

HELSINKI COMMISSION
Baltic Marine Environment Protection Commission



MERCURY

A compilation of the information given by the Contracting Parties with the focus on legislative situation, current uses, stockpiles and releases.

Working Document
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submitted by the Co-ordinator of the Project Team on Hazardous Substances

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This following data compilation is a working document, which will be updated when additional data are provided.

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Background

The HELCOM Project Team on Hazardous Substances is responsible for the implementation of the HELCOM objective with regard to Hazardous Substances. The objective 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 environment near background values for naturally occurring substances and close to zero for man-made synthetic substances. The corresponding substances selected for immediate priority action (Rec. 19/5, Attachment, Appendix 3) cover pesticides and biocides, metals and metal compounds and industrial substances. Mercury and its compounds is one of the heavy metals on this list.

The Project Team developed a questionnaire and sent it to the Contracting Parties to gather available information on sources, pathways and fate, and to get a survey on the legislative and the market situation.

The submitted document contains the data submitted by the Contracting Parties with regard to Mercury and its compounds.

Denmark

Mercury/compounds

No.	question	answer
ans1.1a	Legislation and other measures concerning chemical products	Legislation on marketing and export of mercury and products containing mercury has been in place since 1994. The latest edition is Order no. 692 of 22 September 1998. The Order is a general prohibition with exemptions. Main exemptions are for dental use of amalgam in molar teeth, batteries, electrolysis, some electric equipment and specialized technical equipment.
ans1.1b	ban of the production/use of the substance	Production and use is indirectly prohibited due to the marketing and export prohibition.
ans1.1c	restricted use/import of the substance	Use and import is indirectly prohibited due to the marketing and export prohibition.
ans1.1d	use of economic instruments, voluntary agreements etc.	No information available
ans1.1e	planned measures and activities for implementation	No information available
ans1.2a	Regulation of industrial installations (permits) Please, indicate date of implementation of regulations.	<p>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.</p> <p>Substance covered by statutory order 921 of 8. Oct. 1996 regarding quality criteria for aquatic compartments for certain hazardous substances in relation to emission from point sources.</p>
ans1.3a	Effectiveness of the implemented legislation/regulations	Campaigns by the chemical inspection: 1995: Ban on sale of shoes with LED blinking device containing mercury. 1996: No mercury thermometers were detected in a campaign. 1997: Ban on import and sale of paint with 0.5% mercury compounds. 1998: No batteries containing mercury were detected in a campaign. A farmer was caught in using seed corn treated with mercury.
ans1.3b	-also effectiveness of implementation of relevant HELCOM Recommendations	
ans1.4a	Information on production, industrial and consumer uses of these substances, including relevant modes of applications	Consumption of mercury in 1992-1993 was estimated at 6.4-9.5 t per year. The main applications are: electrolysis (2.5 t), dental purposes (1.8 t), batteries (0.4-0.9 t), monitoring equipment (0.5 t), electrical switches/relays and other uses (0.5-0.9 t). All uses are decreasing except for the use in electrolysis which is stagnating. Mercury is consumed as a contaminant in coal (0.5-1.3 t) and other uses as oil products, fertilizers, agricultural chalk and cement (0.1-1.7 t).
ans1.5a	Information on relevant discharges, emissions and losses from point sources and diffuse sources	<p>In 1998 from point sources 0.5 t/y to water (industrial plants and municipal STPs (average of 1993 and 1998)). To air 2 t/y in 1997.</p> <p>Emission to soil, air and water per year was in 1992-1993 estimated to 0.2-0.3 t, 1.9-2.5 t and 0.5 t respectively. The deposition of mercury from air to inner Danish water was estimated to 0.5 tons.</p>
ans2.1a	Amount of import/export, production per year	In 1992-1993 the import of mercury was estimated to 6.9-9.6 t and the was an export with commodities (0.6-0.7 t) and waste products + as metallic mercury (6.7-7.5 t). There is no production of mercury in Denmark.
ans2.2a	Amount of substances in imported chemical products, articles and goods	See 2.1a
ans2.3a	Amount of sales per year, specified for each use and mode of application	See 1.4a

- ans2.4a Amount of stockpiling and its treatment of substances banned or restricted in use There is a negative stock building of mercury in the Danish society of 3.1-7.9 t per year (1992-1993) See 1.4a for the reasons. The total stock of mercury in the Danish society was estimated to 100-300 tons in 1982-1983 and 50-250 tons in 1992-1993.
- ans2.5a 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 In 1998 from point sources 0.5 t/y to water (industrial plants and municipal STPs (average of 1993 and 1998). To air 2 t/y in 1997. Emission to air and water per year was in 1992-1993 estimated to 1.9-2.5 t and 0.5 t respectively. The main emission/loss to water was/is via municipal wastewater, from use of products (dental clinics and thermometers).
- ans2.6a Information on illegal or unidentified uses (indication on such uses can be obtained e.g. from monitoring data) Campaigns by the chemical inspection: 1995: Ban on sale of shoes with LED blinking device containing mercury. 1996: No mercury thermometers were detected in a campaign. 1997: Ban on import and sale of paint with 0.5% mercury compounds. 1998: No batteries containing mercury were detected in a campaign. A farmer was caught in using seed corn treated with mercury.
- ans2.7a 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. Part of normal control programme on chemicals, therefore difficult to estimate resources for only on e substance.

ESTONIA

The **Chemicals Act** providing the framework for this sector was adopted on **May 6,1998** and **amended on April 28,1999**.

Government Regulation No.6, January 5,1999 "The procedure for export and import of banned and severely restricted chemicals (EEC/2455/92)

Government Regulation No.36, January 26,1999 on fixing the list of active substances banned to use in Plant Protection Products.

International Regulations: Regulation of the Minister of Environment No.72, July 19,1999 sets controls on the use of mercury in batteries (EC Directives 91/157/EEC and 93/86/EEC)

Restrictions: The placing of batteries and accumulators containing more than **0.0005% of mercury** by weight and brought in our market before July 1, 2001.

Government Regulation No.99, 16 March, 1999 on ratifying the list of products dangerous to environment as waste, the production, import, export and use of which is prohibited.

Stockpiles: 11231 kg mercury contained pesticides stored as a dangerous waste (31.12.1999)

Releases to the environment.

H. Jankovski, M. Simm and O. Roots. 1996. Harmful substances in the Ecosystem of the Gulf of Finland. Estonian Marine Institute. EMI Report series, No. 4, 158 p. (ISBN 9985-9058-3-0).

O. Roots. 1999. The Effect of Environmental Pollution on Human Health in the Baltic States (Assessment and Regional Differences), Tallinn, 120 p (ISBN 9985-881-13-3) pp. 72-98. (Persistent organic pollutants and heavy metals. Assessment of health risks associated with the consumption of food).

Contaminants. Heavy Metals. 1996. HELCOM Proceedings No.64B, pp.144-153.

"State of Environment in Estonia on the threshold of XXI century". Under <http://www.envir.ee/itk/eng/index.html> further information concerning Hg emissions and concentrations in the Estonian environment can be found.

Finland

Mercury/compounds

No.	question	answer
ans1.1a	Legislation and other measures concerning chemical products	
ans1.1b	ban of the production/use of the substance	Mercury and its compound may not be imported nor used as substances and as constituents of preparations intended for use: - to prevent the fouling by microorganisms, plants or animals of certain subjects (Council of State Decision 1224/1992), - in the preservation of wood (Council of State Decision 1224/1992), - in the impregnation of heavy-duty industrial textiles and yarn intended for their manufacture (Council of State Decision 1224/1992, - in the treatment of industrial waters, irrespective of their use (Council of State Decision 1224/1992). - in plant protection products (Council of State Decision 1361/1996, HELCOM Recommendation 14/5)
ans1.1c	restricted use/import of the substance	The placing of batteries and accumulators containing more than 0.0005 % of mercury by weight on the market is prohibited. Button cells and batteries composed of button cells may contain mercury up to 2 % (Council of State Decision 17/1999 (replacing 105/1995), HELCOM Recommendation 14/5). The total concentration of Pb, Cd, Hg and Cr(VI) in packages must not exceed the limit values of 250 ppm as from 1.7.1999 and 100 ppm as from 1.7.2001 (Council of State Decision 962/1997).
ans1.1d	use of economic instruments, voluntary agreements etc.	No such means are in use for Hg
ans1.1e	planned measures and activities for implementation	Discussions with Hg-producers and waste treatment companies to improve the collection, treatment and disposal of Hg-waste will be initiated as a result of the recently finalised Nordic report.
ans1.2a	Regulation of industrial installations (permits). Please, indicate date of implementation of regulations.	For chlorine-alkali electrolysis industry, non-ferrous metal industry, the production of vinyl chloride, the production of mercury catalysts, the production of primary batteries and the production of organic and inorganic mercury compounds specific discharge limit values have been given. For other discharges into waters a permit from the Water Court is needed. The Water Court shall set discharge limit values based on best available technique (Council of State Decision 363/1994, HELCOM Recommendations 6/3, 16/5, 16/6 and 17/6). Direct and indirect releases into groundwater are prohibited (Council of State Decision 364/1994). The concentration of mercury in exhaust gases from incineration plants handling household wastes must not exceed the emission limit value of 0.05 mg/m ³ (new plants, plants that have started working after 1.12.1990) or 0.2 mg/m ³ (old plants). Old plants may exceed the given emission limits until 1.12.1995. As from 1.1.2007 they must fulfil the requirements set on new plants (Council of State Decision 626/1994). The concentration of mercury and its compounds in exhaust gases from incineration plants, measured as the average value over a sample period of a minimum of 30 min and a maximum of eight hours must not exceed the emission limit value of 0.05 mg/m ³ (new plants) or 0.1 mg/m ³ (old plants) (Council of State Decision 842/1997). Waste water from dental clinics may be discharged into the public sewer system or into waters only after an amalgam separator. The amalgam separator must have a separation efficiency of at least 95 % (Council of State Decision 112/1997, HELCOM Recommendation 6/4). Sludge from waste water treatment plants may be used as fertilizers in agriculture only if the concentration of mercury in the pretreated sludge is under 1 mg/kg dry weight. The Hg-concentration in agricultural soil where sludge is used may not

		exceed 0.2 mg / kg (Council of State Decision 282/1994).
ans1.3a	Effectiveness of the implemented legislation/regulations	The HELCOM Recommendations 13/4 on avoiding Hg in all products that can end up as scrap and 16/10 banning the use of Hg containing biocides in the textile industry have not been implemented in national legislation as such. However, no biocides containing Hg is in use according to the product register. No reported data on violations of existing national legislation is available.
ans1.3b	-also effectiveness of implementation of relevant HELCOM Recommendations	
ans1.4a	Information on production, industrial and consumer uses of these substances, including relevant modes of applications	In 1987 the total use of Hg was estimated to be between 19 and 25 tons/year. In 1991 the total use had decreased by about 50 % (Kemikaaliedote Elohopeasta (Data sheet on Hg published by Finnish Environment Institute 1995).
ans1.5a	Information on relevant discharges, emissions and losses from point sources and diffuse sources	In 1987 the total emissions of Hg was estimated to be about 10 tons/year. In 1992 the estimated total emissions had decreased to about 6 tons (2 tons to the air, 0.15 tons to the waters and about 3.7 tons to the soil (including waste) (Kemikaaliedote Elohopeasta (Data sheet on Hg published by Finnish Environment Institute 1995). According to an investigation in the late 90's about 2.5 tons of Hg was collected in Hg-waste each year. A major part of this (1.65-1.85 tons) was consumer waste ('Treatment and Disposal of Mercury Waste' TemaNord-report, Nordic Council of Ministers 1999). According to some newer calculations based on measured values from some point sources and more general emission factors and mass balances the total Hg-emissions to the air from industry, energy production and waste treatment was in 1990 over 1.1 tons and in 1997 about 0.62 tons (Matti Melanen & al.: 'Raskasmetallien päästöt ilmaan Suomessa 1990-luvulla', Suomen ympäristö 329, 1999).
ans2.1a	Amount of import/export, production per year	Today about 150 kg Hg is produced and mostly exported each year as a by-product from zinc production. In the beginning of the 90's the production was over 1000 kg Hg/year. A small amount of the production and export comes also from recovery of Hg from dental amalgam waste ('Treatment and Disposal of Mercury Waste' TemaNord-report, Nordic Council of Ministers 1999).
ans2.2a	Amount of substances in imported chemical products, articles and goods	In the product register there are 15 products containing Hg. The products are either metallic mercury and products for dental care or industrial materials containing small amounts of mercury as a contaminant. In the register there are also 24 products, which contain different Mercury compounds. Of these 17 were laboratory chemicals, 6 contained (neodecanoato-o)-phenyl-mercury used in polymer production and one product used for unknown purposes contains a small amount of di-mercury-dichloride. The product register contains only data on chemical products and there is no data on articles and goods.
ans2.3a	Amount of sales per year, specified for each use and mode of application	There is no information on the amounts of the registered chemicals in the product register.
ans2.4a	Amount of stockpiling and its treatment of substances banned or restricted in use	About 60 tons of mercury is in use at one chlorine-alkali plant, which will be closed at the latest by year 2010. In addition batteries containing mercury are temporarily stored at the treatment plant for hazardous waste ('Treatment and Disposal of Mercury Waste' TemaNord-report, Nordic Council of Ministers 1999). Mercury is extracted from amalgam waste at one plant. The recovered mercury is put on the market. Fluorescent lamps containing mercury are treated on three plants. The mercury from these plants and small amounts of the mercury waste is converted to and landfilled on special depots as mercury sulphide ('Treatment and Disposal of MercuryWaste' TemaNord-report, Nordic Council of Ministers 1999).
ans2.5a	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	See answer to question 1.5.
ans2.6a	Information on illegal or unidentified uses	No estimation available.

(indication on such uses can be obtained
e.g. from monitoring data)

ans2.7a 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. The administration is handled by general environmental and health authorities and no special resources have been allocated for mercury. A few scientific and administrative reports have occasionally been produced by temporary project groups.

Germany

Mercury/compounds

No.	question	answer
ans1.1a	Legislation and other measures concerning chemical products	<p>National Regulations: Executive order (chemical act, part 9) bans the use and marketing of mercury - compounds in antifouling paints, wood protection impregnation of heavy textiles and water treatment. The introduction of mercury is subject to a charge levied under the Waste Water Charges Act. The Waste Water Charges Act was enacted on 13/9/76 (BGBl. I, p. 2721, amended p. 3007), came into force on 1/1/78, and provides for the levying of charges as of 1/1/81. The act was last amended on 6/11/90 (BGBl. I, p. 2432). Batteries Ordinance, which came into force in April 1998. Manufacturers now assume total responsibility for their products, via a new system for collection return, which requires new disposal methods in keeping with the Waste Recovery and Recycling Act. On 1/7/92, a revised Sewage Sludge Ordinance (Klärschlammverordnung, BGBl. I p.912) came into effect. The revision was necessary in order to alter the limits for heavy metals to take account of new scientific knowledge, and in order to include extraordinary regulations to deal with the pollution caused by sewage sludge containing organic pollutants. In addition, the regulations had to be harmonised with EC guidelines. Federal Executive Order on the use of plant protection products (Bundesverordnung zur Pflanzenschutzanwendung) of 27. 7. 1988. The use of mercury-organic compounds as biocides against micro-organisms and as a seed disinfectant has been banned in Germany.</p> <p>International Regulations: EC Directive 91/157/EEC sets controls on the use of mercury in batteries. Directive 79/117/EEC on phasing out the marketing and use of pesticides containing mercury compounds or certain other substances. EC IPPC Directive has been adopted by EC Member States and countries in the European Economic Area. This sets out a general framework for integrated pollution prevention and control for specified activities/sectors (including most of those listed above cited as sources of mercury) and is developing BAT Reference Documents (BREF notes), which specify what is regarded as being BAT for these sectors. Source: IRPTC Database; Draft OSPAR Background Document on Mercury (1999).</p>
ans1.1b	ban of the production/use of the substance	
ans1.1c	restricted use/import of the substance	
ans1.1d	use of economic instruments, voluntary agreements etc.	<p>1. OSPAR Decisions and recommendations: PARCOM Decision 90/2 on Programmes and Measures for Mercury and Cadmium-Containing Batteries lays down various measures dealing with the recovery, disposal and marketing and use of certain mercury and cadmium batteries. PARCOM Recommendation 89/3 has proposed measures on restricting the use of biocides and pesticides containing mercury. PARCOM Recommendation 89/3 has proposed measures on recycling mercury used in electrical equipment and encouraged the use of equipment not containing mercury whenever replacements become available at comparable costs. Some Contracting Parties have reported that they have taken action, or are intending to take action, regarding some electrical equipment. OSPAR has drawn up measures for the control of discharges to water and atmospheric emissions from mercury cell chlor-alkali plants. These are listed below:</p>

* PARCOM Decision on Limit Values for Mercury Emissions in Water from Existing and New Brine recirculation Chloralkali Plants (exit of purification plant) 1978
 * Adoption of a Standstill Principle for mercury concentrations in water, 1980
 * PARCOM Recommendations on Other Land-Based Sources of Mercury (1981 and 1982)
 * PARCOM Decision on Limit Values for Existing Brine Recirculation Chlor-alkali Plants, 1981
 * PARCOM Decision on Limit Values for Existing Waste Brine Chlor-alkali Plants, 1981
 * PARCOM Decision on New Chlor-alkali Plants using Mercury Cells, 1982
 * PARCOM Recommendation on Limit Values for Mercury Emissions in Water from Existing Brine recirculation Chlor-alkali Plants (exit of factory site) 1985
 * PARCOM Decision 90/3 on Reducing Atmospheric Emissions from Existing Chlor-alkali Plants
 Source: Draft OSPAR background document on Mercury (1999)

- ans1.1e planned measures and activities for implementation
- ans1.2a Regulation of industrial installations (permits) Please, indicate date of implementation of regulations.
- ans1.3a Effectiveness of the implemented legislation/regulations
- ans1.3b -also effectiveness of implementation of relevant HELCOM Recommendations
- ans1.4a Information on production, industrial and consumer uses of these substances, including relevant modes of applications
- ans1.5a Information on relevant discharges, emissions and losses from point sources and diffuse sources

The following information has been extracted from a Draft OSPAR Background Document on Mercury and Organic Mercury Compounds (1999) prepared by the UK.

Global sources of atmospheric mercury.

In order to put the anthropogenic emissions, discharges emissions and losses mercury into perspective, and to acknowledge that mercury from natural sources will also be deposited in the Convention Area, an estimation of the global sources of mercury is given in the following Table, where natural sources are compared with the major anthropogenic sources.

Tab.: Comparison of Anthropogenic and Natural Sources of Atmospheric Mercury Emissions

Quantity emitted to atmosphere (t a ⁻¹)			
Natural sources		Anthropogenic sources	
Windblown dust	50	Coal combustion	2,100
Seasalt spray	20	Lead production	10
Volcanoes	1,000	Copper/nickel production	120
Forest fires	20	Refuse incineration	1,200
Continental particulates	20	Fuel wood combustion	180
Continental volatiles	610		
Marine sources	770		
Total	2,500	Total	3,600

Emissions and Discharges from Industrial Activity.

The following industry sectors have been identified in various UK reports as having the potential to release mercury to the environment:

- by-product coke production
- carbon black production
- cement manufacture
- chlor-alkali production
- iron and steel production
- lime manufacture
- paper and pulp industry
- petroleum refining
- phosphate production
- primary lead and zinc smelting
- secondary mercury production
- titanium dioxide manufacture
- power generation by fuel oil combustion
- processing of and power generation from natural gas
- wood combustion
- power generation by coal combustion

Emissions and Discharges from the Use of Mercury in Products

Mercury can also enter the environment from the intentional use of mercury in products. The main product sources are as follows:

- * dental amalgam;
- * batteries;
- * biocides, pesticides and fertilisers;
- * industrial and control instruments;
- * laboratory and medical instruments;
- * lighting appliances.

Mercury in Waste Streams

Mercury will also occur in the following waste streams (although a large part of what enters these waste streams is most likely to arise originally from products and industrial sources):

- * municipal solid waste (MSW);
- * clinical waste;
- * sewage sludge;
- * crematoria;
- * agricultural manure;
- * contaminated sediments/dredged spoil.

Mercury Deposited as Waste

Mercury occurs in the waste products arising from a number of industries and industrial processes. The risks of mercury to the environment are well-known and the wastes are generally put into landfills which are subject to special conditions and controls to ensure that mercury does not leach into the environment. The main industries concerned in the UK are:

- * Chlor-alkali production
- * Paper and pulp industry
- * Phosphate production
- * Primary lead and zinc smelting
- * Coal-fired power stations
- * Industrial coal combustion
- * Domestic coal combustion

Transboundary Sources of Mercury

It has been identified that mercury can travel for substantial distances in the atmosphere and in the UNECE LRTP work on Heavy Metals is currently addressing this issue. It is therefore very likely that mercury originating from non-OSPAR countries will constitute a significant source of mercury to the OSPAR maritime area. Also, natural sources of mercury are likely to enter the maritime area by the transboundary route.

ans2.1a	Amount of import/export, production per year	
ans2.2a	Amount of substances in imported chemical products, articles and goods	
ans2.3a	Amount of sales per year, specified for each use and mode of application	
ans2.4a	Amount of stockpiling and its treatment of substances banned or restricted in use	
ans2.5a	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	As part of HELCOM the pollution load data in the Baltic Sea are compiled approximately every years, the so-called Pollution load Compilations - PLC's, which differentiate between loads via rivers, from coastal areas and direct point discharges into the Baltic Sea. The results of PLC- 3 (1995) established that the pollution loads from direct and diffuse sources, approximately 90 % of which occur via the Baltic inlets, must be quantified in the entire Baltic Sea catchment area in order to be able to show the main sources of pollution load. For these reasons a research project was carried out establishing an Emission inventory of the German Baltic Sea catchment area (Research Project: E297 25 527). In the frame work of this project, the point pollution loads in the whole German Baltic catchment area were registered for 1998. The investigated wastewater sources (13 municipal wastewater treatment plants and 13 industrial discharges) were selected, because the data acquired were suitable to act as the basis for balance statement of the pollution load of the entire German Baltic Sea catchment area. To assess the amount of pollution from the German Baltic Sea catchment area into the Baltic, sampling was carried out also in different German Baltic inlets (Oder, Lausitz Neisse, Trave and Warnow).The presence of numerous substances of the HELCOM list of selected substances for immediate priority action could be identified.

Mercury was only quantified in industrial waste water and the total emission was 0.010 kg/a in 1998.

Tab.: Point source discharges of Mercury in the entire German Baltic Sea Catchment Area [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
0.01	< LQ	0.01	0.012	< LQ	0.012

*STP = waste water treatment plants

LQ = limit of quantification

1) Point sources in Mecklenburg - Western Pomerania and Schleswig Holstein

2) Point sources in Brandenburg and Saxony

However the major part of heavy metal loads is carried into the Baltic Sea via the rivers, the pollution being caused by point and diffuse sources in the respective riverine area. Owing to the fact that the heavy metal loads are only captured as emissions up to the tested rivers measurement stations (MS), the municipal and industrial STP and industries downstream from these MS must be taken into account.

Tab.: Mercury loads in rivers 1998 (t/a):

Lausitz/Neisse (Dreiländereck)	Lausitz/Neisse Ratzdorf	Oder Frankfurt	Oder Hohenwautzen	Warnow	Trave
< LQ	< LQ	0.641	0.849	< LQ	< LQ

LQ = limit of quantification

It should be noted though, that heavy metal loads are also due to natural background loads and not only due to anthropogenic sources.

- ans2.6a Information on illegal or unidentified uses (indication on such uses can be obtained e.g. from monitoring data)
- ans2.7a 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.

Latvia

No.	Cas-No.	Substance
1.	7439976/n.a	Mercury/compounds

Is the substance registered/licensed for	No info available	No	Yes	Date of registration or licensing	Amounts [t/a]	
					use	production
plant protection use		+				
use as wood preservative		+				
use as disinfectant		+				
use in antifouling		+				
other biocide uses		+				
use as industrial chemical			+	07.01.99.,15.12.99	laboratory use only	

Is the substance legally banned for	No info available	No	Yes	Date of ban	Legal act	Exemptions
production		+				
import			+	25.03.2000.	Regulations of Cabinet of Ministers No. 107 (21.03.2000.) "On prohibited plant protection products"	Other uses, except plant protection products
marketing and use			+	25.03.2000.	Regulations of Cabinet of Ministers No. 107 (21.03.2000.) "On prohibited plant protection products"	Other uses, except plant protection products

Is the substance subject to any other legal act?	No info available	No	Yes	Legal act
			+	Regulations of Cabinet of Ministers No. 158 (25.04.2000.) "Restrictions and bans on use and marketing of some dangerous chemical substances and dangerous chemical products"

Is the substance	No info available	No	Yes	Amounts [t/a]
still used in your country?			+	
released to the environment?				
stockpiled?			+	

Is stockpiling a problem?	No info available	No	Yes, due to
		+	Leakage
			Disposal facilities
			Identification
			Other reasons

Do less hazardous substances for same purposes exist?	No info available	No	Yes, but not used because
	+		lack of knowledge
			too expensive
			other reasons

Lithuania

Mercury/compounds

No.	question	answer
ans1.1a	Legislation and other measures concerning chemical products	Mercury/compounds are not registered as pesticides
ans1.1b	ban of the production/use of the substance	<ol style="list-style-type: none">1. Hygienic standards 36:1999. Banned and restricted substances. Mercury compounds may not be used as substances and constituents of preparations intended to use for: prevention of fouling by microorganisms, plants or animals of:<ul style="list-style-type: none">- the hulls of boats- cages, floats, nets and any other appliances or equipment used for fish or shellfish farming,- any totally or partly submerged appliances or equipment, in the preservation of wood,in the impregnation of heavy-duty industrial textiles and yarn intended for their manufacture,in the treatment of industrial waters, irrespective of their use.2. Governmental Resolution No 452 of 21.07.1999 On licensing of dangerous chemicals produce, trade and storage.3. Hygienic standards 63:1996. Banned and restricted pesticides. Import, production and use of mercury/compounds as pesticides are banned.
ans1.1c	restricted use/import of the substance	<ol style="list-style-type: none">1. Governmental Resolution No 452 of 21.07.1999 On licensing of dangerous chemicals production, trade and storage. For the production, trade and storage of mercury/compounds - mercury alkyl compounds, mercuric oxide, mercuric chloride, others inorganic mercury compounds – it is necessary to receive a licence from the Ministry of Environment from 01.10.1999.2. Governmental Resolution No 718 of 19.05.1995 On the limitation of import, export and transit via the Republic of Lithuania of certain articles (goods).3. Order of the Ministry of Environment No 292 of 31.12.1998 On regulations of issuing permits for import and export from and into the Republic of Lithuania of dangerous chemical substances. For import and export of mercury, mercury acetate, mercury ammonium chloride, mercuric arsenate, mercury benzoate, mercury bromides, mercuric chloride, mercury cyanide, mercury gluconate, mercury iodide, mercury compounds, liquid and solid, n.o.s., mercury II nitrate, mercury I nitrate, mercury nucleate, mercury oxycyanide, desensitized, mercury oxide, mercury oleate, mercury salicylate, mercury sulphate, and mercury thiocyanate, it is necessary to receive a permit from the Ministry of Environment.4. Hygienic standards 36:1999. Banned and restricted substances.5. The Prior Informed Consent (PIC) procedures and regulations will be implemented in 2003.6. General requirements for waste incineration. LAND 19-99.7. Maximum content of Hg in wastewater is regulated by wastewater Pollution Standards 'Land - 10', 1998.8. Maximum content of Hg in wastewater sludge is regulated by Standards of Wastewater Sludge Use 'Land - 20, 1996.9. Law on Waste Management.
ans1.1d	use of economic instruments, voluntary agreements etc.	Law on pollution charges. The draft on this law is foreseeing the introduction of product charge.
ans1.1e	planned measures and activities for implementation	The Prior Informed Consent (PIC) procedures and regulations will be implemented in 2003 year.
ans1.2a	Regulation of industrial installations (permits) Please, indicate date of implementation of regulations.	
ans1.3a	Effectiveness of the implemented legislation/regulations	
ans1.3b	-also effectiveness of implementation of relevant HELCOM Recommendations	
ans1.4a	Information on production, industrial and consumer uses of these substances,	see table conc. consumption [t/y]

including relevant modes of applications

Tab.: Consumption (in t/year)

Combustion activities	1980	1990	1995	1996	1997	1998
Large Combustion plants						
natural gas	no info.	181770	57119	59975	56290	45324
Small appliances						
coal		1252000	349000	318500	248000	212900
wood combustion		547200	754400	882800	1751600	1942400
light source (in 10 ⁶ units per year)						
fluorescent		no info	no info	no info	no info	1.8
mercury vapour high pressure batteries (t.u.)				9886 (product.)	2364 (sales in domestic market)	0.16

ans1.5a Information on relevant discharges, emissions and losses from point sources and diffuse sources

Tab.: Emissions of mercury [kg/a]

Emission of Hg [kg/a]	1990	1995	1996	1997	1998
Combustion activities	307.34	146.82	154.60	228.24	239.31
Large Combustion plants					
natural gas	27.26	8.56	8.99	8.44	-
Small appliances	27.26	8.56 (12)	8.99	8.44	6.799
coal	280.08	138.26	145.61	219.8	232.56
wood combustion	225.36	62.82	57.33	44.64	38.32
	54.72	75.44	88.28	175.16	194.24

Eight (8) companies are involved in collection of mercury containing electrical equipment. Recovery is performed by company "Lampu Demerkurizācijas Centrs" Latvia in line with the agreement of Lithuania and Latvian Governments and the contracts between the companies. According to the Hazardous waste Management Programme adopted by Governmental Resolution No 761 dated June 9, 1999 a sufficiently suitable mercury-containing waste management system will be in place till the end of 2000.

- ans2.1a Amount of import/export, production per year
 Import/export (t/year):
 1998 batteries (t.u.)
 medical and industrial thermometers: 69.2 / 0.8
 597737 / 248608
- ans2.2a Amount of substances in imported chemical products, articles and goods
- ans2.3a Amount of sales per year, specified for each use and mode of application
- ans2.4a Amount of stockpiling and its treatment of substances banned or restricted in use in farms' storages in the Republic of Lithuania
 At present there are 19045 kg of granozan (2% Hg)
- ans2.5a 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
 see answer 1.5a
- ans2.6a Information on illegal or unidentified uses (indication on such uses can be obtained e.g. from monitoring data)
- ans2.7a 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.

Poland

Mercury/compounds

No.	question	answer
ans1.1a	Legislation and other measures concerning chemical products	Act of 21 May 1963 on toxic substances Executive Order of the Minister of Health and Social Welfare of 28 Dec. 1964 on the list of poisons and harmful substances Executive Order of the Minister of Health and Social Welfare of 10 Feb. 1964 on permissions for production and trade of poisons, poisons' records and rules of procedure of supervising bodies on poisons Act of 27 June 1997 on wastes Executive Order of the Council of Ministers of 17 Dec. 1996 on Fees for Economic Use of the Environment Executive Order of the Minister of Environmental Protection, Natural Resources and Forestry of 12 Feb. 1990 on Air Protection against Pollution Executive Order of the Council of Ministers of 19 May 1999 on Conditions of Waste Water Discharges into Municipal Sewerage Facilities Executive Order of the Minister of Environmental Protection, Natural Resources and Forestry of 11 Aug. 1999 on the Conditions of using Sewerage Sludge for Non-Industrial Purposes Executive Order of the Minister of Economy of 19 Feb 1999 on Chemical Substances Dangerous for Health and Life
ans1.1b	ban of the production/use of the substance	not banned
ans1.1c	restricted use/import of the substance	partly - production, import and selling under special permissions, with exceptions for scientific institutions (only for scientific research purposes)
ans1.1d	use of economic instruments, voluntary agreements etc.	no information available
ans1.1e	planned measures and activities for implementation	no information available
ans1.2a	Regulation of industrial installations (permits) Please, indicate date of implementation of regulations.	concentration of mercury in waste water discharged to sewerage systems shall not exceed 0.1 mg Hg/dm ³ , concentration of mercury in sewage sludges for non-industrial purposes shall not exceed 5-25 mg/kg d.w. (up to 5-eg. agriculture, up to 25 mg - e.g. plant land restoration), maximum average air concentration shall not exceed: 0.3 i g/m ³ in 24 h and 0.04 i g/m ³ a year (on specially protected areas: 0.1 and 0.02 accordingly)
ans1.3a	Effectiveness of the implemented legislation/regulations	no information available
ans1.3b	-also effectiveness of implementation of relevant HELCOM Recommendations	partly implemented
ans1.4a	Information on production, industrial and consumer uses of these substances, including relevant modes of applications	The sector of chlorine production by means of the method of electrolysis of alkaline metal chlorides is one of the basic industrial branches in Poland where considerable amounts of mercury are used. Production of chloride in Poland nowadays exceeds 300 thousands tonnes per year. There are 3 units of mercury electrolysis and 2 of them are of the same type (there are also several smaller units where diaphragm, mercury-free method is applied). At a same time there are reports stating that only 2 units remains, cause in the third one chlorine production has been terminated but this information should be further verified. The plants may be described as follows: <ul style="list-style-type: none">Plant 1: Actual production does not exceed 30 % of production capacity. Chlorine was and still is used as a basic material for further synthesis of various chemicals. Due to market changes and decrease of demands some types of production were given up. The durability of electrolyzers is almost finished and the company does not

consider the necessity and possibility to reconstruct them and transform the technology into mercury-free. If additional market opportunities do not appear, it is possible that production of chlorine in this plant will be terminated within coming years.

- Plant 2: Production is decreasing and is expected to reach about 18 thousand tonnes chlorine per year (plant's own demands for further synthesis).
- Plant 3: Newer and more modern installation. Production capacity equals to about 160 thousands tonnes per year.

Costs of conversion the technology from the mercury method into membrane processes (BAT at present) are estimated for 15-65 mill. USD per each unit. The overall load of mercury from the chloralkali industry equals to about 210 kg per year.

ans1.5a	Information on relevant discharges, emissions and losses from point sources and diffuse sources	no information available
ans2.1a	Amount of import/export, production per year	no information available
ans2.2a	Amount of substances in imported chemical products, articles and goods	no information available
ans2.3a	Amount of sales per year, specified for each use and mode of application	no information available
ans2.4a	Amount of stockpiling and its treatment of substances banned or restricted in use	no information available
ans2.5a	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	total emission to air: 32,900 kg from industry, 100 kg from waste treatment; discharges to water: 488,93 kg from chemical industry total riverine load discharged to the Baltic Sea in 1998: 19,740 kg
ans2.6a	Information on illegal or unidentified uses (indication on such uses can be obtained e.g. from monitoring data)	no information available
ans2.7a	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 information available

Russia

Cas-No. 7439976

Mercury

Is the substance registered/licensed for	No info available	No	Yes	Date of registration or licensing	Amounts [t/a]	
					Use	Production
Plant protection use		+				
Use as wood preservative		+				
Use as disinfectant		+				
Use in antifoulings		+				
Other biocide uses		+				
Use as industrial chemical			+	28.02.1996. number of registration is AT 000876		

Is the substance legally banned for	No info available	No	Yes	Date of ban	Legal act	Exemptions
Production		+			Russian register of the most potential dangerous chemical and biological substances. The toxicology bulletin Magazine.	
Import		+				
Marketing and use		+				

Is the substance subject to any other legal act?	No info available	No	Yes	Legal act
	+			

Is the substance	No info available	No	Yes	Amounts [t/a]
Still used in your country?			+	
Released to the environment?			+	
Stockpiled?			+	

Is stockpiling a problem?	No info available	No	Yes, due to
	+		Leakage
			Disposal facilities
			Identification
			Other reasons

Do less hazardous substances for same purposes exist?	No info available	No	Yes, but not used because
	+		Lack of knowledge
			Too expensive
			Other reasons

Sweden

Mercury/compounds

No.	question	answer
ans1.1a	Legislation and other measures concerning chemical products	
ans1.1b	ban of the production/use of the substance	The professional manufacturing and sale of mercury thermometers and other measuring instruments, level switches, pressure switches, thermostats, relays and electrical contacts has been banned since 1 January 1993. The products may only be used if they were in use in Sweden before 1 January 1995. Some exemptions exist for spare parts. The products may not be professionally imported from countries which are not members of the European Union. The products may not be professionally exported from Sweden. Mercury and chemical compounds containing mercury may not be professionally exported from Sweden. (Ordinance 1998: 944 Prohibition in Certain Cases in Connection with Handling, Import and Export of Chemical Products) The use of batteries is regulated through the EEC Directive on Batteries. A permit is required for professional imports of mercury from countries not being members of the European as well as for professional transfer, as the substance is classified as toxic. (Chemical Products and Biotechnical Organisms Ordinance 1998: 941).
ans1.1c	restricted use/import of the substance	
ans1.1d	use of economic instruments, voluntary agreements etc.	n.a
ans1.1e	planned measures and activities for implementation	The government is considering an extension of the present ordinance to also comprise: * a ban on the sale and use of mercury and chemical compounds containing mercury light sources, * maximum mercury content limits for the sale of light sources * a time limit (31 December 2009) for the use of mercury in chloralkali industry.
ans1.2a	Regulation of industrial installations (permits) Please, indicate date of implementation of regulations.	The Environmental Code, January 1,1999
ans1.3a	Effectiveness of the implemented legislation/regulations	Total annual sale of mercury in goods was about 2 tonnes in 1997. This is approx. 25 % of the sale in 1991/92 and 60 % of the sale in 1995.
ans1.3b	-also effectiveness of implementation of relevant HELCOM Recommendations	n.a
ans1.4a	Information on production, industrial and consumer uses of these substances, including relevant modes of applications	see 2.3
ans1.5a	Information on relevant discharges, emissions and losses from point sources and diffuse sources	to the (Baltic Sea; riverine transport 0.73 t/y (1995), industry 0.07 t/y (1990), coastal industries 0.05 t/y (1998), municipalities 0.2 t/y (1998). A medium value for a Stockholm municipality was 0.03 ug/l (1999).

Tab.: Emissions of mercury by point sources to air [t/y].

Branch	1985	1988	1990	1995	Reduction [%] (1985-1995)
Mines	0.2	0.1	0.04	0.01	95
Metal works	1.0	0.4	0.25	0.07	93
Iron/steel work	0.7	0.2-0.7	0.27	0.11	84
Chloralkali ind.	0.4	0.3	0.2	0.12	70
Coal/wood incineration	0.2	0.3	0.21	0.10	50
Oil incineration		0.01		0.10	
Waste incineration	1.5	0.8	0.2-0.25	0.09	94
Crematories	0.3	0.3	0.3	0.28	7

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ans2.1a	Amount of import/export, production per year	n.a.														
ans2.2a	Amount of substances in imported chemical products, articles and goods	n.a.														
ans2.3a	Amount of sales per year, specified for each use and mode of application	<p>Estimated use in goods 1997:</p> <table border="0"> <tr> <td>Amalgam</td> <td>980 kg</td> </tr> <tr> <td>Batteries</td> <td>800 kg</td> </tr> <tr> <td>Light sources</td> <td>150 kg</td> </tr> <tr> <td>Chemical products</td> <td>45 kg</td> </tr> <tr> <td>Equipment</td> <td>30 kg</td> </tr> <tr> <td>Porosimeters</td> <td>9 kg</td> </tr> <tr> <td>Thermometers</td> <td>0,2 kg</td> </tr> </table> <p>In use in chloralkali industry: approx. 360 tonnes.</p>	Amalgam	980 kg	Batteries	800 kg	Light sources	150 kg	Chemical products	45 kg	Equipment	30 kg	Porosimeters	9 kg	Thermometers	0,2 kg
Amalgam	980 kg															
Batteries	800 kg															
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Chemical products	45 kg															
Equipment	30 kg															
Porosimeters	9 kg															
Thermometers	0,2 kg															
ans2.4a	Amount of stockpiling and its treatment of substances banned or restricted in use	Unidentified storage (equipments etc still in use) expected to 100 tonnes. 1800 tonnes collected batteries stored pending decisions on final treatment.														
ans2.5a	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	see 1.5														
ans2.6a	Information on illegal or unidentified uses (indication on such uses can be obtained e.g. from monitoring data)	n.a														
ans2.7a	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.	not estimated														