Annex F Questionnaire (one per chemical)

Chemical name (as used by the POPs Review Committee (POPRC))	**Lindane**

Explanatory note:

1. This chemical is undergoing a risk management evaluation. It has already satisfied the screening criteria set out in paragraph 4 (a) of Article 8 of the Convention. A risk profile has also been completed for this chemical in accordance with paragraph 6 of Article 8 and with Annex E to the Convention.

Introductory information	
Name of the submitting Party/observer	**Switzerland**
Contact details (name, telephone, e-mail) of the submitting Party/observer	**Federal Office for the Environment** **Substances, Soil and Biotechnology Division** **Contact: Bettina Hitzfeld / Georg Karlaganis** **bettina.hitzfeld@bafu.admin.ch / georg.karlaganis@bafu.admin.ch** **+41 31 32 31768**
Date of submission	**6 February 2007**

Additional Annex E information	
(i) Production data, including quantity and location	**No production**
(ii) Uses	**The only allowed use of any hexachlorocyclohexane isomer is gamma hexachlorocyclohexane (lindane) for medicinal purpose.**
(iii) Releases, such as discharges, losses and emissions	**No known releases.** **Exception: some releases of traces of Lindane from old dump sites of the Chemical Industry near Basel (see also point G)**

Explanatory note:

2. This information was requested for preparation of the risk profile in accordance with Annex E of the Convention. The POPRC would like to collect more information on these items. If you have additional or updated information, kindly provide it.

A. Efficacy and efficiency of possible control measures in meeting risk reduction goals (provide summary information and relevant references):	
(i) Describe possible control measures	
(ii) Technical feasibility	
(iii) Costs, including environmental and health costs	

Explanatory notes:

3. If relevant, provide information on uses for which there may be no suitable alternative or for which the analysis of socio-economic factors justify the inclusion of an exemption when considering listing decisions under the Convention. Detail the negative impacts on society that could result if no exemption were permitted.

4. "Risk reduction goals" could refer to targets or goals to reduce or eliminate releases from intentional production and use, unintentional production, stockpiles, wastes, and to reduce or avoid risks associated with long-range environment transport.

5. Provide the costs and benefits of implementing the control measure, including environmental and health costs and benefits.

6. Where relevant and possible "costs" should be expressed in US dollars per year.

B. Alternatives (products and processes) (provide summary information and relevant references):	
(i) Describe alternatives	
(ii) Technical feasibility	
(iii) Costs, including environmental and health costs	
(iv) Efficacy	
(v) Risk	
(vi) Availability	
(vii) Accessibility	

Explanatory notes:

7. Provide a brief description of the alternative product or process and, if appropriate, the sector(s), use(s) or user(s) for which it would be relevant.

8. If several alternatives could be envisaged for the chemical under consideration, including non-chemical alternatives, provide information under this section for each alternative.

9. Specify for each proposed alternative whether it has actually been implemented (and give details), whether it has only reached the trial stage (again, with details) or whether it is just a proposal.

10. The evaluation of the efficacy should include any information on the performance, benefits, costs, and limitations of potential alternatives.

11. Specify if the information provided is connected to the specific needs and circumstances of developing countries.

12. The evaluation of the risk of the alternative should include any information on whether the proposed alternative has been thoroughly tested or evaluated in order to avoid inadvertently increasing risks to human health and the environment. The evaluation should include any information on potential risks associated with untested alternatives and any increased risk over the life-cycle of the alternative, including manufacture, distribution, use, maintenance and disposal.

13. If the alternative has not been tried or tested, information on projected impacts may also be useful.

14. Information or comments on improving the availability and accessibility of alternatives may also be useful.

C. Positive and/or negative impacts on society of implementing possible control measures (provide summary information and relevant references):	
(i) Health, including public, environmental and occupational health	
(ii) Agriculture, including aquaculture and forestry \	
(iii) Biota (biodiversity)	
(iv) Economic aspects	
(v) Movement towards sustainable development	
(vi) Social costs	

Explanatory notes:

15. Socio-economic considerations could include:

- Any information on the impact (if any), costs and benefits to the local, national and regional economy, including the manufacturing sector and industrial and other users (e.g., capital costs and benefits associated with the transition to the alternatives); and impacts on agriculture and forestry;
- Any information on the impact (if any) on the wider society, associated with the transition to alternatives, including the negative and positive impacts on public, environmental, and occupational health. Consideration should also be given to the positive and negative impacts on the natural environment and biodiversity.

- Information should be provided on how control measures fit within national sustainable development strategies and plans.

D. Waste and disposal implications (in particular, obsolete stocks of pesticides and clean-up of contaminated sites) (provide summary information and relevant references):	
(i) Technical feasibility	
(ii) Costs	

Explanatory note:

16. Specify if the information provided is connected to the specific needs and circumstances of developing countries.

E. Access to information and public education (provide summary information and relevant references):

Explanatory note:

17. Please provide details here of access to information and public education with respect to both control measures and alternatives.

F. Status of control and monitoring capacity (provide summary information and relevant references):
Monitoring capacity is present in several laboratories

Explanatory note:

18. With regard to control capacity, the information required is on legislative and institutional frameworks for the chemical under consideration and their enforcement. With regard to monitoring capacity, the information required is on the technical and institutional infrastructure for the environmental monitoring and biomonitoring of the chemical under consideration, not monitoring capacity for alternatives.

G. Any national or regional control actions already taken, including information on alternatives, and other relevant risk management information:
Gamma hexachlorocyclohexane is severly restricted in Switzerland. The only legal use is in medicinal products. See also: http://www.bafu.admin.ch/chemikalien/01410/01411/index.html?lang=en The following is an excerpt from the: **Ordinance on Risk Reduction related to the use of certain particularly dangerous substances, preparations and articles** (Ordinance on Risk Reduction related to Chemical Products (ORRChem) of 18 May 2005

Annex 1.1

(Art. 3)

Halogenated organic compounds

1 Prohibitions

1.1 Substances and preparations

It is prohibited to manufacture, place on the market, import in a private capacity, or use:

a. halogenated organic compounds within the meaning of section 3;

b. substances and preparations that contain halogenated organic compounds within the meaning of section 3 that are not merely unavoidable impurities.

3 List of prohibited halogenated organic compounds

a. *Aliphatic monocyclic systems*

- hexachlorocyclohexane (HCH, all isomers), with the exception of gamma-hexachlorocyclohexane (lindane, CAS no.15 58-89-9) in medicinal products.

- ....

Until the coming-into-force of the Ordinance on Risk Reduction related to Chemical Products on 1 August 2005, the sole legal use of Lindane other than in medicinal products was in seed dressings for agricultural purposes (Ordinance on Substances of 9 June 1986, which was abrogated on 1 August 2005). The use of Lindane as seed dressing is thus no longer allowed in Switzerland.

There are about 3000 contaminated sites in Switzerland that would require remediation. Specifically there are two sites, Bonfol (Canton Jura) and Kölliken (Canton Aargau), which served as chemical waste disposal sites for years. The first was operational from 1961 to 1976 and the second from 1978 to 1985. They contain around 114 000 and 350 000 tons, respectively, of special waste, and they most probably also contain POPs chemicals, also lindane, at least in traces – besides precursors which could form POPs over time. It has been decided, therefore, that a definite remediation of Bonfol and Kölliken is a must, a decision which is also economically viable because the remediation, though requiring enormous financial resources, is still cheaper than the sites' long-range state-of-the-art maintenance, which at today's values already costs several million CHF per year.
The current estimate is that the now initiated full remediation (including on-site incineration in a high tech oven) will require some CHF 200 and about 500 million for Bonfol and Kölliken, respectively. The costs incurred in this remarkable project will thereby be shared for Kölliken, mainly by the two Cantons and the chemical companies that own the site.
Here, it has to be mentioned that the exact amount of POPs chemicals sitting in the Bonfol and the Kölliken waste disposal sites is still unknown – and that the two sites will probably be among the first large disposal sites of this nature in the world to undergo full remediation.

Reference: National Implementation Plan, Switzerland, 2006.
http://www.pops.int/documents/implementation/nips/submissions/switzerland.pdf

Explanatory notes:

19. Actions or measures taken could include prohibitions, phase-outs, restrictions, cleanup of contaminated sites, waste disposal, economic incentives, and other non-legally binding initiatives.

20. Information could include details on whether these control actions have been cost-effective in providing the desired benefits and have had a measurable impact on reducing levels in the environment and contributed to risk reduction.

H. Other relevant information for the risk management evaluation:

Explanatory notes:

21. The above list of items is only indicative. Any other relevant information for the risk management evaluation should also be provided.

I. Other information requested by the POPRC:
[Note to the Secretariat]

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