the polymer emulsion of water based adhesives but the major difficulties are in replacing NPEs in acrylic and chloroprene rubber dispersions.

Mostly alcohol ethoxylates and other ethoxylates are used as alternatives to NPEs according to the textile industry.

In the leather industry there are available alternatives to APEs mostly based on fatty alcohol ethoxylates and blends thereof, e.g. mixtures of alcohol ethoxylates or anionic surfactants.

Concerning NP/NPE-containing pesticides, alternatives are available in Sweden, at least for some uses. Developing efforts are also ongoing. It has however not been possible to obtain information on the substitute(s), while the composition information is seen as company property.

Octylphenols (OPs) are known substitutes for NPs in the manufacture of derivatives other than NPEs. The use of OPs is not expected to yield any reduction in risk over the use of NPs. A Swedish risk assessment of APEs (KemI Report 1/00) has just been published at the National Chemicals Inspectorate. Since data on other APEs are scarce, this assessment is focusing on octylphenol and butylphenol. It is stated that octylphenol is one of the most potent APs to produce estrogenic effects in vitro and that estrogenic effects have also been demonstrated in vivo in young rats. In addition, and according to CEPAD, neither the cost (much higher than NP) of octylphenol, nor its performance nor availability makes it suitable as a substitute for NP.

4. PROPOSALS FOR POSSIBLE HELCOM ACTIONS

4.1 Evaluation of the need for actions at HELCOM level

It can be concluded that even if the EU draft proposal on a risk reduction strategy fulfils a lot of the requirements for fulfilling the HELCOM target to be aimed for by the year 2020, it will not, however, cover all CPs. The quantity of NP/NPEs in sewage sludge is a result of the many non-industrial uses and industrial uses of NPE-based products, and further measures may also be needed related to other use areas of NP/NPEs, not covered by the EU proposals.

For the use of NPEs in agriculture pesticides and adjuvants containing NPEs, draft measures proposed are measures taken by national authorities when granting authorisation.

The use of NP/NPE by the offshore sector seems to decrease (or already has been ceased) in some countries on a voluntary basis. In the United Kingdom the use of NP/NPEs, as well as other known endocrine disrupters, in the offshore sector have been phased out in year 1999 according to information from the UK.

As mentioned, Norway has adopted a regulation on the phasing out of all uses of NP/NPE and OP/OPE. This includes the offshore industry as well.

Presently, two HELCOM Recommendations are related to NP/NPE:

- HELCOM Recommendation 23/7, *Reduction of discharges and emissions from the metal surface treatment*, where NPE is included
- HELCOM Recommendation 23/12, *Reduction of discharges and emissions from production of textiles*, where APEOs are included

There is, therefore, a need to examine if other uses, due the risk posed to the marine environment, and especially taking the special conditions of the Baltic Sea into account, should be added to those uses recommended for restrictions on marketing and use.

There seems to be a base for HELCOM to agree on its own for actions aiming for the HELCOM 2020 target.

4.2 Proposals for HELCOM actions

As stated above, measures likely to be taken within the EU will to a large extent fulfil the requirements of the HELCOM target to be aimed for by the year 2020. These measures will not, however, involve all CPs and further measures may also be necessary.

Since it is not yet possible to judge to what extent measures resulting from the work in progress in the EC will enable the HELCOM 2020 target to be achieved for NPs/NPEs, HELCOM should in 2003:

- review what is likely to be achieved by the EC measures that have by then been adopted;
- consider the need for further HELCOM actions in order to achieve the year 2020 target.

The existing HELCOM Recommendations, related to NP/NPE (23/7 and 23/12), will likely not cover the actions to be expected to fulfil the target with regard to NP/NPE, why preparing a Recommendation specific for NP/NPE is proposed.

Such Recommendation may include the following items:

- setting up interim targets concerning other areas, not covered by the EU-measures
- considering measures, like limit values, to protect the marine environment, especially related to the specific conditions of the Baltic Sea
- work for a ban on marketing and use for the use of NP/NPEs in agricultural pesticides
- all Contracting Parties should put efforts into collecting information on the availability of, and experiences on the use of, technically, environmentally and economically acceptable alternatives to NP/NPE. This information should preferably be included on the HELCOM web site.
- in the light of the progress within the EU framework, develop further complementary actions, if appropriate

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6. ABBREVIATIONS

APs	Alkylphenols
APE(O)s	Alkylphenolethoxylates
CEFIC	European Chemical Industry Council
CPs	Contracting Parties
EC	European Community
e.g.	exempli gratia / for example
EU	European Union
EuroChlor	European Chlor-Alkali Industry
g	gram
HELCOM	Helsinki Commission (Baltic Marine Environment Protection Commission)
IPPC	Integrated Pollution Prevention and Control
KEMI	Kemikalieinspektionen – Swedish National Chemicals Inspectorate
kg	Kilogram
kt	Kilotonne
l	Litre
mg	Milligram
ng	Nanogram
µg	Microgram
NP/NPE	Nonylphenol/Nonylphenolethoxylates
OECD	Organisation for Economic Cooperation and Development
OPs	Octylphenols
OPEs	Octylphenolethoxylates
OSPAR	Oslo and Paris Commissions
PARCOM	Paris Commission
PLC	Pollution Load Compilation
SCCP	Short Chained Chlorinated Paraffins
SME	Small and Medium Sized Enterprises
UK	United Kingdom
WWF	World Wide Fund for Nature

ANNEX

Table I: Nonylphenolethoxylates and degradation/transformation products (NPEs). Data provided by HELCOM's Contracting Parties.

No.	Question	Denmark	Estonia	Finland
1.1a	Legislation and other measures concerning chemical products	no ban	The Chemicals Act (06.05.1998), and the Waste Act (10.06.1998) are giving the general guidelines and principles in dealing with chemicals and hazardous substances. NP is listed as hazardous, i.e. materials/products containing NP are regulated/treated as hazardous waste.	There is no national legislation concerning NP/NPE In the national pesticide authoritisation decisions substitution of NPEs with less harmfull alternatives have been recommended.
1.1b	Ban of the production/use of the substance	no ban	not banned/not regulated	
1.1c	Restricted use/import of the substance		not restricted safety requirements established for storages, depositories and for stowing of NP/NPE (regulation No 106 (6.12.2000) of the Minister of Transport and Communication	
1.1d	Use of economic instruments, voluntary agreements etc.	1987: voluntary agreement with the trade association SPT (Association of Danish Cosmetics, Toiletries, Soap and Detergent Industries) to phase out the use of NPEs in cleaning products. In 1998 there was no consumption of NPEs among trade association members in Denmark. SPT covers 80-90% of the total market of cleaning products in Denmark. While a 1994 study indicated that between 100 and 250 t of NPEs were still being used in washing and cleaning products by companies not covered by the voluntary agreement. A voluntary agreement on substitution of Xenoestrogenic substances as NPE in pesticides has been entered between the Industry and The Danish EPA. This is proceeding with satisfaction. The consequence of this is that no pesticide containing NPE will be approved in Denmark. The voluntary agreement covers those companies that are members of the branch organisation. All main producers and importers are members of the branch organisation. In 1997 alkylphenolethoxylate was included on the list of 'Undesirable substances'.	Contracts between MoE and enterprises: enterprises don't have to pay pollution fees for certain amounts of pollution if they invest the equal amount of money into cleaner technology, more effective treatment of waste(water) etc, and thus reduce their emissions. The conditions and requirements for substitution of pollution fees are worked out case-by-case, keeping in mind the specific activities, technologies and used substances of an enterprise.	
1.1e	Planned measures and activities for implementation	2 projects has been initiated concerning development of substitutes for NPE in paints and in insulation materials, under the Product-orientated Environmental Initiative. Results from these projects will be presented in 2001. Product-orientated Environmental Initiative: The overall objective of the product initiative is to intensify the development and marketing of cleaner products so as to reduce the total environmental impact from production, use and disposal of products. It must be ensured that there is a constant trend towards use of substances and products that are less hazardous to health and environment. The production, use and disposal of environmentally and health hazardous chemical substances and		

No.	Question	Denmark	Estonia	Finland
		products must be carried out in a way that is safe to the environment and health. When, with regard to health and environment, safe production, use and disposal cannot be demonstrated, initiatives must be taken to restrain such problematic areas. Progress in the development and marketing of cleanerproducts presupposes the possibility of providing public funding. At the end of 1997 the Danish government introduced a Bill for the amendment of the Environmental Protection Act in order to allow Government subsidies for cleaner products, etc. The proposed subsidy programme is intended to open possibilities for:* The development of products with improved environmental properties from cradle to grave, including reduced environmental impact during production and use as well as during waste handling.* Ensuring that the environmental properties of the products become part of market and competition conditions on equal terms with price, quality, function, etc. Ensuring that each individual group of stakeholders is able and willing to contribute to reducing the environmental impact from the production and use of products as well as during waste handling.)		
1.2a	Regulation of industrial installations (permits). Please, indicate date of implementation of regulations.	The regulation of the different industrial installations (the permits) include the discharging license as an integral part of the permit. The permits are granted by the county authorities and details here among the date of implementation of the permits are not known by the central authorities.	Discharges into environment are regulated through permitting system; issuers of permits are 15 County Environmental Departments of the Ministry of the Environment (water, waste, air pollution and integrated environmental premit).	
1.3a	Effectiveness of the implemented legislation/regulations		Permitting of emissions, list of hazardous substances, nomenclature of goods/products in place; however the NP/NPE is not "reportable" yet	Helcom Rec. 16/6 concerning the use of NPEs in metal surface treatment industry or Parcom Rec. 92/8 on phasing out the use of NPEs as cleaning agents have not been implemented by national legislation. The use of NP/NPE in cleaning agents has decreased significantly due to information provided for the industry and users.
1.3b	Effectiveness of implementation of relevant HELCOM Recommendations	In 1998 there was no consumption of NPEs among trade association members in Denmark. The trade association (SPT) cover 80-90% of the total market of cleaning products in Denmark. While a 1994 study indicated that between 100 and 250 tonnes of NPEs were still being used in washing and cleaning products by companies not covered by the voluntary agreement.	no data available	
1.4a	Information on production, industrial and consumer uses of these substances, including relevant modes of applications	2200 t (not validated product register information, notification not mandatory)	no data available	The total amount NP/NPE used in 1994 was 730 t. The breakdown of the use was: chemical industry 230 t, paper industry 180 t, paint industry 200 t, pesticides 25 t, industrial cleaning 45 t, others 50 t.
1.5a	Information on relevant discharges, emissions and losses from point sources and diffuse sources	Discharges from Danish waste water outlets estimated to 350 kg in 1993	no data available	
2.1a	Amount of import/export, production per year	Export: 800 t (not validated product register information, notification not mandatory). All imported - no production in Denmark.	no data available not produced in Estonia	
2.2a	Amount of substances in imported chemical products, articles & goods	2200 t (not validated product register information, notification not mandatory). No information on articles and goods.	no data available total amount of imported organic chemicals was 41000 tons (in 2001).	

No.	Question	Denmark	Estonia	Finland
2.3a	Amount of sales per year, specified for each use and mode of application	Pesticides 24 t; Flocculation substances 15 t; Insulation materials 1500 t (other estimates are in the order of a few hundred tonnes); Cutting fluids 16 t; Paintings, lacquer, varnishes 10 t; Cleaning agents 250 t; Grouting and sealing material 30 t; Fillers 75 t, Viscosity adjusters 15 t (not validated product register information, furthermore, notification not mandatory).		
2.4a	Amount of stockpiling and its treatment of substances banned or restricted in use		no data available	
2.5a	Information on the amount of discharges to water/emissions to air and losses (from production, use, storage, transport and waste treatment) within the catchment area of the Baltic Sea	Discharges from Danish waste water outlets estimated to 350 kg in 1993	no data available	
2.6a	Information on illegal or unidentified uses (indication on such uses can be obtained e.g. from monitoring data)		no data available	
2.7a	Amount of administrative and financial resources needed for the implementation and supervision of measures described under question 1.1. It is intended to get at least some rough estimation on these costs.		no data available	

Tab. I (cont.): Nonylphenolethoxylates and degradation/transformation products (NPEs). Data provided by HELCOM's CPs.

No.	Question	Germany	Latvia	Lithuania
1.1a	Legislation and other measures concerning chemical products	At present, the use of NPEs is not restricted or banned.	registered/licensed for use as an industrial chemical	According to Gov. Res. No. 452 of 21.07.1999 On licensing of dangerous chemicals produce, trade and storage, NPE to produce, trade and storage from 01.10.1999 necessary to receive a licence from MoE.
1.1b	Ban of the production/use of the substance	NPE is not banned or restricted.	not legally banned for production, import, marketing and use	
1.1c	Restricted use/import of the substance			
1.1d	Use of economic instruments, voluntary agreements etc.	The voluntary agreement on renunciation of APEO in a wide range of washing and cleansing products has considerably reduced APEO releases to German surface waters. The German Washing and Cleansing Agents Act of 1986 (WRMG) provides a specific promoting framework for successful implementation of voluntary agreements. The WRMG is supplemented by procedural regulations, which are widely accepted as 'binding voluntary scheme. Important elements of the integral WRMG framework comprise: a differentiated formulation notification system, a comprehensive data bank, intensive communication including exchange of detailed information, effective control elements. In practice, the WRMG framework means considerable expenditure to maintain the above mentioned elements effective, keeping the voluntary agreement's efficiency at high level is hampered by minor, but numerous new uses and by increasing relevance of international market further activities and considerations: after full implementation of all APEO related voluntary agreements, the major part of NPEO risk reduction will be implemented in Germany. While regional NP concentrations appear to be well below the PNEC in Germany, locally measured NP concentrations above the PNEC still prove need for further, well targeted action. Presently, specific 'German' needs for possible further measures are being evaluated and shall be set into force, if EU wide action would be delayed or insufficient.		
1.1e	Planned measures and activities for implementation			
1.2a	Regulation of industrial installations (permits). Please, indicate date of implementation of regulations.			
1.3a	Effectiveness of the implemented legislation/regulations			
1.3b	Effectiveness of implementation of relevant HELCOM Recommendations			
1.4a	Information on production, industrial and		no use	

<table>
<tr><th>No.</th><th>Question</th><th>Germany</th><th>Latvia</th><th>Lithuania</th></tr>
<tr><td></td><td>consumer uses of these substances, including relevant modes of applications</td><td><table><tr><th>Functional use categories in the EU 1994</th><th>[%]</th></tr><tr><td>Cleaning/washing agents</td><td>44.7</td></tr><tr><td>Construction materials & additives</td><td>1.4</td></tr><tr><td>Cosmetics</td><td>1.5</td></tr><tr><td>Dust binding agents</td><td>1.4</td></tr><tr><td>Flotation agents</td><td>1.7</td></tr><tr><td>Foaming agents</td><td>2.8</td></tr><tr><td>Intermediates</td><td>0.2</td></tr><tr><td>Plant protection products</td><td>0.1</td></tr><tr><td>Surface active agents</td><td>46.1</td></tr><tr><td>Others</td><td>0.1</td></tr></table>(CEFIC, 1996)</td><td></td><td></td></tr>
<tr><td>1.5a</td><td>Information on relevant discharges, emissions and losses from point sources and diffuse sources</td><td></td><td></td><td></td></tr>
<tr><td>2.1a</td><td>Amount of import/export, production per year</td><td>NPE producers reported that production of NPEs was 109,808 t in 1994 and 118,000 t in 1997 in the EU. (table)</td><td></td><td></td></tr>
<tr><td>2.2a</td><td>Amount of substances in imported chemical products, articles and goods</td><td></td><td></td><td></td></tr>
<tr><td>2.3a</td><td>Amount of sales per year, specified for each use and mode of application</td><td></td><td></td><td></td></tr>
<tr><td>2.4a</td><td>Amount of stockpiling and its treatment of substances banned or restricted in use</td><td></td><td>no stockpiles</td><td></td></tr>
<tr><td>2.5a</td><td>Information on the amount of discharges to water/emissions to air and losses (from production, use, storage, transport and waste treatment) within the catchment area of the Baltic Sea</td><td>(table)</td><td></td><td></td></tr>
<tr><td>2.6a</td><td>Information on illegal or unidentified uses (indication on such uses can be obtained e.g. from monitoring data)</td><td></td><td></td><td></td></tr>
<tr><td>2.7a</td><td>Amount of administrative and financial resources needed for the implementation and supervision of measures described under question 1.1. It is intended to get at least some rough estimation on these costs.</td><td></td><td></td><td></td></tr>
</table>

Tab.: Production and use of nonylphenol ethoxylates within the EU (1997)

	Volume (tonnes)	
NPEO production	118,000	
NPEO imports	5,600	
NPEO exports	46,000	
Total EU Use	77,600	
Use		As percentage of EU Use
Captive use	7,000	9
Industrial and institutional cleaning	23,000	30
Textile auxiliaries	8,000	10
Leather auxiliaries	6,000	8
Agriculture	5,000	6
Emulsion polymerisation	9,000	12
Paints	4,000	5
Pulp and Paper	1,000	1
Metal industry	2,000	3
Other niche markets	7,000	9
Total	72,000	93
Difference Use and EU Use	5,600	

Notes: The volume used does not appear to take account of the import volume of 5,600 tonnes. Industry thinks that this volume is probably divided among the other applications.

Other niche markets in this survey covers the use of NPEs in the photographic industry, electronic industry, mineral oil and fuel industry and civil engineering industry. It also covers NPE users who purchase small quantities of material per year from the nonylphenol producers for use in a variety of end applications.

Table: Point source discharges in the entire German Baltic Sea Catchment Area for Nonylphenolethoxylates [kg/a]

	Discharge industrial plants	Discharge municipal STP*	Discharge in German Baltic Sea catchment area	calculated total discharge in the German Baltic Sea coastal areas[1)]	calculated total discharge in the German Oder catchment area [2)]	calculated total discharge in the German Baltic Sea catchment area
Nonylphenol-monoethoxylate NP1EO [kg/a]	2.77	25.1	27.8	**74.9**	**3.6**	**78.5**
Nonylphenol-dioethoxylate NP2EO [kg/a]	7.15	< LQ**	7.15	**< LQ**	**8.58**	**8.58**
NPnEO (NP1EO + NP2EO) [kg/a]	**9.92**	**25.1**	**34.95**	**74.9**	**12.18**	**87.08**

*STP = waste water treatment plants
** LQ = limit of quantification
*** according to method developed by BfG
1) Point sources in Mecklenburg - Western Pomerania and Schleswig Holstein
2) Point sources in Brandenburg and Saxony

Tab. I (cont.): Nonylphenolethoxylates and degradation/transformation products (NPEs). Data provided by HELCOM's CPs.

<table>
<tr><th>No.</th><th>Question</th><th>Poland</th><th>Sweden</th><th>Russia</th></tr>
<tr><td>1.1a</td><td>Legislation and other measures concerning chemical products</td><td>not referred to in Polish law</td><td>According to Parcom Recommendation 92/8 on NPEs the use of NPEs as cleaning agents (for industrial uses) should be phased out by 2000.</td><td></td></tr>
<tr><td>1.1b</td><td>Ban of the production/use of the substance</td><td>not banned</td><td></td><td></td></tr>
<tr><td>1.1c</td><td>Restricted use/import of the substance</td><td></td><td></td><td></td></tr>
<tr><td>1.1d</td><td>Use of economic instruments, voluntary agreements etc.</td><td></td><td>Voluntary phase-out activities by importers, producers and users mainly driven by goal set by the Parliament in 1991: at least 90 % of the use should be phased-out by the year 2000. This should be achievable through voluntary measures within industry concerned.</td><td></td></tr>
<tr><td>1.1e</td><td>Planned measures and activities for implementation</td><td></td><td>The risk evaluation of NPEs within the EU programme on Existing Substances should be presented before further measures are proposed.</td><td></td></tr>
<tr><td>1.2a</td><td>Regulation of industrial installations (permits). Please, indicate date of implementation of regulations.</td><td></td><td>One company has restrictions on discharge to waste water (decision 1993; EPA).</td><td></td></tr>
<tr><td>1.3a</td><td>Effectiveness of the implemented legislation/regulations</td><td></td><td>The national goal has already been met, mainly through an almost total phase-out in industrial cleaning. This use area is supposed to pose the largest risk as emissions are high.</td><td></td></tr>
<tr><td>1.3b</td><td>Effectiveness of implementation of relevant HELCOM Recommendations</td><td></td><td></td><td></td></tr>
<tr><td>1.4a</td><td>Information on production, industrial and consumer uses of these substances, including relevant modes of applications</td><td></td><td>Existing use areas: polymerisation, paint, metal working liquids, textiles, industrial and institutional cleaning, impregnated and emulsion coated papers,agricultural pesticides, personal care products, contact adhesives. In 1997, 854 chemical products on the Swedish market contained NFE, out of which 132 were available for consumers.</td><td></td></tr>
<tr><td>1.5a</td><td>Information on relevant discharges, emissions and losses from point sources and diffuse sources</td><td></td><td>Discharges from municipalities calculated to 600-1000 tonnes/year (1989)</td><td></td></tr>
<tr><td>2.1a</td><td>Amount of import/export, production per year</td><td>ca. 2,303,000 kg NPE, mainly rocaphenol N8, used in industry as a raw material for production</td><td>Ca. 9,000 tons of NPE were produced in Sweden in 1997. Of these, 8,500 tons were exported as pure substance. The import of NFE, as a substance and in preparations, was 370 tons. The export of NFE in preparations was 240</td><td></td></tr>
<tr><td>2.2a</td><td>Amount of substances in imported chemical products, articles and goods</td><td></td><td></td><td></td></tr>
<tr><td>2.3a</td><td>Amount of sales per year, specified for each use and mode of application</td><td></td><td>
<table>
<tr><th>Use area</th><th>t/1990</th><th>t/1995</th><th>t/1997</th><th>t/1998</th></tr>
<tr><td>Polymerisation*</td><td>500</td><td>450</td><td>210</td><td>200</td></tr>
<tr><td>Paint and coatings</td><td>n.d.</td><td>200</td><td>92</td><td>13</td></tr>
<tr><td>Metal working liquids</td><td>n.d.</td><td>20</td><td>15</td><td>10</td></tr>
<tr><td>Industrial cleaning</td><td>2,400</td><td>25</td><td>5</td><td>2</td></tr>
<tr><td>Pulp & paper</td><td>n.d.</td><td>50</td><td>26</td><td>39</td></tr>
<tr><td>Pesticides</td><td>n.d.</td><td>4</td><td>8</td><td>11</td></tr>
<tr><td>Other uses</td><td>n.d.</td><td>100</td><td>24</td><td>25</td></tr>
<tr><td>Total</td><td>3,000-3,500</td><td>850</td><td>380</td><td>300</td></tr>
</table>
Source: Kemi Products Register. * including manufacturing of paint</td><td></td></tr>
<tr><td>2.4a</td><td>Amount of stockpiling and its treatment of substances banned or restricted in use</td><td></td><td></td><td></td></tr>
<tr><td>2.5a</td><td>Information on the amount of discharges to water/emissions to air and losses (from production, use, storage, transport and waste treatment) within the catchment area of the Baltic Sea</td><td></td><td></td><td></td></tr>
<tr><td>2.6a</td><td>Information on illegal or unidentified uses (indication on such uses can be obtained e.g. from monitoring data)</td><td></td><td></td><td></td></tr>
<tr><td>2.7a</td><td>Amount of administrative and financial resources needed for the implementation and supervision of measures described under question 1.1. It is intended to get at least some rough estimation on these costs.</td><td></td><td></td><td></td></tr>
</table>

Table II: 4-Nonylphenol (NP). Data provided by HELCOM's Contracting Parties.

No.	Question	Denmark	Estonia	Finland	Germany
1.1a	Legislation and other measures concerning chemical products	See NPEs.		4-Nonylphenol is not in use	At present, the use of NPl products is not banned or restricted.
1.1b	Ban of the production/use of the substance				
1.1c	Restricted use/import of the substance				
1.1d	Use of economic instruments, voluntary agreements etc.				
1.1e	Planned measures and activities for implementation				
1.2a	Regulation of industrial installations (permits). Please, indicate date of implementation of regulations.				
1.3a	Effectiveness of the implemented legislation/regulations				
1.3b	Effectiveness of implementation of relevant HELCOM Recommendations				
1.4a	Information on production, industrial and consumer uses of these substances, including relevant modes of applications				The main use of NP in the plastics industry is as a monomer in the production of phenol / formaldehyde resins. Other uses include as an intermediate in the production of tri (4-nonylphenyl) phosphite (TNPP) and as a catalyst in the curing of epoxy resins. To the knowledge of the NP producers NP is not used as a free additive in resins, plastics or stabilisers. There is a potential for consumer exposure due to the consumer use of epoxy resins. In 1997 the total amount of NP used in the polymer industry was reported by industry as 29,000 t. This was split between the various applications as follows: Phenolic resin production 22,500 t; TNPP production 4,000 t; Catalyst in epoxy resin production 1,500 t; Use in other plastic stabilisers 1,000 t. NP is used by one company within the EU to manufacture phenolic oximes, which are used as a reagent for the extraction and purification of copper from ore. The total quantity of NP used in this application is 2,500 t/a. All the phenolic oximes produced are exported to customers outside of the EU. Phenolic oximes are not thought to be used in the EU for this application.
1.5a	Information on relevant discharges, emissions and losses from point sources and diffuse sources				
2.1a	Amount of import/export, production per year				[t/a] Production volume in EU 73,500 Exports from EU 3,500 Imports into EU 8,500 Tonnage (Use in EU) 78,500
2.2a	Amount of substances in imported chemical products, articles and goods				
2.3a	Amount of sales per year, specified for each use and mode of application				
2.4a	Amount of stockpiling and its treatment of substances banned or restricted in use				
2.5a	Information on the amount of discharges to water/emissions to air and losses (from production, use, storage, transport and waste treatment) within the catchment area of the Baltic Sea				The calculation of the annual loads in the SMP was done as a projection on the basis of the annual wastewater quantity for the first half of 1999. At two of the three municipal STP almost all concentration values were below the respective limit of quantification. For one STP, there was a large number of positive findings for NP, from which an annual load of 0.502 kg/a could be determined.
2.6a	Information on illegal or unidentified uses (indication on such uses can be obtained e.g. from monitoring data)				
2.7a	Amount of administrative and financial resources needed for the implementation and supervision of measures described under question 1.1. It is intended to get at least some rough estimation on these costs.				

Tab. II (cont.): 4-Nonylphenol (NP). Data provided by HELCOM's Contracting Parties.

No.	Question	Latvia	Lithuania	Poland	Sweden	Rus
1.1a	Legislation and other measures concerning chemical products	not banned or restricted		not referred to in Polish law	According to Parcom Rec. 92/8 on NPE the use of NPEs as cleaning agents (for industrial use s) should be phased out by the year 2000.	
1.1b	Ban of the production/use of the substance			not banned		
1.1c	Restricted use/import of the substance			not restricted		
1.1d	Use of economic instruments, voluntary agreements etc.					
1.1e	Planned measures and activities for implementation					
1.2a	Regulation of industrial installations (permits). Please, indicate date of implementation of regulations.					
1.3a	Effectiveness of the implemented legislation/regulations					
1.3b	Effectiveness of implementation of relevant HELCOM Recommendations					
1.4a	Information on production, industrial and consumer uses of these substances, including relevant modes of applications	no production, no use			In 1997, 124 chemical products on the Swedish market contained NP. 16 of these were available for consumers	
1.5a	Information on relevant discharges, emissions and losses from point sources and diffuse sources				Discharges values from two Stockholm municipalities 0,45ug/l and 0.93 ug/l (1995)	
2.1a	Amount of import/export, production per year			about 265,000 kg used in industry as a raw material for production purposes	Production of NP in 1997 was approx 8,200 t. Of these, 3,000 t were exported. Approx. 85 t were imported as raw material or as a component in chemical products. 5,000 t were used for the production of NPEs. Only 20 t were directly included in chemical products.	
2.2a	Amount of substances in imported chemical products, articles and goods					
2.3a	Amount of sales per year, specified for each use and mode of application					
2.4a	Amount of stockpiling and its treatment of substances banned or restricted in use	no stockpiles				
2.5a	Information on the amount of discharges to water/emissions to air and losses (from production, use, storage, transport and waste treatment) within the catchment area of the Baltic Sea					
2.6a	Information on illegal or unidentified uses (indication on such uses can be obtained e.g. from monitoring data)					
2.7a	Amount of administrative and financial resources needed for the implementation and supervision of measures described under question 1.1. It is intended to get at least some rough estimation on these costs.					