

**United Nations  
Environment  
Programme**

Distr.: General  
10 November 2006

Original: English

---

**Stockholm Convention on Persistent Organic Pollutants**  
**Persistent Organic Pollutants Review Committee**  
**Second meeting**  
Geneva, 6–10 November 2006

**Report of the Persistent Organic Pollutants Review Committee  
on the work of its second meeting****I. Opening of the meeting**

1. The second meeting of the Persistent Organic Pollutants Review Committee was held at the Varembe Conference Centre in Geneva, from 6 to 10 November 2006. Mr. Reiner Arndt (Germany), Chair of the Committee, declared the meeting open at 10.05 a.m. on Monday, 6 November 2006.
2. Mr. Maged Younes, Head of the Chemicals Branch of the Division of Technology, Industry and Economics of the United Nations Environment Programme (UNEP), welcomed participants and paid tribute to the considerable achievements of the Committee since its establishment, which, he said, owed much to the leadership of its Chair, the dedicated and transparent efforts of its members and observers and the effective work of the Secretariat. Noting the heavy workload of the Committee at its second meeting, he emphasized the important role played by the Committee in terms of implementing the Stockholm Convention on Persistent Organic Pollutants and protecting the environment from persistent organic pollutants.
3. In his opening statement, the Chair recalled that, at its first meeting, the Committee had decided to establish a number of intersessional ad hoc working groups to consider, among other things, the development of draft risk profiles for five chemicals and matters relating to Annex F. Those groups had corresponded largely by e-mail and had concluded their work the previous day with their first face-to-face meetings. Those meetings, like the intersessional work generally, had been open-ended and aimed at facilitating the work of the Committee, rather than at taking decisions. If arrangements were made in the future to hold such meetings, the relevant information would be made available on the Convention website in due time.

## II. Organizational matters

### A. Adoption of the agenda

4. The Committee adopted the agenda set out below, on the basis of the provisional agenda which had been circulated as document UNEP/POPS/POPRC.2/1:

1. Opening of the meeting.
2. Organizational matters:
  - (a) Adoption of the agenda;
  - (b) Organization of work.
3. Review of the outcomes of the second meeting of the Conference of the Parties of the Stockholm Convention relevant to the work of the Committee.
4. Operational issues:
  - (a) Confidentiality arrangements;
  - (b) Treatment of isomers or groups of isomers of chemicals proposed for listing in Annexes A, B and/or C to the Convention;
  - (c) Listing chemicals the transformation products of which are chemicals proposed for listing in Annexes A, B and/or C to the Convention;
  - (d) Roster of experts;
  - (e) Standard workplan for the preparation in the period between the second and third meetings of the Committee:
    - (i) Of a draft risk profile;
    - (ii) Of a draft risk management evaluation;
  - (f) Submission of information specified in Annex F to the Convention.
5. Consideration of draft risk profiles on:
  - (a) Pentabromodiphenyl ether;
  - (b) Chlordecone;
  - (c) Hexabromobiphenyl;
  - (d) Lindane;
  - (e) Perfluorooctane sulfonate.
6. Consideration of chemicals newly proposed for inclusion in Annexes A, B and/or C to the Convention:
  - (a) Octabromodiphenyl ether;
  - (b) Pentachlorobenzene;
  - (c) Short-chained chlorinated paraffins;
  - (d) Alpha hexachlorocyclohexane;
  - (e) Beta hexachlorocyclohexane.
7. Other matters.
8. Dates and venue of the third meeting of the Committee.
9. Adoption of the report.
10. Closure of the meeting.

5. Following a suggestion by the Chair, the Committee agreed to discuss under agenda item 7 (“Other matters”) the possibility of holding a side event on the Committee’s work and achievements during the third meeting of the Conference of the Parties. It also agreed to discuss the terms of office of the members of the Committee.

## B. Organization of work

6. The Chair drew attention to the objectives and possible outcomes of the meeting, as set out in the scenario note for the meeting (UNEP/POPS/POPRC.2/INF/1), and to the revised tentative schedule for the week, contained in document UNEP/POPS/POPRC.2/INF/2.

7. The Committee decided to conduct its work in plenary and to establish such contact groups and drafting groups as necessary. Contact group meetings would be open to observers, whereas drafting group meetings would be open only to members of the Committee.

## C. Officers

8. In accordance with the rules of procedure for the Conference of the Parties and the terms of reference of the Committee, as set out in the annexes to decisions SC-1/1 and SC-1/7 respectively, the Conference of the Parties had agreed at its first meeting, held in Punta del Este, Uruguay, from 2 to 6 May 2005, that Mr. Arndt would serve as Chair of the Committee. Also in accordance with those rules of procedure and terms of reference, the Committee, at its first meeting, held in Geneva from 7 to 11 November 2005, had agreed that Ms. Jaqueline Alvarez (Uruguay) would serve as its Vice-Chair. It had been agreed at that meeting that Ms. Alvarez would also serve as Rapporteur.

## D. Attendance

9. At its first meeting, by its decision SC-1/7, the Conference of the Parties had decided that the Committee should comprise 31 members, who would be government-designated experts in chemical assessment or management from the Parties, appointed by the Conference on the basis of equitable geographical distribution, taking into account gender and the need for a balance between different types of expertise. Following that meeting, members of the Committee had been nominated by the Parties identified to do so. The appointment of those members had been confirmed by the Conference of the Parties at its second meeting, held in Geneva, from 1 to 5 May 2006, in paragraph 2 of decision SC-2/8.

10. Accordingly, the meeting was attended by the following 29 members: Ms. Anahit Aleksandryan (Armenia), Mr. Ian Rae (Australia), Mr. Désiré Ouédraogo (Burkina Faso), Mr. Robert Chenier (Canada), Mr. Abderaman Mahamet Abderaman (Chad), Mr. Jianxin Hu (China), Mr. Kouamé Georges Kouadio (Côte d'Ivoire), Mr. Ivan Holoubek (Czech Republic), Mr. Alfredo Cueva (Ecuador), Mr. Mohammed Ali Mohammed (Ethiopia), Mr. Reiner Arndt (Germany), Mr. Masaru Kitano (Japan), Mr. Ziad Mahmoud Abu Kaddourah (Jordan), Mr. Mohammad Aslam Yadallee (Mauritius), Mr. Mario Yarto (Mexico), Ms. Farah Bouqartacha (Morocco), Ms. Liselott Säll (Norway), Mr. Dario C. Sabularse (Philippines), Ms. Hala Sultan Saif Al-Easa (Qatar), Mr. Thomas Brima Rick Yormah (Sierra Leone), Ms. Evelin Fabjan (Slovenia), Mr. Henk Bouwman (South Africa), Mr. José V. Tarazona (Spain), Mr. Bo Wahlström (Sweden), Mr. Jarupong Boon-Long (Thailand), Mr. Wayne Rajkumar (Trinidad and Tobago), Ms. Leena Ylä-Mononen (designated by the United Kingdom of Great Britain and Northern Ireland), Ms. Jacqueline Alvarez (Uruguay) and Mr. Ali El-Shekeil (Yemen). Ms. Adriana de Araújo Maximiano (Brazil) and Ms. Razia Zahina Zariff Mohammed (Fiji) sent their apologies, as they were regrettably unable to attend.

11. In accordance with the terms of reference of the Committee, Ms. Säll had been nominated by her Government to fill, on an interim basis, the place on the Committee previously occupied by Ms. Janneche Utne Skåre (Norway). Her appointment would be confirmed by the Conference of the Parties at its third meeting.

12. In addition, the meeting was attended by observers from the following countries: Algeria, Australia, Austria, Botswana, Canada, China, Colombia, Estonia, European Community, Finland, France, India, Japan, Netherlands, Norway, Poland, Qatar, Russian Federation, Slovakia, Switzerland, United Kingdom of Great Britain and Northern Ireland and United States of America.

13. The following United Nations bodies and specialized agencies were represented: United Nations Environment Programme (UNEP), United Nations Institute for Training and Research (UNITAR) and the World Health Organization (WHO).

14. The following non-governmental organizations were represented: Bromine Science and Environmental Forum, Chlorinated Paraffins Industry Association, CropLife International, Environmental Health Fund, European Semiconductor Industry Association, Indian Chemical Council, International Council of Chemical Associations, International Pops Elimination Network, Pesticide Action Network North America and World Chlorine Council.

15. A complete list of participants is set out in document UNEP/POPS/POPRC.2/INF/22.

### **III. Review of the outcomes of the second meeting of the Conference of the Parties of the Stockholm Convention relevant to the work of the Committee**

16. Introducing the item, the representative of the Secretariat summarized the information contained in document UNEP/POPS/POPRC.2/INF/3 on the outcomes of the second meeting of the Conference of the Parties relevant to the work of the Committee. The Committee took note of the document.

### **IV. Operational issues**

#### **A. Confidentiality arrangements**

17. Recalling the provisions of the Convention on confidentiality and the Committee's discussions on the issue at its first meeting, the representative of the Secretariat introduced a draft code of practice for the handling of confidential information, which was annexed to document UNEP/POPS/POPRC.2/2. The Committee also had before it a document containing analysis and comments relating to confidentiality matters (UNEP/POPS/POPRC.2/INF/20). Highlighting key points in the draft code, the representative of the Secretariat emphasized the importance of maintaining transparent and open processes in the Committee and under the Convention in general and of exercising restraint in designating information as confidential. Information which related to the health and safety of humans and the environment, as specified in the Convention, could not be considered as confidential. While information would be considered as confidential only under exceptional circumstances, the possibility of such confidentiality necessitated appropriate procedures.

18. The Chair, noting that observers would not have access to confidential information, stressed that the Committee's basic principle should be to discourage the use of confidential information and to encourage submitters to present information in ways that allowed it to be distributed openly.

19. In the ensuing discussion, several members expressed concern about the intersessional distribution of confidential information and pointed out that it might be difficult to guarantee the non-disclosure of such information since they might be obliged by their domestic legislation to disclose it. Other members spoke in favour of being given access to confidential information during the intersessional period, noting that it would facilitate the work of the ad hoc working groups, and indicated that they had experience handling such information. With that in mind, one member called for a case-by-case approach to the consideration of confidential information.

20. Following further discussion, the Secretariat was requested to prepare a revised version of the draft code of practice for the treatment of confidentiality and a draft decision on the issue, taking into account the issues raised by members.

21. During consideration of the draft code of practice, there was a divergence of views on whether to include text indicating that information which was deemed to affect the competitiveness of a Party or observer, upon its declaration to that effect, should be labelled as confidential.<sup>1</sup> Following a discussion, it was agreed that the draft code would not contain such text, but that the issue would be brought to the attention of the Conference of the Parties at its third meeting. There was also a divergence of views on whether information on releases, such as discharges, losses and emissions, submitted pursuant to paragraph (a) (iii) of Annex E, should be designated as non-confidential for the purposes of the work of the Committee.

22. The Committee adopted decision POPRC-2/12 on confidentiality arrangements, which contained in its annex a draft code of practice for the treatment of confidential information in the Committee to the Conference of the Parties for consideration at its third meeting. The Committee agreed that the code should be reviewed by the Committee on a regular basis to assess its effectiveness.

---

<sup>1</sup> The text read: "Information that is deemed to affect the competitiveness of the Party or observer, upon its declaration to that effect, should be labelled as confidential. Information of importance for health and safety of humans and the environment should not be regarded as confidential."

## **B. Treatment of isomers or groups of isomers of chemicals proposed for listing in Annexes A, B and/or C to the Convention**

23. Introducing the item, the representative of the Secretariat summarized the information contained in document UNEP/POPS/POPRC.2/3. He recalled that the issue of the treatment of isomers had arisen after Mexico had proposed lindane, the gamma isomer of hexachlorocyclohexane (HCH), for listing in Annexes A, B and/or C to the Convention. During the Committee's discussions of the proposal at its first meeting, it had been noted that the proposal referred also to the other two major isomers of HCH, namely alpha and beta HCH. The Committee had sought guidance from the Conference of the Parties at its second meeting on how to handle isomers but, in view of the technical nature of the issue, the Conference had requested the Committee in decision SC-2/8 to provide recommendations on the best approach, for consideration by the Conference at its third meeting. Accordingly, the Secretariat had set out in document UNEP/POPS/POPRC.2/3 two possible approaches for consideration by the Committee: the first whereby the Committee would review only the chemical which had been nominated but would identify the importance of isomers to prompt Parties to nominate them for listing; and the second whereby the Committee would be mandated by the Conference of the Parties to take a more active role by making recommendations to the Conference on the nomination of isomers for review.

24. During the ensuing discussion, a broad range of views was expressed on the alternative approaches proposed by the Secretariat. Some members stressed that Article 8 of the Stockholm Convention provided that only Parties to the Convention could nominate chemicals for listing in the Annexes and that it was therefore doubtful that the second approach would be legally viable. In addition, one member noted that the second option might be unfeasible in practical terms, since the Committee lacked the capacity to undertake the preparatory work for proposals. The Committee would, however, still be able to highlight the importance of particular isomers and encourage Parties to submit proposals.

25. Other members, however, expressed support for the second approach. A flexible, case-by-case approach was advocated by those members, perhaps with a provision for nominating Parties to amend their submissions in the light of recommendations from the Committee and other Parties. Some members indicated that they favoured the adoption of the second approach insofar as it might help ensure that interlinked isomers were considered concurrently, which could be important when making proposals to the Conference. One suggested that nominating countries could be requested to provide more information on related isomers, to allow those to be considered fully. It was agreed that details of all submitted nominations should be made clearly available to Parties and observers on the Convention's website. In addition, it was noted by one member that the two approaches did not have to be mutually exclusive.

26. In the discussion on the treatment of isomers, a member submitted a paper providing definitions of isomers, congeners and homologues. After reviewing the paper, the Committee took note of the definitions for the purpose of providing interpretative guidance to the work of the Committee. The definitions are set out in annex IV to the present report.

27. The Committee requested the Secretariat to prepare a draft decision containing a recommended approach for addressing the issue of isomers for consideration by the Conference at its third meeting, taking into account the comments raised during the discussion.

28. The Committee adopted decision POPRC-2/11 on an approach for considering isomers or groups of isomers of chemicals proposed for listing in Annexes A, B and/or C to the Convention. It was noted, however, that the approach had been developed to reflect the specific situation presented by lindane and might not be appropriate in the case of other chemicals.

## **C. Listing chemicals the transformation products of which are chemicals proposed for listing in Annexes A, B and/or C to the Convention**

29. In considering the item, the Committee had before it document UNEP/POPS/POPRC.2/4. Introducing the item, the Chair invited the Committee to consider the issue of chemicals that might be transformed into persistent organic pollutants in the environment for listing in Annexes A, B and/or C to the Convention. He also invited the Committee to consider the relevance of the transformation process, taking into account the rate of transformation under natural environmental conditions and the time required for transformation to occur.

30. In the ensuing discussion, the Committee noted that perfluorooctane sulfonate (PFOS) required special attention because of its very long persistence. Precursors of PFOS would eventually release the chemical into the environment and could therefore be included, if appropriate, in any risk management

activities. One member stressed, however, that it would be unwise to take a generic view on the issue and that the approach used for PFOS would not necessarily be appropriate in the case of other persistent organic pollutants resulting from transformations.

31. Given the range of views expressed on how to deal with precursors and the complexity of the matter, the Chair suggested that, initially, the Committee should concentrate on PFOS before considering its precursors. Further discussions on that particular issue would take place during consideration of PFOS under agenda item 5 (e).

#### **D. Roster of experts**

32. The representative of the Secretariat introduced the documentation on the item (UNEP/POPS/POPRC.2/5 and UNEP/POPS/POPRC.2/INF/11) and summarized the process for the establishment of the roster of experts who were not members of the Committee and that the Committee could invite to support it in its work. She noted that further information was needed on the fields of expertise of the nominated experts and suggested that the Committee might wish to explore how additional experts, in particular in the social and economic fields, could be nominated.

33. The Chair reiterated the importance of socio-economic expertise, in particular from developing countries, for the next phase of the work of the Committee and stressed the need to maintain geographical balance. He noted that UNEP, working with the Organization for Economic Cooperation and Development (OECD), had developed a model to predict the environmental fate and long-range transport of persistent organic pollutants and suggested that an expert who had been involved in that work might be invited to attend the Committee's third meeting to demonstrate the model. He also suggested that an expert in the field of socio-economics be invited to attend that meeting.

34. The Committee took note of the roster of experts nominated by Parties.

#### **E. Standard workplan for the preparation in the period between the second and third meetings of the Committee of a draft risk profile and a draft risk management evaluation**

##### **1. Draft risk profile**

35. The representative of the Secretariat presented a draft workplan for the intersessional period between the second and third meetings of the Committee for the preparation of a draft risk profile.

36. Following consideration of the draft, the Committee adopted the workplan, as contained in annex II to the present report.

##### **2. Draft risk management evaluation**

37. The representative of the Secretariat presented a draft workplan for the intersessional period between the second and third meetings of the Committee, based on the draft contained in annex V of document UNEP/POPS/POPRC.2/6, for the preparation of a risk management evaluation.

38. The Committee agreed that, funds permitting, the chairs of the intersessional working groups would be invited to attend the meeting of the drafters and the Chair of the Committee to further the process and prepare an outline for the risk management evaluations, to be held from 18 to 20 February 2007. In the event of a shortage of funds, the Committee agreed that the chairs would be able to participate in the meeting in a telephone conference.

39. Following consideration of the draft, the Committee adopted the workplan, as contained in annex II to the present report.

40. In addition, the Committee endorsed the risk management outline contained in annex IV of document UNEP/POPS/POPRC.2/6.

#### **F. Submission of information specified in Annex F to the Convention**

41. Mr. Alfredo Cueva (Ecuador), chair of the ad hoc working group on confidentiality and Annex F, recalled that document UNEP/POPS/POPRC.2/6 contained in its annexes various draft documents relevant to the gathering of information under Annex F. He introduced document UNEP/POPS/POPRC.2/INF/13, which contained comments on that document submitted by Parties and observers.

42. Presentations were given by Ms. Alvarez (Uruguay) and Mr. Chenier (Canada) on the risk management of toxic substances in their respective countries, with particular emphasis on socio-economic considerations relevant to Annex F.

43. In a general discussion, one member emphasized that one of the key aims of the evaluation process under Annex F was to notify Parties in very clear terms that a chemical faced prohibition and to elicit responses from them on how a ban would affect them and what alternative regulatory measures might be considered. Several members highlighted the difficulties that developing countries faced in managing persistent organic pollutants. One member, noting that it was difficult to obtain comprehensive information on the users and producers of chemicals, suggested that the Committee might lend its support to developing country Governments to promote information dissemination and capacity-building. Another member said that the high cost of alternatives to persistent organic pollutants could prove to be an obstacle to their introduction, particularly in developing countries. While some members observed that developing countries could learn from the experiences of developed countries when trying to identify substitutes for harmful chemicals, others stressed that such experiences were not always applicable because of different needs for alternatives due to climatic and other reasons. One member noted that the technological improvements both within the chemicals sector and beyond would continue to offer better alternatives and one developing country member reported some success in identifying substitutes for lindane in his country. It was emphasized by one member that the different situations in developed and developing countries should be taken into account in the draft risk management evaluation outline.

44. In a discussion of alternatives to regulatory responses, one member said that his Government had successfully engaged in discussions with industries and had enlisted the support of users to discourage the use of harmful chemicals. Others stressed that persistent organic pollutants represented a serious threat that required a regulatory response, pointing out that the Stockholm Convention existed partly because national regimes were unable to address that threat fully. One member emphasized the importance of listing the proposed chemicals in the Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade, noting that such a measure would ensure that importing Parties received adequate information to enable them to make informed decisions.

45. Following consideration of each of the draft texts set out in the annexes to document UNEP/POPS/POPRC.2/6, during which members proposed several additions and modifications, the Committee agreed to establish a contact group, chaired by Mr. Cueva, to consider further and revise the annexes.

46. After the chair of the contact group had reported back on the group's work, the Committee took note of the letter requesting information pursuant to Annex F. It also took note of the format with explanatory notes for submitting, pursuant to Article 8 of the Convention, the information specified in Annex F. Both documents are contained in annex III to the present report.

## **V. Consideration of draft risk profiles**

### **A. Pentabromodiphenyl ether**

47. Mr. Ian Rae (Australia), chair of the ad hoc working group on pentabromodiphenyl ether, introduced the draft risk profile prepared by that group (UNEP/POPS/POPRC.2/7). He noted that, because commercial pentabromodiphenyl ether comprised several polybromodiphenyl ethers, there were uncertainties about how it should be addressed. Nevertheless, he said, the combination of the toxic effects of and widespread exposure to the compounds contained in the commercial mixture clearly represented a significant risk to human health and thus met the criteria set out in Annexes D and E to the Convention. Various studies had demonstrated the release of pentabromodiphenyl ether into the environment during manufacture, use and after use of the commercial mixture; following release, pentabromodiphenyl ether was taken up by biota and passed up the food chain. Production and use of commercial pentabromodiphenyl ether had been reduced to a large extent in recent years and had stopped altogether in Japan and the European Union. With the chemical's volatility contributing to its long-range transport, however, levels of exposure to pentabromodiphenyl ether continued to rise in North America and remote Arctic regions. The mixture's major components, pentabromodiphenyl ether and tetrabromodiphenyl ether, were of the greatest concern to human health; their effects were thought to resemble those of polychlorinated biphenyls and there was evidence of their impact on certain species. Another member of the working group, who had been involved in drafting the draft risk profile, added that the emissions from the recycling process revealed ample evidence of commercial

pentabromodiphenyl ether in older electrical and electronic appliances, which suggested that the commercial mixture was more widespread than previously thought.

48. During the ensuing discussion, there was general agreement that pentabromodiphenyl ether was likely, as a result of its long-range environmental transport, to lead to significant adverse human health and environmental effects such that global action was warranted and that the proposal should proceed. Further to some debate on how best to define the chemical that was to be proposed and subsequently regulated, the Committee agreed to focus on commercial pentabromodiphenyl ether. One member said that, in order to prevent producers from evading control measures for commercial pentabromodiphenyl ether by adjusting the balance of the mixture and defining it as a different chemical, the European Union had regulated pentabromodiphenyl ether individually and had established concentration limits for its presence in mixtures.

49. The Committee agreed to establish a contact group to revise the draft risk profile on commercial pentabromodiphenyl ether for consideration by the Committee. It also agreed to establish a drafting group to prepare a draft decision on commercial pentabromodiphenyl ether. Both groups were chaired by Mr. Rae.

50. The Committee adopted the risk profile on commercial pentabromodiphenyl ether, as orally amended. The risk profile is contained in document UNEP/POPS/POPRC.2/17/Add.1.

51. The Committee adopted decision POPRC-2/1 on commercial pentabromodiphenyl ether, as contained in annex I to the present report.

## **B. Chlordecone**

52. Ms. Hala Sultan Saif Al-Easa (Qatar), chair of the ad hoc working group on chlordecone, introduced the draft risk profile prepared by that group (UNEP/POPS/POPRC.2/8) and summarized the comments which had been submitted relating to the draft (UNEP/POPS/POPRC.2/INF/16).

53. Noting that some of the information presented to the working group had been difficult to process, the Chair urged the Committee to be as specific as possible in the future when submitting comments on a draft risk profile and to submit such information in a timely manner.

54. In the ensuing discussion, several members expressed concern about the lack of monitoring data in the draft risk profile, in particular from remote areas. In that regard, one member, noting that there were insufficient resources available in developing countries to monitor chemicals, observed that a lack of data did not necessarily mean the non-existence of the chemical. One member suggested that the potential of the chemical for long-range environmental transport might be deduced from the results of studies into environmental fate properties. Suggestions were made by other members regarding the inclusion in the risk profile of comparative data on risk quotients, the identification of data gaps and the use of data on similar chemicals as benchmarks.

55. Responding to a question on the value of considering a chemical which was thought to be no longer used or produced and for which there was little evidence of long-range transport, some members indicated that the use of chlordecone in banana production was recent enough to suggest that stockpiles and waste management might still be a cause for concern. It was unadvisable, they said, to delay action until the effects of a chemical were detected. Furthermore, it was difficult to determine whether a chemical was no longer used or produced, prior to receiving the information requested under Annex F. One member noted that, as chlordecone had not been banned worldwide, there was a risk that its production might recommence.

56. Recalling that, according to paragraph 7 (a) of Article 8, a lack of full scientific certainty of long-range environmental transport should not prevent a proposal from proceeding, the Committee noted that the preparation of a risk management evaluation would allow for the collection of additional data. In that connection, it was suggested that paragraph 7 (a) of Article 8 provided a means to filter out lower risk chemicals and was designed to assist in setting priorities; the Committee should therefore decide how it would handle low production chemicals.

57. The Committee agreed to establish a contact group to revise the draft risk profile on chlordecone for consideration by the Committee. The group was also requested to prepare some text on chlordecone to be inserted into a letter to Parties and observers inviting them to submit, pursuant to Article 8 of the Convention, the information specified in Annex F to the Convention, on the basis of the draft letter prepared by the ad hoc intersessional working group on confidentiality and Annex F (contained in annex I to document UNEP/POPS/POPRC.2/6). The Committee also agreed to establish a drafting group to prepare a draft decision on chlordecone. Both groups were chaired by Ms. Al-Easa.



58. The Committee adopted the risk profile on chlordecone, as orally amended. The risk profile is contained in document UNEP/POPS/POPRC.2/17/Add.2. The Committee also took note of the text prepared by the contact group for insertion into a letter to Parties and observers inviting them to submit the information specified in Annex F.

59. The Committee adopted decision POPRC-2/2 on chlordecone, as contained in annex I to the present report.

### **C. Hexabromobiphenyl**

60. Ms. Leena Ylä-Mononen (designated by the United Kingdom of Great Britain and Northern Ireland), drafter of the ad hoc working group on hexabromobiphenyl, introduced the draft risk profile prepared by that group (UNEP/POPS/POPRC.2/9) and the comments and responses relating to that profile (UNEP/POPS/POPRC.2/INF/17).

61. During the ensuing discussion, there was general agreement that, because hexabromobiphenyl was not a simple chemical, special care was needed to define exactly what was being addressed. One member called for the adoption of similar definitions to those used in the two other international agreements, namely the Convention on Long-range Transboundary Air Pollution and the Rotterdam Convention, which already regulated hexabromobiphenyl. Several members called for the inclusion of more information in the risk profile to support certain statements and conclusions. There was also some discussion on the importance of listing a chemical that was thought to be no longer produced. In that context, one member stressed that, because other brominated fire-retardants were being phased out at the same time that demand for such products was increasing, there was a clear risk that hexabromobiphenyl production would resume.

62. The Committee agreed that the contact group which had been established to revise the draft risk profile on chlordecone would also revise the draft risk profile on hexabromobiphenyl and draft some text on hexabromobiphenyl to be inserted into a letter to Parties and observers inviting them to submit the information specified in Annex F of the Convention. The Committee also agreed that the drafting group established to prepare a draft decision on chlordecone would also prepare a draft decision on hexabromobiphenyl.

63. The Committee adopted the risk profile on hexabromobiphenyl, as orally amended. The risk profile is contained in document UNEP/POPS/POPRC.2/17/Add.3. The Committee also took note of the text prepared by the contact group for insertion into a letter to Parties and observers inviting them to submit the information specified in Annex F.

64. The Committee adopted decision POPRC-2/3 on hexabromobiphenyl, as contained in annex I to the present report.

### **D. Lindane**

65. Mr. Mario Yarto (Mexico), drafter of the ad hoc working group on lindane, introduced the draft risk profile prepared by that group (UNEP/POPS/POPRC.2/10) and the comments and responses relating to that profile (UNEP/POPS/POPRC.2/INF/18). He recalled that, although the proposal submitted by Mexico made reference to alpha and beta hexachlorocyclohexane, only the gamma isomer (lindane) had been proposed for listing in Annex A.

66. In the ensuing discussion, there was broad agreement that lindane was likely, as a result of its long-range environmental transport, to lead to significant adverse human health and environmental effects such that global action was warranted, and that the proposal should proceed. One member expressed regret, however, that the alpha and beta isomers were not being considered concurrently, because they were closely linked to lindane both in production and through isomerization in the environment. Another noted that, although lindane did not quite fulfil all the quantitative criteria for listing, the draft risk profile and recent studies had demonstrated the chemical's persistence and potential for bioaccumulation and its status as a persistent organic pollutant.

67. The Committee agreed to establish a contact group to revise the draft risk profile on lindane for consideration by the Committee. The group was also requested to prepare some text on lindane to be inserted into a letter to Parties and observers inviting them to submit the information specified in Annex F of the Convention. The Committee also agreed to establish a drafting group to prepare a draft decision on lindane. Both groups were chaired by Mr. Bouwman (South Africa).

68. The Committee adopted the risk profile on lindane, as orally amended. The risk profile is contained in document UNEP/POPS/POPRC.2/17/Add.4.

69. In addition, the Committee took note of the text prepared by the contact group for insertion into a letter to Parties and observers inviting them to submit the information specified in Annex F. The Chair noted, however, that the text, which also included requests for information on alpha and beta hexachlorocyclohexane, went further than the provisions of the Convention; therefore, the Conference of the Parties would be requested to endorse the approach at its third meeting.

70. The Committee adopted decision POPRC-2/4 on lindane, as contained in annex I to the present report.

71. During a general discussion on the presentation of information in risk profiles, one member said that it might be useful in the future to compile a fact sheet summarizing the data presented in a profile, which might be included in the executive summary. It was agreed that the matter would be discussed further at the next meeting of the Committee.

## **E. Perfluorooctane sulfonate**

72. Mr. Robert Chenier (Canada), chair of the ad hoc working group on PFOS, introduced the draft risk profile prepared by that group (UNEP/POPS/POPRC.2/11). Highlighting the key aspects of the draft risk profile, he drew attention to a number of issues that might warrant further discussion and noted the working group's conclusion that the criteria of Annex D had been met. It had also concluded that all the elements of Annex E had been addressed; that the data used were recent, of high quality and reflected current monitoring in remote regions; and that current concentrations in birds and mammals were in the same range as laboratory-derived effect levels. The working group had noted that, while there was a reduction in current uses of PFOS, the chemical was still produced in some countries and used in many. Considering the inherent properties of PFOS and its precursors and given that concentrations in fish-eating birds and mammals might exceed effect levels, that there was widespread occurrence in biota including in remote areas and that precursors might contribute to the overall presence of PFOS in the environment, the working group had concluded that global action was warranted for PFOS and its precursors.

73. Following the presentation, the Committee took note of the draft risk profile on PFOS and agreed that PFOS was likely, as a result of its long-range environmental transport, to lead to significant adverse human health or environmental effects such that global action was warranted.

74. Specific groups of precursors such as polymers and salts were then discussed by the Committee. Different approaches to defining precursors were discussed, in particular whether precursors should be listed individually or as groups of chemicals, or whether a more general definition such as the one provided in the risk profile would be sufficient. There was some disagreement over the solubility of certain salts, an issue which the Committee considered needed further clarification. There was broad agreement, however, that salts were clearly a potential group of precursors while, for some, uncertainty remained over the other precursors noted in the risk profile.

75. The Committee noted that it would be valuable to place on the industrial sector the burden of proving that certain PFOS precursors would not degrade to PFOS and thereby contribute to the environmental load of persistent organic pollutants, given that the sector had better access to that information. Several members noted that it should not be responsibility of the Committee to prove that such chemicals had adverse effects on human health and the environment. Some members said that the impact on industry of any degradation of precursors to the PFOS anion should be factored into risk management practices. There was some discussion on the advantages of focusing on uses when considering precursors, rather than on specific products or chemicals.

76. Following the discussion, the Chair noted that, as agreement had been reached that the PFOS anion was a persistent organic pollutant and, as precursors were part of the risk management phase, it was not necessary to make an immediate decision regarding the listing of precursors. The Committee agreed that the focus at the current stage should be on identifying what further information was required to make a decision on PFOS precursors and how that information should be gathered; therefore no decision on precursors under Article 8 of the Convention would be made at the current meeting. It was noted, however, that, if no further information was forthcoming, a decision would have to be made at the third meeting, based on the information currently available.

77. The Committee agreed to establish a contact group to revise the draft risk profile on PFOS for consideration by the Committee. The group was also requested to prepare some text on PFOS and PFOS precursors to be inserted into a letter to Parties and observers inviting them to submit, pursuant to Article 8 of the Convention, the information specified in Annex F to the Convention. The Committee

also agreed to establish a drafting group to prepare a draft decision on PFOS to be presented to the Committee for its consideration and adoption. Both groups were chaired by Mr. Chenier (Canada).

78. The Committee, noting that further consideration would be given in the future to the issue of precursors to perfluorooctane sulfonate, adopted the risk profile on perfluorooctane sulfonate, as orally amended. The risk profile is contained in document UNEP/POPS/POPRC.2/17/Add.5. The Committee also took note of the text prepared by the contact group for insertion into a letter to Parties and observers inviting them to submit the information specified in Annex F.

79. The Committee adopted decision POPRC-2/5 on perfluorooctane sulfonate, as contained in annex I to the present report.

#### **F. Revision of risk profiles**

80. The Chair noted the need for the Committee to consider a policy on the revision of risk profiles after their adoption.

81. Following some discussion, the Committee agreed that risk profiles fell into three categories: profiles which contained ample information, such as the PFOS risk profile; those which lacked scientific certainty, such as the chlordecone risk profile; and those which could be reinforced with more information, such as the hexabromobiphenyl risk profile. It was agreed that revisions to the first group should be limited to information which altered the conclusions in the risk profile. With respect to the second category, revisions to address the data shortcomings should be made, where possible, prior to the consideration of the chemical by the Conference of the Parties. With respect to the third category, it was agreed that the profiles should be dealt with on a case-by-case basis.

### **VI. Consideration of chemicals newly proposed for inclusion in Annexes A, B and/or C to the Convention**

#### **A. Octabromodiphenyl ether**

82. The observer from the European Community introduced the proposal submitted by the European Community and its member States which were Party to the Convention for listing octabromodiphenyl ether in Annexes A, B and/or C to the Convention (UNEP/POPS/POPRC.2/INF/4 and UNEP/POPS/POPRC.2/12). He noted that the proposal dealt with commercial octabromodiphenyl ether, which was a mixture containing several isomers, including pentabromodiphenyl ether, hexabromodiphenyl ether, heptabromodiphenyl ether and octabromodiphenyl ether.

83. Following the discussion, the Committee agreed to establish a contact group to prepare an evaluation of whether commercial octabromodiphenyl ether fulfilled the criteria in Annex D. It also agreed to establish a drafting group to prepare a draft decision on commercial octabromodiphenyl ether. Both groups were chaired by Ms. Alvarez (Uruguay).

84. The drafting group concluded that commercial octabromodiphenyl ether met the screening criteria listed in Annex D to the Convention and submitted a draft decision for consideration by the Committee.

85. The Committee adopted decision POPRC-2/6 on commercial octabromodiphenyl ether, as contained in annex I to the present report.

#### **B. Pentachlorobenzene**

86. The observer from the European Community introduced the proposal submitted by the European Community and its member States which were Party to the Convention for listing pentachlorobenzene in Annexes A, B and/or C to the Convention (UNEP/POPS/POPRC.2/13 and UNEP/POPS/POPRC.2/INF/5).

87. Following the discussion, the Committee agreed to establish a contact group to prepare an evaluation of whether pentachlorobenzene fulfilled the criteria in Annex D. It also agreed to establish a drafting group to prepare a draft decision on pentachlorobenzene. Both groups were chaired by Ms. Alvarez (Uruguay).

88. The drafting group concluded that pentachlorobenzene met the screening criteria listed in Annex D to the Convention and submitted a draft decision for consideration by the Committee.

89. The Committee adopted decision POPRC-2/7 on pentachlorobenzene, as contained in annex I to the present report.

### **C. Short-chained chlorinated paraffins**

90. Ms. Ylä-Mononen introduced the proposal submitted by the European Community and its member States that were Parties to the Stockholm Convention for the listing of short-chained chlorinated paraffins in Annexes A, B and/or C to the Convention (UNEP/POP/POPRC.2/INF/6 and UNEP/POP/POPRC.2/14). The proposal, she explained, applied only to short-chained chlorinated paraffins, which were defined as n-paraffins with a carbon chain length of 10–13 carbon atoms; medium and long-chained chlorinated paraffins were not under consideration.

91. During the ensuing discussion, the co-chair of the United Nations Economic Commission for Europe Convention on Long Range Transboundary Air Pollution Task Force on Persistent Organic Pollutants said that the task force had undertaken reviews of short-chained chlorinated paraffins and other chemicals and that information obtained from those reviews could be useful to the Committee when it undertook its reviews pursuant to Annexes D, E and F. The Committee welcomed her offer to make those findings available for its consideration.

92. Following the discussion, the Committee agreed to establish a contact group to prepare an evaluation of whether short-chained chlorinated paraffins fulfilled the criteria in Annex D. It also agreed to establish a drafting group to prepare a draft decision on short-chained chlorinated paraffins. Both groups were chaired by Mr. Mohammad Aslam Yadallee (Mauritius).

93. The drafting group concluded that short-chained chlorinated paraffins met the screening criteria listed in Annex D to the Convention and submitted a draft decision for consideration by the Committee.

94. The Committee adopted decision POPRC-2/8 on short-chained chlorinated paraffins, as contained in annex I to the present report.

### **D. Alpha hexachlorocyclohexane**

### **E. Beta hexachlorocyclohexane**

95. In view of the close links between the alpha and beta isomers of hexachlorocyclohexane, the Committee agreed to consider agenda items 6 (d) and 6 (e) together.

96. Mr. Yarto introduced the proposals submitted by Mexico for listing the alpha and beta isomers of hexachlorocyclohexane (HCH) in Annexes A, B and/or C to the Convention, as contained in documents UNEP/POPS/POPRC.2/INF/7 and UNEP/POPS/POPRC.2/INF/8 and summarized by the Secretariat in documents UNEP/POPS/POPRC.2/15 and UNEP/POPS/POPRC.2/16. He noted that Mexico had proposed the listing of the alpha and beta isomers because of their similarities, in terms of Annex D criteria, to lindane (gamma-HCH), which was already under consideration by the Committee.

97. In response to an observation about uncertainty as to whether a comparison had been drawn, in accordance with paragraph 2 of Annex D, of the toxicity or ecotoxicity data available for the chemicals and the levels that would be expected to result from their long-range transport, the Chair encouraged Parties to include in future proposals such a comparison to facilitate the work of the Committee.

98. Following the discussion, the Committee agreed to establish a contact group to prepare evaluations of whether alpha and beta-HCH fulfilled the criteria in Annex D. It also agreed to establish a drafting group to prepare draft decisions on alpha and beta-HCH. Both groups were chaired by Mr. Henk Bouwman (South Africa).

99. The drafting group concluded that alpha and beta-HCH met the screening criteria listed in Annex D to the Convention and submitted draft decisions for consideration by the Committee.

100. The Committee adopted decision POPRC-2/9 on alpha hexachlorocyclohexane and decision POPRC-2/10 on beta hexachlorocyclohexane, as contained in annex I to the present report.

### **F. Intersessional working groups**

101. In adopting its decisions on chemicals, the Committee decided, in accordance with paragraph 6 of Article 8 of the Convention and paragraph 29 of decision SC-1/7 of the Conference of the Parties to the Stockholm Convention, to establish intersessional ad hoc working groups to review the proposals further and to prepare draft risk profiles in accordance with Annex E to the Convention. It was agreed that the chair of any given group could declare that group closed and thereby convert it into a drafting group. The composition of those groups is contained in annex V to the present report.

## **VII. Other matters**

### **A. Terms of office of the members of the Committee**

102. In considering the item, the Committee had before it a note by the Secretariat on the terms of office of the members of the Committee (UNEP/POPS/POPRC.2/INF/10). The Chair recalled that half of the members of the Committee had been elected for a two-year term and the others for a four-year term. All the current members would be eligible to attend the third meeting of the Committee. The terms of office of those members with initial terms of two years would expire in May 2008, which would be after the third meeting of the Conference of the Parties, but before the fourth meeting; therefore, the Conference, at its third meeting, would need to decide on a list of Parties that were to nominate a member to the Committee to fill the offices of those whose initial term expired on 4 May 2008.

103. The Committee took note of the information presented in the note on the terms of office of the members of the Committee.

### **B. Side event on the Committee's work and achievements**

104. The Committee agreed to hold a side event at the third meeting of the Conference of the Parties to provide information on the working procedures of the Committee. Such a side event would provide an opportunity to explain what type of information was being requested in the letters sent out to Parties and observers, to inform participants of the chemicals currently under consideration by the Committee and to determine whether the Committee's decisions were clearly understood. A small committee comprising the Chair, Vice-Chair and other interested members and observers would be established during the intersessional period to prepare the programme for that side event.

### **C. Intersessional work on any newly proposed chemicals**

105. The Committee agreed that, in the event that chemicals were newly proposed during the intersessional period, the Chair would request a member of the Committee to undertake some preparatory work to assist the Committee in its consideration of those chemicals at its next meeting.

## **VIII. Dates and venue of the third meeting of the Committee**

106. The Committee agreed to hold its third meeting in Geneva from 19 to 23 November 2007. A meeting for intersessional working groups would be held on Sunday, 18 November 2007, in English only.

## **IX. Adoption of the report**

107. The Committee adopted the present report on the basis of the drafts contained in documents UNEP/POPS/POPRC.2/L.1 and Add.1 as amended and on the understanding that the Rapporteur would be entrusted with its finalization, working in consultation with the Secretariat.

## **X. Closure of the meeting**

108. The meeting was declared closed by the Chair at 5.30 p.m. on Friday, 10 November 2006.

## Annex I

### Decisions adopted by the Persistent Organic Pollutants Review Committee at its second meeting

#### Decision POPRC-2/1: Commercial pentabromodiphenyl ether

*The Persistent Organic Pollutants Review Committee,*

*Having completed* the risk profile for commercial pentabromodiphenyl ether in accordance with paragraph 6 of Article 8 of the Convention,

1. *Adopts* the risk profile for commercial pentabromodiphenyl ether found in document UNEP/POPS/POPRC/17/Add.1;
2. *Decides*, in accordance with paragraph 7 (a) of Article 8 of the Convention, that commercial pentabromodiphenyl ether is likely, as a result of its long-range environmental transport, to lead to significant adverse human health and environmental effects such that global action is warranted;
3. *Decides furthermore*, in accordance with paragraph 7 (a) of Article 8 of the Convention and paragraph 29 of decision SC-1/7 of the Conference of the Parties to the Stockholm Convention, to establish an ad hoc working group to prepare a risk management evaluation that includes an analysis of possible control measures for commercial pentabromodiphenyl ether in accordance with Annex F to the Convention;
4. *Invites*, in accordance with paragraph 7 (a) of Article 8 of the Convention, Parties and observers to submit to the Secretariat the information specified in Annex F before 2 February 2007.

#### Decision POPRC-2/2: Chlordecone

*The Persistent Organic Pollutants Review Committee,*

*Having completed* the risk profile for chlordecone in accordance with paragraph 6 of Article 8 of the Convention,

*Taking into account* the high potential of chlordecone to persist in the environment, to bioaccumulate and biomagnify and to represent a hazard for humans and wildlife at very low levels,

1. *Adopts* the risk profile for chlordecone contained in document UNEP/POPS/POPRC/17/Add.2;
2. *Invites* the ad hoc working group on chlordecone which prepared the risk profile to explore any further information on long-range environmental transport and risk estimations and, if appropriate, to revise the risk profile for consideration by the Committee at its third meeting;
3. *Considers that*, although the information on long-range environmental transport is not fully conclusive, there is evidence suggesting the relevance of some transport pathways;
4. *Decides*, in accordance with paragraph 7 (a) of Article 8 of the Convention, and taking into account that a lack of full scientific certainty should not prevent a proposal from proceeding, that chlordecone is likely, as a result of its long-range environmental transport, to lead to significant adverse human health and environmental effects such that global action is warranted;
5. *Decides furthermore*, in accordance with paragraph 7 (a) of Article 8 of the Convention and paragraph 29 of decision SC-1/7 of the Conference of the Parties to the Stockholm Convention, to establish an ad hoc working group to prepare a risk management evaluation that includes an analysis of possible control measures for chlordecone in accordance with Annex F to the Convention;
6. *Invites*, in accordance with paragraph 7 (a) of Article 8 of the Convention, Parties and observers to submit to the Secretariat the information specified in Annex F for chlordecone before 2 February 2007.

## Decision POPRC-2/3: Hexabromobiphenyl

*The Persistent Organic Pollutants Review Committee,*

*Having completed* the risk profile for hexabromobiphenyl in accordance with paragraph 6 of Article 8 of the Convention,

1. *Adopts* the risk profile for hexabromobiphenyl contained in document UNEP/POPS/POPRC/17/Add.3;
2. *Requests* the ad hoc working group which prepared the risk profile on hexabromobiphenyl to refine the risk profile further by providing estimations of the risks to human health and the environment from exposure to hexabromobiphenyl, which should include the potential risk associated with the presence of hexabromobiphenyl in articles and wastes;
3. *Decides*, in accordance with paragraph 7 (a) of Article 8 of the Convention, that hexabromobiphenyl is likely, as a result of its long-range environmental transport, to lead to significant adverse human health and environmental effects such that global action is warranted;
4. *Decides furthermore*, in accordance with paragraph 7 (a) of Article 8 of the Convention and paragraph 29 of decision SC-1/7 of the Conference of the Parties to the Stockholm Convention, to establish an ad hoc working group to prepare a risk management evaluation that includes an analysis of possible control measures for hexabromobiphenyl in accordance with Annex F to the Convention;
5. *Invites*, in accordance with paragraph 7 (a) of Article 8 of the Convention, Parties and observers to submit to the Secretariat before 2 February 2007 the information specified in Annex F for hexabromobiphenyl and further information to allow refinement of the hazard assessment and the risk profile of hexabromobiphenyl.

## Decision POPRC-2/4: Lindane

*The Persistent Organic Pollutants Review Committee,*

*Having completed* the risk profile for lindane in accordance with paragraph 6 of Article 8 of the Convention,

1. *Adopts* the risk profile for lindane contained in document UNEP/POPS/POPRC/17/Add.4;
2. *Decides*, in accordance with paragraph 7 (a) of Article 8 of the Convention, that lindane is likely, as a result of its long-range environmental transport, to lead to significant adverse human health and environmental effects such that global action is warranted;
3. *Decides furthermore*, in accordance with paragraph 7 (a) of Article 8 of the Convention and paragraph 29 of decision SC-1/7 of the Conference of the Parties of the Stockholm Convention, to establish an ad hoc working group to prepare a risk management evaluation that includes an analysis of possible control measures for the chemical in accordance with Annex F to the Convention;
4. *Invites*, in accordance with paragraph 7 (a) of Article 8 of the Convention, Parties and observers to submit to the Secretariat the information specified in Annex F before 2 February 2007;
5. *Takes note* of decisions POPRC-2/9 and POPRC-2/10, in which the Committee decided that the proposals for listing alpha hexachlorocyclohexane and beta hexachlorocyclohexane in Annexes A, B and/or C to the Convention have met the screening criteria set out in Annex D;
6. *Recognizes* the inherent association of the production of these isomers of hexachlorocyclohexane to the intended production of lindane;
7. *Invites* Parties and observers to submit to the Secretariat information on alpha hexachlorocyclohexane and beta hexachlorocyclohexane as specified in Annex F before 2 February 2007.

## Decision POPRC-2/5: Perfluorooctane sulfonate

*The Persistent Organic Pollutants Review Committee,*

*Having completed* the risk profile for perfluorooctane sulfonate in accordance with paragraph 6 of Article 8 of the Convention,

1. *Adopts* the risk profile for perfluorooctane sulfonate contained in document UNEP/POPS/POPRC/17/Add.5;
2. *Decides*, in accordance with paragraph 7 (a) of Article 8 of the Convention, that perfluorooctane sulfonate is likely, as a result of its long-range environmental transport, to lead to significant adverse human health and environmental effects such that global action is warranted;
3. *Also decides*, that issues related to the inclusion of potential perfluorooctane sulfonate precursors should be dealt with in developing the draft risk management evaluation for perfluorooctane sulfonate;
4. *Further decides*, in accordance with paragraph 7 (a) of Article 8 of the Convention and paragraph 29 of decision SC-1/7 of the Conference of the Parties of the Stockholm Convention, to establish an ad hoc working group to prepare a risk management evaluation that includes an analysis of possible control measures for perfluorooctane sulfonate and potential perfluorooctane sulfonate precursors, in accordance with Annex F to the Convention;
5. *Invites*, in accordance with paragraph 7 (a) of Article 8 of the Convention, Parties and observers to submit to the Secretariat the information specified in Annex F for perfluorooctane sulfonate and potential perfluorooctane sulfonate precursors, as well as other specific information related to potential perfluorooctane sulfonate precursors, before 2 February 2007 .

## Decision POPRC-2/6: Commercial octabromodiphenyl ether

*The Persistent Organic Pollutants Review Committee,*

*Having examined* the proposal by the European Community and its member States that are Parties to the Stockholm Convention on Persistent Organic Pollutants to list commercial octabromodiphenyl ether in Annexes A, B and/or C to the Convention and having applied the screening criteria specified in Annex D to the Convention,

*Noting* that the commercial product hereinunder termed commercial octabromodiphenyl ether is a mixture of brominated diphenyl ether congeners in which the main components are heptabromodiphenyl ethers (Chemicals Abstracts Service number 68928-80-3) and octabromodiphenyl ethers (CAS 32536-52-0), which have the highest concentration by weight with respect to the other components of the mixture,

1. *Decides*, in accordance with paragraph 4 (a) of Article 8 of the Convention, that it is satisfied that the screening criteria have been fulfilled for commercial octabromodiphenyl ether, as set out in the evaluation contained in the annex to the present decision;
2. *Decides furthermore*, in accordance with paragraph 6 of Article 8 of the Convention and paragraph 29 of decision SC-1/7 of the Conference of the Parties of the Stockholm Convention, to establish an ad hoc working group to review the proposal further and to prepare a draft risk profile in accordance with Annex E to the Convention;
3. *Invites*, in accordance with paragraph 4 (a) of Article 8 of the Convention, Parties and observers to submit to the Secretariat the information specified in Annex E before 2 February 2007.

### Annex to decision POPRC-2/6

#### Evaluation of commercial octabromodiphenyl ether against the criteria of Annex D

##### A. Background

1. The primary source of information for the preparation of this evaluation was the proposal submitted by the European Community and its member States that are Parties to the Convention, contained in document UNEP/POPS/POPRC.2/INF/4.



2. Additional sources of scientific information included critical reviews prepared by recognized authorities, including the European Union risk assessment report on diphenyl ether, octabromo derivative.

## B. Evaluation

3. The proposal was evaluated in the light of the requirements of Annex D, regarding the identification of the chemical (paragraph 1 (a)) and the screening criteria (paragraphs 1 (b)–(e)):

### (a) Chemical identity:

- (i) Adequate information was provided in the proposal and supporting information. The proposal relates to commercial octabromodiphenyl ether;
- (ii) The chemical structure for the pure compound octabromodiphenyl ether was provided. Commercial octabromodiphenyl ether is a mixture of several polybrominated diphenyl ethers and congeners (pentabromodiphenyl ether isomers, hexabromodiphenyl ether isomers, heptabromodiphenyl ether isomers, octabromodiphenyl ether isomers, nonabromodiphenyl ether isomers and decabromodiphenyl ether isomers);

The chemical identity of commercial octabromodiphenyl ether and the pure compound octabromodiphenyl ether is adequately established;

### (b) Persistence:

- (i) There was no degradation in an OECD test (301D) over 28 days (Ref. 3);
- (ii) Elevated concentrations of polybromodiphenyl ethers, including octa and hepta bromodiphenyl ether congeners, were found in agricultural soil more than 20 years after treatment of the soil with contaminated sewage sludge, which is consistent with very long half-lives for components of commercial octabromodiphenyl ether (Ref. 2);

There is sufficient evidence that commercial octabromodiphenyl ether meets the persistence criterion;

### (c) Bioaccumulation:

- (i) The log Kow value for the commercial product has been determined to be around 6.29 (Ref. 3). Experimental results presented in the European Union risk assessment report indicates that octa and heptabromodiphenyl ethers have low bioconcentration factors (less than 10–36); these results have been confirmed by data presented and peer reviewed by the Japanese Government. Nevertheless, other brominated diphenyl ethers present in commercial octabromodiphenyl ether have been found to have higher bioconcentration factors, for example 11,700–17,700 for pentabromodiphenyl ethers (Ref. 3) and 1,000–5,600 for hexabromodiphenyl ethers (Ref. 3);
- (ii) and (iii) Field data provide evidence for the potential for bioaccumulation of heptabromodiphenyl ether. Concentrations of 220–270 ng/g lipid weight in eggs of the peregrine falcon in northern Sweden and Greenland have been reported (Refs. 4 and 5). This evidence demonstrates that, despite its large molecular weight, the molecule is found in top predators at levels similar to those of bioaccumulable tetra and penta bromodiphenyl ether. In addition, the estimated half-life in humans is 100 days (Ref. 6), suggesting a potential for bioaccumulation. In soil biota, the soil organism accumulation factor for octabromodiphenyl ether 197 has been calculated as 2 (Ref. 2).

There is sufficient evidence that commercial octabromodiphenyl ether meets the bioaccumulation criterion;

### (d) Potential for long-range environmental transport:

- (i) and (iii) The vapour pressure of commercial octabromodiphenyl ether is reported to be  $6.59 \times 10^{-6}$  Pa at 21°C (Refs. 1 and 3). The atmospheric half-life of the pure compound octabromodiphenyl ether is estimated to be 76 days, which means that long-range transport is possible for the substance;

- (ii) Monitoring data show that the hexa and hepta bromodiphenyl ether congeners are present in biota in remote regions (Refs. 7 and 8) and in Arctic air (Ref. 9);

There is sufficient evidence that commercial octabromodiphenyl ether meets the criterion on potential for long-range environmental transport;

(e) **Adverse effects:**

- (i) There are no data provided on the direct toxicological effects of commercial octabromodiphenyl ether or polybromodiphenyl ether congeners in humans;
- (ii) There is evidence of reproductive toxicity in mammals. The lowest no observed adverse effect level (NOAEL) from the available mammalian toxicity data for the commercial octabromodiphenyl ether product was determined as 2 mg/kg bw/day in a developmental study in rabbits (Ref. 3). Additional information on the developmental toxicity of octabromodiphenyl ether has been published recently (Ref. 10);

There is sufficient evidence that commercial octabromodiphenyl ether meets the criterion on adverse effects;

## C. Conclusion

4. The Committee concluded that commercial octabromodiphenyl ether meets the screening criteria specified in Annex D.

### References

1. UNEP/POPS/POPRC.2/INF/4.
2. Sellström, U., De Wit, C.A., Lundgren, N., Tysklind, M. (2005). *Effect of sewage-sludge application on concentrations of higher-brominated diphenyl ethers in soils and earthworms*. Environmental Science and Technology, 39: 9064–9070.
3. *European Union Risk Assessment Report for Diphenyl Ether, Octabromo Derivative (CAS no: 32536-52-0, Einecs no.: 251-087-9)*. Office for Official Publications of the European Communities, 2003.
4. Lindberg P, Sellström, U., Haggberg, L., De Wit, C.A. (Jan. 2004). *Higher brominated diphenyl ethers and hexabromocyclododecane found in eggs of peregrine falcons (Falco peregrinus) breeding in Sweden*. Environmental Science and Technology, 38(1):93–6.
5. Vorkamp, K., Thomsen, M., Falk, K., Leslie, H., Moller, S., Sorensen, P.B. (Nov. 2005). *Temporal development of brominated flame retardants in peregrine falcon (Falco peregrinus) eggs from South Greenland (1986–2003)*. Environmental Science and Technology, 39(21):8199-206.
6. Thuresson, K., Hoglund, P., Hagmar, A.S., Bergman, A., Jakobsson, K. (Feb. 2006) *Apparent half-lives of hepta to decabrominated diphenyl ethers in human serum as determined in occupationally exposed workers*. Environmental Health Perspectives, 114 (2): 176–181.
7. Muir, D. C. G., Alaei, M., Butt, C., Braune, B., Helm, P., Mabury, S., Tomy, G., Wang, X. (2004). *New contaminants in Arctic biota*. Synopsis of research conducted under the 2003–2004 Northern Contaminants Programme, Indian and Northern Affairs, Ottawa, Canada, pp. 139–148.
8. Muir, D.C., Backus, S., Derocher, A.E., Dietz, R., Evans, T.J., Gabrielsen, G.W., Nagy, J., Norstrom, R.J., Sonne, C., Stirling, I., Taylor, M.K., Letcher, R.J. (Jan. 2006) *Brominated flame retardants in polar bears (Ursus maritimus) from Alaska, the Canadian Arctic, East Greenland and Svalbard*. Environmental Science and Technology 40(2):449–55.
9. Wang, X.M., Ding, X., Mai, B.X., Xie, Z. Q., Xiang, C.H., Sun, L.G., Sheng, G.Y., Fu, J. M. and Zeng, E. Y. (2005) *Polybrominated diphenyl ethers in airborne particulates collected during a research expedition from the Bohai Sea to the Arctic*, Environmental Science and Technology 39:7803–7809.
10. Viberg H, Johansson N, Fredriksson A, Eriksson J, Marsh G, Eriksson P. (2006). *Neonatal exposure to higher brominated diphenyl ethers, hepta-, octa-, or nonabromodiphenyl ether, impairs spontaneous behaviour and learning and memory functions of adult mice*. Toxicological Sciences. 92(1):211-8.

## Decision POPRC-2/7: Pentachlorobenzene

*The Persistent Organic Pollutants Review Committee,*

*Having examined* the proposal by the European Community and its member States that are Parties to the Stockholm Convention on Persistent Organic Pollutants to list pentachlorobenzene (Chemical Abstracts Service number 608-93-5) in Annexes A, B and/or C to the Convention and having applied the screening criteria specified in Annex D to the Convention,

1. *Decides*, in accordance with paragraph 4 (a) of Article 8 of the Convention, that it is satisfied that the screening criteria have been fulfilled for pentachlorobenzene, as set out in the evaluation contained in the annex to the present decision;
2. *Decides furthermore*, in accordance with paragraph 6 of Article 8 of the Convention and paragraph 29 of decision SC-1/7 of the Conference of the Parties to the Stockholm Convention, to establish an ad hoc working group to review the proposal further and to prepare a draft risk profile in accordance with Annex E to the Convention;
3. *Invites*, in accordance with paragraph 4 (a) of Article 8 of the Convention, Parties and observers to submit to the Secretariat the information specified in Annex E before 2 February 2007.

### Annex to decision POPRC.2/7

#### Evaluation of pentachlorobenzene against the criteria of Annex D

##### A. Background

1. The primary source of information for the preparation of this evaluation was the proposal submitted by the European Community and its member States that are Parties to the Convention, contained in document UNEP/POPS/POPRC.2/INF/5.
2. Additional sources of scientific information included critical reviews prepared by recognized authorities and peer-reviewed scientific papers.

##### B. Evaluation

3. The proposal was evaluated in the light of the requirements of Annex D, regarding the identification of the chemical (paragraph 1 (a)) and the screening criteria (paragraphs 1 (b)–(e)):
  - (a) **Chemical identity:**
    - (i) Adequate information was provided in the proposal and supporting documents;
    - (ii) The chemical structure was provided;

The chemical identity of pentachlorobenzene is clearly established;
  - (b) **Persistence:**
    - (i) The estimated half-life in water of pentachlorobenzene ranges from 194 to 1,250 days and the estimated half-life for anaerobic biodegradation in deeper water range from 776 to 1,380 days. These values clearly exceed the persistency criteria. In sediment cores the half-lives are estimated to be of several years and in soils half-lives of 194–345 days have been observed (Refs. 1, 2, 3 and 4);
    - (ii) There are no specific monitoring data available demonstrating persistency but the substance is detected in sediments supporting the conclusion of high persistency (Ref. 1);

There is sufficient evidence that pentachlorobenzene meets the criterion on persistence;
  - (c) **Bioaccumulation:**
    - (i) Log Kow of pentachlorobenzene varies between 4.8 and 5.18. Reported bioconcentration factors in aquatic species vary between 3,400 and 13,000 on whole body weight basis (Ref. 1.). Based on these data, the weight of evidence demonstrates that the bioconcentration factor for pentachlorobenzene is higher than 5,000 (Ref. 5). Bioaccumulation factors of 810 in mussels (*Mytilus*

*edulis*) and 20,000 in rainbow trout (*Oncorhynchus mykiss*) have been reported (Ref. 6);

- (ii) and (iii) Toxicokinetic data on domestic birds indicate accumulation during food exposure and a half-life for adipose tissue of 53 days (Ref. 12);

Pentachlorobenzene has been detected in the air in remote areas, including Arctic air with a concentration range from 0.017– 0.138 ng/m<sup>3</sup> (Refs. 1 and 10). There is also a good amount of monitoring data in Arctic mammals, birds, fish, lake sediments and moss, in remote areas (Refs. 1 and 11);

There is sufficient evidence that pentachlorobenzene meets the criterion on bioaccumulation;

**(d) Potential for long-range environmental transport:**

- (i) and (ii) Monitoring data show that the substance is found in remote areas.

Pentachlorobenzene has been detected in the air in remote areas, including Arctic air with a concentration range from 0.017– 0.138 ng/m<sup>3</sup> (Refs. 1 and 10). There is also a good amount of monitoring data in Arctic mammals, birds, fish, lake sediments and moss, in remote areas (Refs. 1 and 11);

- (iii) Pentachlorobenzene has a moderately high vapour pressure (2.2 Pa at 25°C) and modelling data show an estimated half-life in air significantly greater than two days. The estimated half-lives in air are between 45 and 467 days. There are also modelling data demonstrating the potential for long-range environmental transport (Refs. 1, 2, 7, 8 and 9);

There is sufficient evidence that pentachlorobenzene meets the criterion on potential for long-range environmental transport;

**(e) Adverse effects:**

- (i) There are no specific data available on adverse effects to human health or to the environment;
- (ii) There are toxicity and ecotoxicity data available for pentachlorobenzene. In general, studies with laboratory mammals show moderate toxicity in acute exposure. Pentachlorobenzene demonstrates high acute toxicity in the aquatic environment with the lowest LC50 value for fresh water organisms being 250 µg/l for fish. The lowest no observed effect concentration (NOEC) is 10 µg/l for crustaceans (Refs. 1 and 7);

There is sufficient evidence that pentachlorobenzene meets the criterion on adverse effects.

## C. Conclusion

4. The Committee concluded that pentachlorobenzene meets the screening criteria specified in Annex D.

### References

1. UNEP/POPS/POPRC.2/INF/5.
2. Canadian Environmental Protection Act (1993). *Priority Substances List Assessment Report: Pentachlorobenzene*. Government of Canada.
3. Beurskens, J.E.M. (1994). *Environmental Science and Technology*, 28, 701–706.
4. Beck, J. and Hansen, K.E. (1974). *The degradation of quinterozone, pentachlorobenzene, hexachlorobenzene and pentachloroaniline in soil*. *Pesticide Science.*, 5, 41–48.
5. Van de Plassche, E.J. (1994). *Towards integrated environmental quality objectives for several compounds with a potential for secondary poisoning*. National Institute for Public Health and the Environment (RIVM) report no. 679101 012.
6. Canadian Environmental Protection Act (2002) *Follow-up report on five PSL1 substances for which there was insufficient information to conclude whether the substances constitute a danger to the environment*. Government of Canada.

7. Van de Plassche, E.J., Schwegler, A.M.G.R., Rasenberg, M. and Schouten, A. (2002) *Pentachlorobenzene*. Dossier prepared for the third meeting of the United Nations Economic Commission for Europe (UNECE) Ad hoc Expert Group on Persistent Organic Pollutants. Royal Haskoning report L0002.A0/R0010/EVDP/TL0.
8. Mantseva, E., Dutchak, S., Rozovskaya, O. and Shatalov, V. (2004). *EMEP contribution to the preparatory work for the review of the CLRTAP Protocol on Persistent Organic Pollutants. EMEP MSC-E Information Note 5/2004*. Meteorological Synthesizing Centre –East, Moscow, Russia.
9. Vulykh, N., Dutchak, S., Mantseva, E. and Shatalov, V. (2005) *EMEP contribution to the preparatory work for the review of the Convention on Long Range Transboundary Air Pollution Protocol on Persistent Organic Pollutants. New substances: Model assessment of potential for long-range transboundary atmospheric transport and persistence of Pentachlorobenzene*.
10. Shen, L., Wania, F., Lei, Y.D., Teixeira, C., Muir, D.C.G. and Bidleman, T.F. (2005) *Atmospheric distribution and long-range transport behaviour of organochlorine pesticides in North America*. Environmental Science and Technology 39: 409–420.
11. Verreault, J., Muir, D.C.G., Norstrom, R. J., Stirling, I., Fisk, A.T., Gabrielsen, G.W., Derocher, A. E., Evans, T. J., Dietz, R., Sonne, C., Sandala, G. M., Gebbink, W., Riget, F. F., Born, E. W., Taylor, M. K., Nagy, J. and Letcher, R. J. (2005) *Chlorinated hydrocarbon contaminants and metabolites in polar bears (Ursus maritimus) from Alaska, Canada, East Greenland, and Svalbard: 1996–2002*. Science of the Total Environment, 352, 369–390.
12. Dunn J.S., Booth N.H., Bush P.B., Farrell R.L., Thomason D. and Goetsch D.D. (1978). *The accumulation and elimination of tissue residues after feeding pentachloronitrobenzene to white leghorn cockerels*. International Journal of Poultry Science, 57(6): 1533–8.

### Decision POPRC-2/8: Short-chained chlorinated paraffins

*The Persistent Organic Pollutants Review Committee,*

*Having examined* the proposal by the European Community and its member States that are Parties to the Stockholm Convention on Persistent Organic Pollutants to list short-chained chlorinated paraffins (Chemical Abstracts Service number 85535-84-8) in Annexes A, B and/or C to the Convention and having applied the screening criteria specified in Annex D to the Convention,

1. *Decides*, in accordance with paragraph 4 (a) of Article 8 of the Convention, that it is satisfied that the screening criteria have been fulfilled for short-chain chlorinated paraffins, as set out in the evaluation contained in the annex to the present decision;
2. *Decides also* that the variability of the environmental fate properties of the short-chained chlorinated paraffins congeners covered by the proposal should be addressed in developing the draft risk profile;
3. *Decides furthermore*, in accordance with paragraph 6 of Article 8 of the Convention and paragraph 29 of decision SC-1/7 of the Conference of the Parties to the Stockholm Convention, to establish an ad hoc working group to review the proposal further and to prepare a draft risk profile in accordance with Annex E to the Convention;
4. *Invites*, in accordance with paragraph 4 (a) of Article 8 of the Convention, Parties and observers to submit to the Secretariat the information specified in Annex E before 2 February 2007.

### Annex to decision POPRC-2/8

#### Evaluation of short-chained chlorinated paraffins against the criteria of Annex D

##### A. Background

1. The primary source of information for the preparation of this evaluation was the proposal submitted by the European Community and its member States that are Parties to the Convention, contained in document UNEP/POPS/POPRC.2/INF/6.

2. Additional sources of scientific information included critical reviews prepared by recognized authorities (including the European Union risk assessment report on alkanes, C10-13, chloro).

## B. Evaluation

3. The proposal was evaluated in the light of the requirements of Annex D, regarding the identification of the chemical (paragraph 1 (a)) and the screening criteria (paragraphs 1 (b)–(e)):

### (a) Chemical identity:

- (i) Adequate information was provided in the proposal, which relates to short-chained chlorinated paraffins (n-paraffins that have carbon chain lengths of 10-13 carbon atoms), Chemical Abstracts Services no. 85535-84-8. The commercial short-chained chlorinated paraffins mixtures typically have a degree of chlorination of greater than 48 per cent by weight;
- (ii) The chemical structure was provided;

The chemical identity of short-chained chlorinated paraffins is adequately established;

### (b) Persistence:

- (i) There is one experimental study which examined biodegradability. Compounds with carbon number 12 and one chlorine (1-chlorodecane) were readily degradable under OECD test guidelines. Most other short-chained chlorinated paraffins, however, were resistant to degradation (Ref. 4). The weight of evidence indicates that the half-life of short-chained chlorinated paraffins in sediment is greater than 1 year (Refs. 1 and 2);
- (ii) Most short-chained chlorinated paraffin congeners are not readily or inherently biodegradable in standard tests. It can be concluded from simulation tests that short-chained chlorinated paraffins with low chlorine content (e.g. <50% wt Cl) may biodegrade slowly in the environment in the presence of adapted microorganisms. (Refs. 1 and 2);

There is sufficient evidence that short-chained chlorinated paraffins meet the persistence criterion;

### (c) Bioaccumulation:

- (i) The reported log Kow value of different short-chained chlorinated paraffins ranges from 4.39 to 8.69. The bioconcentration potential differs depending on the number of carbons and the number of chlorine atoms. High bioconcentration factors (BCFs) in fish have been reported. In fish, when the carbon number is 11 and the chlorine number is 7–10, the BCF values were as high as 11,000. Whole body BCFs of 1,173–7,816 have been determined in laboratory studies in fish, and an overall BCF value of 36,500 for C10-13 short-chained chlorinated paraffins have been estimated *in situ* for lake trout. Bioconcentration in mussels has also been assessed with reported whole body BCFs ranging from 5,785 to 40,900. (Refs. 1, 2, 3 and 4);
- (ii) and (iii) Levels of short-chained chlorinated paraffins in marine mammals from various regions of the Arctic have been reported, as well as from Canada and Greenland. There is also evidence of short-chained chlorinated paraffins accumulating in fish species from Lake Ontario, Canada. Moreover, short-chained chlorinated paraffins have been detected in breast milk. (Refs. 1, 5, 6 and 7);

There is sufficient evidence that short-chain chlorinated paraffins meet the bioaccumulation criterion;

### (d) Potential for long-range environmental transport:

- (i) and (ii) Atmospheric levels of total short-chained chlorinated paraffins reported in the Arctic environment ranged from 1.07 to 7.25 pg/m<sup>3</sup> (Ref. 8). Occurrence of total short-chained chlorinated paraffins in Arctic surface sediments, marine mammals and fish has also been reported. (Refs. 1, 2 and 3);
- (iii) Atmospheric half-lives exceeding the screening criteria of 2 days (1.9–7.2 days) have been calculated from the reaction rate with hydroxyl radical concentrations in the atmosphere for short-chained chlorinated paraffins. A vapour pressure of

0.0213 Pa at 40°C has been assumed for a short-chained chlorinated paraffin with chlorine content of approximately 50 per cent. Henry's Law constants range from 0.7 to 18 Pa m<sup>3</sup>/mol. Water solubility ranges from 0.022 to 0.994 mg/litre. (Refs. 1 and 2);

There is sufficient evidence that short-chained chlorinated paraffins meet the criterion on potential for long-range environmental transport;

**(e) Adverse effects:**

- (i) There are no specific data available;
- (ii) There are animal data showing a potential of short-chained chlorinated paraffins to have adverse effects on human health, including effects on the liver and thyroid. In rodent carcinogenicity studies, dose-related increases in the incidence of adenomas and carcinomas were observed in the liver, thyroid and kidney. Although likely underlying mechanisms for these tumours suggests that they are not relevant to human health, short-chained chlorinated paraffins are regarded as possible carcinogens. The no observed adverse effect level (NOAEL) for induction of tumours is 100 mg/kg bw/day. Short-chained chlorinated paraffins are of high toxicity to a variety of aquatic invertebrates with no observed effect concentration (NOEC) values well below 0.1 mg/L. (Ref. 1, 2 and 3).

There is sufficient evidence that short-chained chlorinated paraffins meet the criterion on adverse effects.

## C. Conclusion

4. The Committee concluded that short-chained chlorinated paraffins meet the screening criteria specified in Annex D.

### References

1. UNEP/POPS/POPRC.2/INF/6.
2. *European Union Risk Assessment Report. Alkanes, C10-13, chloro (CAS No: 85535-84-8, Eines No.: 287-476-5). Risk Assessment.* Office for Official Publications of the European Communities, 2000.
3. Filyk G., Lander L., Eggleton, M., Muir D. and Puckett K. (2003). *Short-Chain Chlorinated Paraffins (SCCPs) Substance-Final Draft II.* Environment Canada. Dossier prepared for UNECE ad hoc Expert Group on POPs.
4. Data peer-reviewed by the Chemical Products Council of the Ministry of Economy, Trade and Industry, Japan ([www.safe.nite.go.jp/data/hazkizon/pk\\_kizon\\_data\\_result.home\\_data](http://www.safe.nite.go.jp/data/hazkizon/pk_kizon_data_result.home_data)).
5. Tomy, G.T. (1998). *Environmental chemistry and toxicology of polychlorinated n-alkanes.* Reviews of environmental contamination and toxicology, 158:53-128.
6. Muir, D., Bennie, D., Teixeira, C., Fisk, A., Tomy, G., Stern, G. and Whittle, M. (2001). *Short-chain chlorinated paraffins: Are they persistent and bioaccumulative?* ACS Symposium Series, 773:184-202.
7. Thomas, G.O., Farrar, D., Braekevelt, E., Stern, G., Kalantzi, O.I., Martin, F.L. and Jones, K.C. (2006). *Short- and medium-chain length chlorinated paraffins in UK human milk fat.* Environment International 32:34-40.
8. Borgen, A.R., Schlabach, M. and Gundersen, H. (2000). *Polychlorinated alkanes in Arctic air.* Organohalogen Compounds, 47:272-275.

## Decision POPRC-2/9: Alpha hexachlorocyclohexane

*The Persistent Organic Pollutants Review Committee,*

*Having examined* the proposal by Mexico, which is a Party to the Stockholm Convention on Persistent Organic Pollutants, to list alpha hexachlorocyclohexane (alpha-HCH, Chemical Abstracts Service number 319-84-6) in Annexes A, B and/or C to the Convention and having applied the screening criteria specified in Annex D to the Convention,

1. *Decides*, in accordance with paragraph 4 (a) of Article 8 of the Convention, that it is satisfied that the screening criteria have been fulfilled for alpha-HCH, as set out in the evaluation contained in the annex to the present decision;
2. *Decides furthermore*, in accordance with paragraph 6 of Article 8 of the Convention and paragraph 29 of decision SC-1/7 of the Conference of the Parties of the Stockholm Convention, to establish an ad hoc working group to review the proposal further and to prepare a draft risk profile in accordance with Annex E to the Convention;
3. *Invites*, in accordance with paragraph 4 (a) of Article 8 of the Convention, Parties and observers to submit to the Secretariat the information specified in Annex E before 2 February 2007.

### Annex to decision POPRC-2/9

#### Evaluation of alpha-HCH against the criteria of Annex D

##### A. Background

1. The primary source of information for the preparation of this evaluation was the proposal submitted by Mexico, contained in document UNEP/POPS/POPRC.2/INF/7.
2. Additional sources of scientific information included critical reviews prepared by recognized authorities and peer-reviewed scientific papers.

##### B. Evaluation

3. The proposal was evaluated in the light of the requirements of Annex D, regarding the identification of the chemical (paragraph 1 (a)) and the screening criteria (paragraphs 1 (b)–(e)):

###### (a) Chemical identity:

- (i) Adequate information was provided in the proposal and supporting documents;
- (ii) The chemical structures were provided. Alpha-HCH consists of two enantiomers referred to as (+)-alpha-HCH and (-)-alpha-HCH. Information on specific physico-chemical properties was also provided;

The chemical identity of alpha-HCH is clearly established;

###### (b) Persistence:

- (i) Alpha-HCH is persistent in sea water with estimated half-lives exceeding the screening criteria value of two months. Calculated values can range from 0.6 to 23 years, depending on environmental conditions and the respective enantiomer (Refs. 1, 2 and 3). Half-lives reported for (+)- and (-)-alpha-HCH in Arctic freshwater were estimated to be 0.6 and 1.4 years (Ref. 1);

Alpha-HCH exhibits half-lives in soil laboratory and field studies of 48 to 125 days (anoxic conditions). Data from a field study with gamma-HCH would suggest that alpha-HCH disappears more rapidly (Ref. 4). Evidence also exists, however, that gamma-HCH can have a higher degradation rate than alpha-HCH (Ref. 5);

- (ii) Monitoring data from remote regions can serve as an indication of the persistence of alpha-HCH. Though emissions of alpha-HCH rapidly declined in the 1970s and 1980s, concentrations in the northern surface waters of the Pacific and in the Arctic Ocean can still be measured. This implies that alpha-HCH has



accumulated in the past in the water and constitutes a substantial reservoir (Refs. 6 and 7);

There is sufficient evidence that alpha-HCH meets the criterion on persistence;

**(c) Bioaccumulation:**

(i) The log Kow reported in the proposal is 3.8 (Ref. 1). Bioconcentration factors for invertebrates can reach values of 60 to 2,750 (whole body, dry weight basis (Ref. 4). Bioconcentration factors for fish were in the range of 313–2,400 (wet weight basis) (Refs. 8 and 9);

(ii) and (iii) The biomagnification factors for alpha-HCH for different trophic levels (zooplankton, invertebrates, fish, and mammals) are in the range of 1–16. (Refs. 10 and 11). According to field studies in Arctic marine food webs, it has been demonstrated that alpha-HCH stereoselectively bioaccumulates in marine species and has the ability to biomagnify to a greater extent than gamma-HCH, for which values of up to 4,220 have been reported (Ref. 12);

Alpha-HCH has been detected in blood and adipose tissue in humans (Ref. 13). It has also been detected in breast milk and placenta tissue, thus exposing offspring in critical periods of development (Refs. 14, 15 and 16);

Available information suggests that the food chain bioaccumulation of alpha-HCH is higher than for lindane (Ref. 12);

There is sufficient evidence that alpha-HCH meets the criterion on bioaccumulation;

**(d) Potential for long-range environmental transport:**

(i) and (iii) Alpha-HCH has a low vapour pressure ( $6 \times 10^{-3}$  Pa) and a low Henry's Law constant ( $6.86 \times 10^{-6}$  atm m<sup>3</sup> mol<sup>-1</sup>) (Ref. 1) which decreases with water temperature (Ref. 17). The estimated half-lives in air are in the range of 0.3–4 years, depending on the atmospheric hydroxyl radical (OH) concentration (Ref. 1). The dominant pathway for distribution of alpha-HCH to colder regions was the atmosphere, from which it is partitioned into cold water, (Refs. 18 and 7);

(ii) Monitoring data show that the substance is abundant in remote areas including the Arctic and Antarctica (Ref. 18). The levels of Alpha-HCH increase with latitude (Ref.17). Alpha-HCH is one of the major organochlorine substances found in Arctic air with a concentration of approximately 10–70 pg/m<sup>3</sup> (Ref. 17) and in the Arctic Ocean up to 6 ng/l (Ref. 6). Alpha-HCH has also been frequently detected in marine as well as in terrestrial species in Arctic and sub-Arctic regions (Ref. 6);

There is sufficient evidence that alpha-HCH meets the criterion on potential for long-range environmental transport;

**(e) Adverse effects:**

(i) Compared to gamma-HCH, toxicological data for alpha-HCH are limited. Acute toxicity values are cited in the proposal from the World Health Organization (Ref. 4). Alpha-HCH is associated with kidney and liver effects in laboratory animals. Alpha-HCH is a probable human carcinogen (Ref. 1). Several indications that alpha-HCH is related to cancer in humans exist, although studies concerning genotoxicity are inconclusive, suggesting weak genotoxicity of alpha-HCH (Ref. 12);

(ii) The assessment of lindane and other hexachlorocyclohexane isomers by the United States Environmental Protection Agency (Ref. 12) and the Arctic Monitoring and Assessment Programme report on health effects associated with persistent toxic substances (Ref. 17) indicate potential risks from dietary exposure of alpha-HCH to communities in Alaska, and others in the circumpolar Arctic region, who depend on subsistence foods, such as caribou, seal and whale;

There is sufficient evidence that alpha-HCH meets the criterion on adverse effects;

## C. Conclusion

4. The Committee concluded that alpha-HCH meets the screening criteria specified in Annex D.

### References

1. ATSDR, 2005. Toxicological Profile for Hexachlorocyclohexanes, U.S. Department of Health and Human Services, Public Health Service, Agency for Toxic Substances and Disease Registry, August, 2005. <http://www.atsdr.cdc.gov/toxprofiles/tp43.html>
2. Harner, T. et al., (1999) *Environmental Science and Technology*, 33, 1157–1164.
3. Ngabe, B. et al., (1993) *Environmental Science and Technology*, 27, 1930–1933.
4. WHO, 1991. IPCS International Programme on Chemical Safety. *Environmental Health Criteria Guide No. 123: Lindane (Alpha-HCH)*. United Nations Environment Programme. International Labour Organization. World Health Organization. Geneva, 1991. <http://www.inchem.org/documents/ehc/ehc/ehc123.htm>
5. Bachmann, A. et al., (1998) *Applied and Environmental Microbiology*, 54, 548–554.
6. Li, Y.F. et al., 2002. *The Transport of beta-hexachlorocyclohexane to the western Arctic Ocean: a contrast to alpha-HCH*. *Science of the Total Environment*. 291(1-3): 229–246.
7. Li, Y.F. and Macdonald, R.W (2005) *Science of the Total Environment*, 342, 87–106.
8. Oliver, B.G., and A.J. Niimi, 1985. *Bioconcentration factors of some halogenated organics for rainbow trout: Limitations in their use for prediction of environmental residues*. *Environmental Science and Technology*. 19(9): 842–849
9. Oliver G.B. and Niimi, A.J (1985) *Environmental Science and Technology*, 19: 842–849.
10. Hoekstra, P.F. et al (2003) *Environmental Toxicology and Chemistry*, 22(10): 2482–2491.
11. Moisey, J. et al. (2001) *Environmental Science and Technology*, 35: 1920–1927.
12. USEPA. *Assessment of lindane and other hexachlorocyclohexane isomers* [[http://www.epa.gov/oppsrd1/REDS/factsheets/lindane\\_isomers\\_fs.htm](http://www.epa.gov/oppsrd1/REDS/factsheets/lindane_isomers_fs.htm), 2006-09-25].
13. Siddiqui, M. K. J. et al., (2005) *Environmental Research*, 98: 250–257.
14. Shen, H, et al., (2006) *Chemosphere*, 62(3): 390–395.
15. Kinyamu, J. K. et al., (1998) *Bulletin of Environmental Contamination and Toxicology*, 60: 732–738.
16. Lederman, S.A. (1996) *Reproductive Toxicology*, 10(2), 93-104.
17. Arctic Monitoring and Assessment Programme: *AMAP Assessment 2002: Persistent Organic Pollutants in the Arctic*. Oslo, Norway, 2004.
18. Walker, K.; Vallero D. A.; Lewis R. G. (1999). *Factors influencing the distribution of lindane and other hexachlorohexanes*. *Environmental Science and Technology*. 33(24): 4373–4378.

## Decision POPRC-2/10: Beta hexachlorocyclohexane

### *The Persistent Organic Pollutants Review Committee,*

*Having examined* the proposal by Mexico, which is a Party to the Stockholm Convention on Persistent Organic Pollutants, to list beta hexachlorocyclohexane (Chemical Abstracts Service number 319-85-7) in Annexes A, B and/or C to the Convention and having applied the screening criteria specified in Annex D to the Convention,

1. *Decides*, in accordance with paragraph 4 (a) of Article 8 of the Convention, that it is satisfied that the screening criteria have been fulfilled for beta hexachlorocyclohexane, as set out in the evaluation contained in the annex to the present decision;
2. *Decides furthermore*, in accordance with paragraph 6 of Article 8 of the Convention and paragraph 29 of decision SC-1/7 of the Conference of the Parties to the Stockholm Convention, to establish an ad hoc working group to review the proposal further and to prepare a draft risk profile in accordance with Annex E to the Convention;
3. *Invites*, in accordance with paragraph 4 (a) of Article 8 of the Convention, Parties and observers to submit to the Secretariat the information specified in Annex E before 2 February 2007.

## Annex to decision POPRC-2/10

### Evaluation of beta hexachlorocyclohexane against the criteria of Annex D

#### A. Background

1. The primary source of information for the preparation of this evaluation was the proposal submitted by Mexico, contained in document UNEP/POPS/POPRC.2/INF/8.
2. Additional sources of scientific information included critical reviews prepared by recognized authorities and peer-reviewed scientific papers.

#### B. Evaluation

3. The proposal was evaluated in the light of the requirements of Annex D, regarding the identification of the chemical (paragraph 1 (a)) and the screening criteria (paragraphs 1 (b)–(e)):

##### (a) Chemical identity:

- (i) Adequate information was provided in the proposal and supporting documents;
- (ii) The chemical structure was provided. Information on specific physico-chemical properties of beta hexachlorocyclohexane (beta-HCH) was also provided;

The chemical identity of beta-HCH is clearly established;

##### (b) Persistence:

- (i) Beta-HCH is resistant to abiotic degradation processes like photolysis and hydrolysis (Ref. 1);
- (ii) Beta-HCH showed half-lives in soil laboratory and field studies of 91–184 days (Ref. 2). A compilation of degradation data, however, underlay the assertion of the proposal that beta-HCH is, due to its chemical structure, the most persistent HCH isomer (Ref. 3). It comprised 80–100 per cent of the total HCH residues found in soil and vegetation on land surrounding an industrial landfill in Germany 10 years after the final HCH input (Ref. 2);
- (iii) Monitoring data from the Arctic can serve as an indication for the persistence of beta-HCH. There is evidence that the dominant transportation route of beta-HCH into the Arctic ocean occurs via ocean currents (Ref. 4);

There is sufficient evidence that beta-HCH meets the criterion on persistence;

##### (c) Bioaccumulation:

- (i) The log Kow reported in the proposal is 3.7. The bioconcentration factor for fish was determined to be 1,460. Other reported bioconcentration factors for fish were in the range of 250–1,500 on a whole body dry weight basis (Ref. 5);
- (ii) and (iii) Field studies in Arctic marine food webs have demonstrated that beta-HCH can bioaccumulate in upper trophic levels (Ref. 1). Beta-HCH appears to be persistent in investigated species (Refs. 1, 6, and 7). Biomagnification factors for beta-HCH in marine food webs were mostly in the range of 1–18 (with a maximum value of 280). In birds and marine mammals in particular, beta-HCH can accumulate to higher levels than the other isomers (Refs. 1, 6 and 8). In the terrestrial Arctic food chain, beta-HCH can also biomagnify in mammals. Modelled biomagnification factors for wolves, depending on their age, ranged from 9 to 109 (Ref. 9);

Beta-HCH has been detected in adipose tissue (Ref. 10) and in breast milk in humans (Refs. 11, 12 and 13). It has been detected in placenta tissue exposing offspring at critical periods of development (Ref. 14);

In addition, available information confirms that the potential for bioaccumulation of beta-HCH is higher than that for lindane (Ref. 1).

There is sufficient evidence that beta-HCH meets the criterion on bioaccumulation;

**(d) Potential for long-range environmental transport:**

- (i) and (iii) Beta-HCH has a low vapour pressure ( $4.8 \times 10^{-5}$  Pa) and a low Henry's Law constant (Ref. 15). Modelling data show an estimated half-life in air of greater than 2 days. The estimated atmospheric half-life for beta-HCH was reported to be 15 days (Ref. 16). In contrast to alpha-HCH, the beta isomer was transported to the Arctic via ocean currents after atmospheric deposition in the North Pacific had occurred (Ref. 4);
- (ii) Monitoring data show that the substance is abundant in remote areas. Beta-HCH has been found in the Arctic Ocean (approximately 240 pg/l) and Arctic air, but at very low concentrations (Ref. 17). Compared to the other HCH isomers, data on beta-HCH in the marine abiotic environment are more limited (Ref. 18). Beta-HCH has also been detected in a variety of marine and terrestrial species. Residues in many investigated species remained unchanged or are on the increase (Ref. 15);

There is sufficient evidence that beta-HCH meets the criterion on potential for long-range environmental transport;

**(e) Adverse effects:**

- (i) Beta-HCH is associated with renal and liver effects in laboratory animals. Beta-HCH is also a possible human carcinogen. The limited genotoxicity data indicate that beta-HCH has some genotoxic potential but the evidence is not conclusive (Ref. 1). Neurotoxic and immunotoxic effects of beta-HCH have been reported as well as reproductive and endocrine disrupting effects. Beta-HCH may be the most toxicologically significant HCH isomer due to the recent reports of its estrogenic effects in mammalian cells, laboratory mammals and fish (Ref. 19). Compared to lindane, toxicological data for beta-HCH are limited;
- (ii) Monitoring data indicate potential risks from dietary exposure of beta-HCH to communities in Alaska and others in the circumpolar Arctic region who depend on subsistence foods, such as caribou, seal and whale (Refs. 5 and 18). Regarding biological effects on wildlife, a significant negative correlation between retinol levels and HCHs isomer in Svalbard polar bears was found (Ref. 18);

There is sufficient evidence that beta-HCH meets the criterion on adverse effects.

**C. Conclusion**

4. The Committee concluded that beta-HCH meets the screening criteria specified in Annex D.

*References*

1. USEPA, *Assessment of lindane and other hexachlorocyclohexane isomers*, [[http://www.epa.gov/opp/srrd1/REDS/factsheets/lindane\\_isomers\\_fs.htm](http://www.epa.gov/opp/srrd1/REDS/factsheets/lindane_isomers_fs.htm), 2006-09-25].
2. ATSDR, 2005. *Toxicological profile for hexachlorocyclohexanes*, United States of America Department of Health and Human Services, Public Health Service, Agency for Toxic Substances and Disease Registry, August, 2005. <http://www.atsdr.cdc.gov/toxprofiles/tp43.html>
3. Phillips, et al., (2005) *Biodegradation of hexachlorocyclohexane (HCH) by microorganisms*, *Biodegradation*, 16, 363-392.
4. Li, Y.F. et al., 2002. *The transport of beta-hexachlorocyclohexane to the western Arctic Ocean: a contrast to alpha-HCH*. *Science of the Total Environment*. 291(1-3): 229-246.
5. WHO, 1991. International Programme on Chemical Safety. *Environmental Health Criteria guide no. 123: Alpha- and Beta-hexachlorocyclohexanes*. United Nations Environment Programme. International Labour Organization. World Health Organization. Geneva, 1991. <http://www.inchem.org/documents/ehc/ehc/ehc123.htm>
6. Moisey, J. et al., (2001) *Environmental Science and Technology*, 35: 1920–1927.
7. Hoekstra, P.F. et al., (2003) *Environmental Pollution*, 124: 509–522.
8. Fisk, A.T. et al., (2001) *Influence of chemical and biological factors on trophic transfer of persistent organic pollutants in the northwater polynya marine food web*, *Environmental Science and Technology*, 35(4), 732-738.
9. Barry, C. et al. *Environmental Science and Technology*, 37: 2966–2974.
10. Smeds, A. and Saukko, P. (2001) *Chemosphere*, 44 1463–1471.

11. Pohl, R.A. and Tylanda, C.A. (2000) *Toxicology and Industrial Health*, 16: 65–77.
12. Kinyamu, J.K. et al. (1998), *Bulletin of Environmental Contamination and Toxicology*, 60: 732-738.
13. Wong, C.K., et al.,(2002) *Archives of Environmental Contamination and Toxicology*, 43: 364-372.
14. Falcon, M. et al., (2004) *Toxicology*, 195, 203–208.
15. Li, Y.F. and Macdonald, R.W. (2005). *Science of the Total Environment*, 342: 87–106.
16. Scholtz, MT. et al. , Canadian Global Emission Interpretation Center, Toronto, Canada, 1997.
17. Li, Y.F. et al. 2003. *Global gridded emission inventories of beta hexachlorocyclohexane*. *Environmental Science and Technology*. 37(16): 3493–3498.
18. Arctic Monitoring and Assessment Programme: *AMAP Assessment 2002: Persistent Organic Pollutants in the Arctic*. Oslo, Norway, 2004.
19. Willet, K.; Ulrich, E.; and Hites, R. 1998. *Differential toxicity and environmental fates of hexachlorocyclohexane isomers*. *Environmental Science and Technology*. 32: 15. 2197–2207.

### **Decision POPRC-2/11: Approach for considering isomers or groups of isomers of chemicals proposed for listing in Annexes A, B and/or C to the Convention**

*The Persistent Organic Pollutants Review Committee*

1. *Agrees* on the recommended approach for considering isomers or groups of isomers of chemicals proposed for listing in Annexes A, B and/or C to the Convention contained in the annex to the present decision;
2. *Decides* to submit the decision to the Conference of the Parties of the Stockholm Convention on Persistent Organic Pollutants for its consideration and possible endorsement.

#### **Annex to decision POPRC-2/11**

### **Recommendation on an approach for considering isomers or groups of isomers of chemicals proposed for listing in Annexes A, B and/or C to the Convention**

1. When considering the listing of a chemical or chemicals in the annexes to the Convention, the Committee, as an expert body, could identify any important isomers with individual commercial uses and, where appropriate, urge any Party to consider proposing the isomer or isomers for listing in accordance with paragraph 1 of Article 8.
2. Only a chemical, or chemicals, named in the title of a proposal and described in the introductory text would, however, be evaluated by the Committee, according to the procedures of Article 8 of the Convention. Providing occasional references to other isomers in the proposal would not be sufficient for their full consideration under Article 8.
3. In order to make a comprehensive recommendation to the Conference of the Parties on a chemical and its isomers, the Committee might decide to advise a proposing Party to submit a proposal for the other relevant isomers and then proceed with its review of the original proposal pursuant to Annex D and according to the rules of procedure of the Committee.
4. Parties should be aware that they may be assisted by another Party or the Secretariat in the preparation of a proposal of a chemical, and its isomers if they are relevant, in order to facilitate the process of gathering data, presenting information and selecting the most appropriate chemical entity (a single substance, several substances or a mixture of substances) to be proposed.
5. If appropriate, the Committee may consider the information related to all the proposed isomers in an integrated risk profile, regardless of when they were proposed and by which Party.

### **Decision POPRC-2/12: Confidentiality arrangements**

*The Persistent Organic Pollutants Review Committee,*

*Recalling* paragraph 19, relating to the confidentiality of data, of the terms of reference of the Persistent Organic Pollutants Review Committee, as adopted by the Conference of the Parties of the Stockholm Convention in its decision SC-1/7,

*Also recalling* paragraph 5 of Article 9 of the Convention,

*Recalling further* decision SC-2/8 of the Conference of the Parties,

*Emphasizing that* any Party or observer submitting information shall endeavour to ensure that such information is non-confidential,

*Decides* to submit the draft code of practice for the treatment of confidential information in the Persistent Organic Pollutants Review Committee, as contained in the annex to the present decision, to the Conference of the Parties for consideration at its third meeting.

## **Annex to decision POPRC-2/12**

### **Draft code of practice for the treatment of confidential information in the Persistent Organic Pollutants Review Committee**

#### **I. Principles**

1. It is understood that designation of information as confidential could limit the ability of the Committee to exercise fully its mandate as a subsidiary body to the Conference of the Parties of the Stockholm Convention which should work in an open and transparent way. Therefore, any Party or observer submitting information shall endeavour to ensure that such information is non-confidential.
2. Pursuant to paragraph 5 of Article 9 of the Convention, information on health and safety of humans and the environment shall not be regarded as confidential.
3. In application of paragraph 5 of Article 9 of the Convention, the following information shall not be identified and labelled as confidential for the purposes of the work of the Committee:
  - (a) Information submitted pursuant to paragraphs (a) (iii) and (b)–(g) of Annex E to the Convention;
  - (b) Information submitted pursuant to paragraphs (b) (iv), (c) (i)–(iii) and (e)–(g) of Annex F to the Convention;
  - (c) Information which cannot be labelled as confidential according to domestic legislation of the State or regional economic integration organization of the origin of the information;
  - (d) Information otherwise available in the public domain.
4. In accordance with paragraph 5 of Article 9 of the Convention, Parties that exchange other information shall protect any confidential information as mutually agreed.
5. Any Party or observer shall have the right to designate information or parts of it as confidential, except as otherwise provided in paragraphs 2 and 3 above, and request that its confidentiality be protected in accordance with this code.
6. Access to confidential information shall be restricted to members, authorized staff members of the Secretariat and the Party or observer that submitted it. Confidential information shall not be disclosed in any way to any other person, whether legal or physical. Confidential information shall not be put in the public domain. Confidential information shall be protected from unauthorized disclosure.

#### **II. Definitions**

7. For the purpose of this code:
  - (a) “A member” means a member of the Committee, appointed under paragraphs 2–9 of the annex to decision SC-1/7 of the Conference of the Parties (“Terms of reference of the Persistent Organic Pollutants Review Committee”), who has filed with the Chair a declaration of non-disclosure;
  - (b) “The Secretariat” means the Secretariat of the Stockholm Convention;
  - (c) “Information” means any type of information or data provided to the Committee under Article 8 of the Convention;

(d) “Confidential information” means any information that has been designated as confidential by the Party or observer who submits the information in accordance with the principles set above, and that is not otherwise available in the public domain;

(e) “Recommendations and reports” means recommendations and reports to the Conference of the Parties adopted by the Committee under paragraphs 33–35 of the annex to decision SC-1/7;

(f) “Decisions” means decisions adopted by the Committee under paragraph 35 of the annex to decision SC-1/7;

(g) “Declaration of non-disclosure” means a copy of the declaration set forth in the appendix to the present code.

### **III. Scope**

8. This code shall be applied to information submitted to the Committee under Article 8 of the Convention for the work at its meetings, in the intersessional period and to the work of any working group established under paragraph 29 of the annex to decision SC-1/7, and to the use of conclusions based on and reference to confidential information in recommendations and reports of the Committee.

### **IV. Identification**

9. Indication of any information to be put forward by a Party or observer as confidential shall be submitted separately, and in hard copy, from other information, shall be clearly identified and labelled as confidential, and requires the application of this code. The assertion of confidentiality shall be accompanied by documentation of the Party’s or observer’s basis for such identification.

10. When receiving an indication that a Party or observer intends to label some information as confidential, the Secretariat or the Chair of the Committee shall consider with the Party or observer the need for such a labelling, and agree on the applicability of this code to the information item in question, including the modalities of delivery of such information to or accessibility to it by members.

11. In the event that an agreement is reached on the labelling of an information item as confidential, the procedures described below shall apply.

12. If no agreement is reached on the labelling of an information item as confidential, the information may be withdrawn by the Party or observer submitting the information.

13. The Party or observer shall, to the extent practicable, on the basis of the information submitted by it, provide reformulated document in which the confidential information is rendered into non-confidential information.

### **V. Procedures**

#### **Submission of confidential information**

14. A Party or an observer may submit information that it deems to be confidential to the Secretariat. The Party or observer shall be responsible for any contractual or other arrangements for the transmission of this information until the Secretariat confirms its receipt.

15. Confidential information shall normally be submitted in writing in hard copy by Parties or observers in accordance with this code. The information shall not be stored in an electronic database, unless otherwise agreed with the Parties or observers upon submission of the information.

16. All documents submitted by Parties or observers with confidential information shall be marked clearly as “confidential” on a separate cover page, with labels marking it as such on all pages.

17. The Secretariat shall confirm receipt of a request for confidentiality and provide a written assurance to the Party or observer that the information will be protected in accordance with this code.

#### **Handling of confidential information**

18. The Secretariat shall take measures to ensure that any information it receives that has been designated as confidential by a Party or observer is protected in accordance with this code.

19. The Secretariat is responsible for ensuring proper receipt, storage and handling of confidential information. To this end, the Secretariat shall establish a logging system for tracking the receipt and handling of confidential information to record the date of receipt of the information and the Party or

observer that submitted the information, and to track sign-out and return of document containing confidential information by authorized personnel.

20. Information designated as confidential shall be stored in a secure, locked location.
21. If confidential information must be transported to an external location, the Secretariat staff member concerned shall ensure that the document is under his or her supervision at all times, in a sealed envelope. The obligation of a Secretariat staff member to protect confidential information shall continue after completion of his or her services.
22. Secretariat staff members may be authorized to access confidential information on a need-to-know basis. All Secretariat staff members who need access to confidential information shall be given instructions on methods to protect the confidentiality of such information and shall be required to file with the Executive Secretary a declaration of non-disclosure. Secretariat staff members who are authorized to access confidential information shall ensure that the documents containing such information are never left unattended in an empty office.
23. Information designated as confidential shall not be distributed or disclosed to non-authorized individuals or organizations and shall not be distributed beyond the Secretariat's control.
24. Upon finalization of procedures under Article 8 of the Convention, and subject to any agreement reached between the Secretariat and the Party or observer submitting the information, the Secretariat shall return any confidential information to the Party or observer that submitted information or, if it wishes so, destroy the information.
25. Any internal documentation developed that contains information designated as confidential shall also be considered confidential and shall be handled in accordance with this code.
26. The Secretariat shall make publicly available information on the requirements set out in this code to protect confidential information.

#### **Access to confidential information**

27. Members of the Committee shall be able to access confidential information, if they so request. Members may elect not to receive any confidential information.
28. Members may review confidential information either collectively at a closed session of the Committee, or individually at the offices of the Secretariat, under the supervision of the Secretariat.
29. Should the Party or observer submitting confidential information agree to make a hard copy of such information available to members upon request by mail or other appropriate means away from the Secretariat during the period between meetings of the Committee, the Secretariat shall arrange to send a copy of the information to members in a manner that protects its confidential nature. Members who have so received such information shall ensure that the information is protected in accordance with the standard for protecting the confidentiality of such information as set out in this code or relevant legislation governing the protection of confidential information.
30. Confidential information shall not be sent to experts who are not members of the Committee for review.

#### **Treatment of confidential information at meetings of the Committee**

31. When the Committee at its meeting has to invoke confidential information, the meeting shall be held in closed session in accordance with the rules of procedure of the Conference of the Parties, applied *mutatis mutandis*. The Party or observer that submitted the information may be invited by the Committee to participate in the meeting.
32. Decisions, recommendations and reports of the Committee shall not contain any confidential information.

#### **Review of the code**

33. This code shall be reviewed on a regular basis by the Committee and the Conference of the Parties.



**General provision**

34. The provisions of this code are without prejudice to the obligations of members applicable to them under the relevant legislation in their respective countries or the obligations of Secretariat staff members who are officials of the United Nations to observe the relevant United Nations regulations and rules and the standards of conduct contained therein.

## Appendix

### **I. All members shall complete, sign and file with the Chair of the Committee the following**

#### **DECLARATION OF NON-DISCLOSURE**

In accordance with the code of practice for the treatment of confidential information in the Persistent Organic Pollutants Review Committee, I agree to the following:

1. I acknowledge having received a copy of the code of practice for the treatment of confidential information in the Persistent Organic Pollutants Review Committee.
2. I acknowledge having read and understood the code.
3. I agree to be bound by, and to adhere to, the provisions of the code and, accordingly, without limitation, to treat confidentially all confidential information that I may view in implementing my functions as a member of the Persistent Organic Pollutants Review Committee.
4. It is understood that the present declaration is without prejudice to any applicable national laws and regulations.

Name:

Executed on this \_\_\_\_\_ day of \_\_\_\_\_, 20.. .

Signature: \_\_\_\_\_

### **II. All relevant Secretariat staff members shall sign, complete and file with the Executive Secretary the following**

#### **DECLARATION OF NON-DISCLOSURE**

In accordance with the code of practice for the treatment of confidential information in the Persistent Organic Pollutants Review Committee, I agree to the following:

1. I acknowledge having received a copy of the code of practice for the treatment of confidential information in the Persistent Organic Pollutants Review Committee.
2. I acknowledge having read and understood the code.
3. I agree to be bound by, and to adhere to, the provisions of the code and, accordingly, without limitation, to treat confidentially all confidential information that I may view in providing secretariat support to the work of the Persistent Organic Pollutants Review Committee.
4. It is understood that the present declaration is without prejudice to any regulations, rules and codes of conduct of the United Nations.

Name:

Executed on this \_\_\_\_\_ day of \_\_\_\_\_, 20.. .

Signature: \_\_\_\_\_

## Annex II

### A. Workplan for the preparation of a draft risk profile (2006–2007)

Schedule	Action
10 November 2006	<b>The Committee</b> establishes an ad hoc working group taking into account the expertise of the Committee members and the possible need to invite experts to assist the ad hoc working group
17 November 2006	<b>The Secretariat</b> distributes requests for the information specified in <b>Annex E</b> (with proposal and evaluation) to Parties and observers
19 January 2007	<b>The Secretariat</b> sends a reminder to Parties and observers
2 February 2007	Deadline for the submission by <b>Parties and observers</b> of information to the Secretariat
3 February–30 March 2007	<b>The drafter</b> prepares a working draft risk profile
31 March–3 May 2007	<b>The ad hoc working group</b> considers the working <b>draft risk profile</b> and prepares a first draft risk profile for comments
11–18 May 2007	<b>The Secretariat</b> distributes the draft risk profile requesting comments from the Committee, Parties and observers
22 June 2007	Deadline for the submission of comments on the first draft risk profile by <b>the Committee, Parties and observers</b> to the Secretariat
23 June–3 August 2007	<b>The ad hoc working group</b> considers comments and prepares a second draft risk profile
17 August 2007	<b>The Secretariat</b> submits the draft risk profile to Conference Services for editing and translation
18 August–8 October 2007	Editing and translation
9–12 October 2007	<b>The Secretariat</b> distributes the final draft risk profile in the six United Nations languages
18–23 November 2007	<b>Third meeting of the Persistent Organic Pollutants Review Committee</b>

## B. Workplan for the preparation of a draft risk management evaluation (2006–2007)

Schedule	Action
10 November 2006	<b>The Committee</b> establishes an ad hoc working group taking into account the expertise of the Committee members and the possible need to invite experts to assist the ad hoc working group
17 November 2006	<b>The Secretariat</b> distributes requests for the information specified in <b>Annex F</b> (with references to background information) to Parties and observers
19 January 2007	<b>The Secretariat</b> sends reminder to Parties and observers
2 February 2007	Deadline for submissions by <b>Parties and observers</b> of information to the Secretariat
3 February–30 March 2007	<ul style="list-style-type: none"> <li>• 3–17 February 2007: <b>The drafter</b> reviews the information received</li> <li>• 18–20 February 2007: <b>The drafter and the Chair of the Committee</b> meet to further the process and to discuss the outline of the risk management evaluation</li> <li>• 21 February–30 March 2007: <b>The drafter</b> prepares a working risk management evaluation</li> </ul>
31 March–3 May 2007	<b>The ad hoc working group</b> considers the working risk management evaluation and prepares a first draft risk management evaluation for comments
11–18 May 2007	<b>The Secretariat</b> distributes the draft risk management evaluation requesting comments from the Committee, Parties and observers
22 June 2007	Deadline for submission of comments on the first draft risk management evaluation to the Secretariat from the <b>Committee, Parties and observers</b>
23 June–3 August 2007	<b>The ad hoc working group</b> considers comments and prepares a second draft risk management evaluation
17 August 2007	<b>The Secretariat</b> submits the draft risk management evaluation to Conference Services for editing and translation
18 August–8 October 2007	Editing and translation
9–12 October 2007	<b>The Secretariat</b> distributes the final draft risk management evaluation in the six United Nations languages
<b>18–23 Nov. 2007</b>	<b>Third meeting of the Persistent Organic Pollutants Review Committee</b>

## Annex III

### A. Elements of a letter to Parties and observers inviting them to submit pursuant to Article 8 of the Stockholm Convention the information specified in Annex F

#### Subject: Invitation to submit information specified in Annex F to the Stockholm Convention to the Persistent Organic Pollutants Review Committee

Dear Madam or Sir,

The second meeting of the Stockholm Convention Persistent Organic Pollutants Review Committee took place from 6 to 10 November 2006 in Geneva. The report of the meeting is available on the Convention website ([http://www.pops.int/documents/meetings/poprc/meeting\\_docs/reports/default.htm](http://www.pops.int/documents/meetings/poprc/meeting_docs/reports/default.htm)).

The Committee had before it a risk profile prepared in accordance with Annex E to the Convention for the chemical [*chemical name*]. [*Chemical name*] was previously proposed by [*Party name*] for addition to Annexes A, B, and/or C of the Convention, and the Committee had already decided that the screening criteria in Annex D to the Convention had been fulfilled.

In accordance with the procedure laid down in Article 8 of the Convention, the Committee examined the risk profiles and decided that the chemical is likely, as a result of its long-range environmental transport to lead to significant adverse human health and/or environmental effects such that global action is warranted. The types of control measures introduced for such chemicals are determined by whether they are listed in Annex A (elimination), Annex B (restriction), and/or Annex C (unintentional production), to the Convention.

The next step in the process is to prepare a risk management evaluation for the chemical mentioned herein. A draft outline of the risk management evaluation has been developed by the Committee (available at [www.pops.int](http://www.pops.int)). The Convention provides that the risk management evaluation will include an analysis of the possible control measures, as well as the socio-economic considerations, and will take into account information to be submitted by Parties and observers relating to the considerations specified in Annex F. Since possible control measures include the prohibition or severe restriction of production and use, the provision of information in the attached questionnaire is a priority for the Committee's evaluation.

#### What information is required?

You are invited to submit the information specified in Annex F and in so doing to consider the guidance provided in this letter and the questionnaire with explanatory notes.

The Persistent Organic Pollutants Review Committee needs information that is supplementary to the information provided during previous stages in the review process (i.e., information relevant to Annexes D and E). The proposals, evaluations and risk profiles are available on the Convention website ([www.pops.int](http://www.pops.int)). In addition, the Committee identified the following specific areas where information and data relevant to the chemicals under consideration would be particularly useful for the future process:

[*Chemical name*]

- [*Explain what is needed*]
- [*Explain what else is needed*]
- [...]

...

*OPTIONAL*: In addition, the Committee would appreciate submission of information regarding production, use and releases of [*chemical name*]. Evaluation under Annex E revealed a further need for this information.

On the basis of a chemical's risk profile and the risk management evaluation, referred to in paragraphs 6 and 7 (a) or (8) of Article 8 of the Convention, the Committee shall recommend whether this chemical should be considered by the Conference of the Parties for listing in Annexes A, B and/or C.

#### **How to submit information?**

A questionnaire with explanatory notes developed by the Committee is provided to facilitate the submission of information (attached and also available at [www.pops.int](http://www.pops.int)). Where feasible, please complete the questionnaire and give precise references for the data sources. Without the exact source of the information, the Committee might not be able to use it. If the information is not readily available in the public literature, you may consider attaching the original source of the information to the submission.

Please make sure that the information provided is for the chemical of concern. Note that **you do not have to fill in all the boxes** on the form. Please also note that if you are completing the form electronically, the size of the boxes will adjust to the amount of text inserted and, thus, a completed form may be longer than the current number of pages. If you are completing a paper hardcopy of the form, please include additional pages as required.

Concerning the submission of confidential information, please note that the draft code of practice for the treatment of confidential information in the Persistent Organic Pollutants Review Committee is set out in document UNEP/POPS/POPRC.2/2, which is also available on the Convention's website.

The workplan of the Committee is very tight, and it would therefore be helpful if information were submitted **as soon as possible but no later than [date]**.

It would be preferable to submit the information in English as this would facilitate its use by the Committee. However, information provided in other United Nations languages (Arabic, Chinese, French, Spanish and Russian) may be translated for use by the Committee but in such cases information should be submitted by **[date less one month]**.

The information should be submitted to the Secretariat of the Stockholm Convention, preferably by e-mail.

Secretariat of the Stockholm Convention  
Att: POPs Review Committee  
United Nations Environment Programme  
11-13 chemin des Anémones  
CH-1219, Chatelaine, Geneva, Switzerland  
Fax: (+41 22) 797 34 60  
**E-mail: [ssc@pops.int](mailto:ssc@pops.int)**

If you have any questions regarding this request or you would like to receive hard copies of the documents from the Persistent Organic Pollutants Review Committee, please do not hesitate to contact [*name*], Stockholm Convention Secretariat (e-mail: [*email address*]); telephone [*telephone number*].

I look forward to hearing from you.

Yours sincerely,

Executive Secretary

## B. Format with explanatory notes for submitting pursuant to Article 8 of the Stockholm Convention the information specified in Annex F to the Convention

### Note to the user:

Please insert summary information in the format provided and give clear and precise references for that information, wherever possible. It is not a requirement to provide information under all items. The explanatory notes under each item, which have been developed by the Persistent Organic Pollutants Review Committee to guide and assist the providers of information, have no legal status.

The information should preferably be submitted in English. If information is submitted only in another official United Nations language (Arabic, Chinese, French, Spanish or Russian), the Secretariat will aim to provide for translation of the information.

The present questionnaire is available in hard copy and in electronic format. The latter is preferred and can be downloaded at the Convention website (<http://www.pops.int>). If you use the paper version and require additional space for any item, please add extra pages indicating the item(s) to which you are referring.

In providing the information, please keep in mind that the possible control measures under the Stockholm Convention are as follows:

- **Listing of the chemical in Annex A:** This would mean elimination of the production, use, export and import of the chemical. When deciding on the listing, the Conference of the Parties might decide to include any specific exemptions, with or without time limits, or restrict the general exemptions laid down in Article 3(5) and notes (i)-(iii) of Annex I. It might also add any additional provisions that would apply specifically to the chemical (as is currently done for PCBs in Part II of Annex A). These additional provisions can cover a wide range of control measures, such as labelling or provision of information to users.
- **Listing of the chemical in Annex B:** This would mean restriction of the production, use, export and import of the chemical. When deciding on the listing, the Conference of the Parties would also specify the acceptable purposes in Annex B. In addition, it might decide to include any specific exemptions, with or without time limits, or restrict the general exemptions laid down in Article 3(5) and notes (i)-(iii) of Annex II, and add any additional provisions that would apply specifically to the chemical (as is currently done for DDT in Part II of Annex B). These additional provisions can cover a wide range of control measures, such as labelling or provision of information to users.
- **Listing of the chemical in Annex C:** This Annex is applicable only to unintentionally produced chemicals. Listing in Annex C would mean that the chemical would become subject to measures that prevent, reduce or eliminate the formation and release of the chemical. When deciding on the listing, the Conference of the Parties might also include any further amendments in Annex C that would be necessary to address the chemical (e.g., additional source categories, additional process control methods or pollution prevention options).
- Listing of the chemical in Annexes A, B and/or C would also **make the chemical subject to the control provisions of Article 6 on stockpiles and waste**. These provisions include obligations to develop strategies for identifying products and articles in use that contain the chemical; to identify to the extent practicable, stockpiles and waste; to manage these stockpiles safely; and to ensure that wastes are disposed of in such a way that the persistent organic pollutant content is destroyed or irreversibly transformed or otherwise disposed of in environmentally sound manner.

The same chemical can be listed in both Annex A and Annex C or Annex B and Annex C.

## Questionnaire

<b>1. Chemical name (as used by the Persistent Organic Pollutants Review Committee)</b>	<b>[To be completed by the intersessional working group and the Secretariat before sending the request]</b>
---	---

**Explanatory note:**

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. On the basis of the risk profile, and in accordance with paragraph 7 (a) of Article 8 of the Convention, the Committee has decided that the proposal of the chemical should proceed. Accordingly, the Committee, through the Secretariat, is now inviting all Parties and observers to provide information relating to the consideration specified in Annex F. The information provided will be used to prepare a risk management evaluation that includes an analysis of possible control measures for the chemical.

<b>2. Introductory information</b>	
<b>Name of the submitting Party/observer</b>	
<b>Contact details (name, telephone, e-mail) of the submitting Party/observer</b>	
<b>Date of submission</b>	

<b>3. Additional Annex E information</b>	
<b>(i) Production data, including quantity and location</b>	
<b>(ii) Uses</b>	
<b>(iii) Releases, such as discharges, losses and emissions</b>	

**Explanatory note:**

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



<b>4. Efficacy and efficiency of possible control measures in meeting risk reduction goals, as referred to in subparagraph (a) of Annex F (provide summary information and relevant references):</b>	
<b>(i) Describe possible control measures</b>	
<b>(ii) Technical feasibility</b>	
<b>(iii) Costs, including environmental and health costs when estimating the efficiency/efficacy of the timing of the control measure, should also be considered</b>	

**Explanatory notes:**

If relevant, provide information on uses for which there may be no suitable alternative or for which the analysis of socio-economic factors justifies 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.

- (i)–(iii) “Risk reduction goals” could refer to targets or goals to reduce or eliminate releases from intentional production and use, unintentional production, stockpiles and wastes and to reduce or prevent risks associated with long-range environment transport.
- (iii) Please note that more detailed information on both costs and benefits is requested in part 6 of this questionnaire.
- (iii) Where relevant and possible, “costs” should be expressed in United States dollars per year.

<b>5. Alternatives (products and processes), as referred to in subparagraph (b) of Annex F (provide summary information and relevant references):</b>	
<b>(i) Describe alternatives</b>	
<b>(ii) Technical feasibility</b>	
<b>(iii) Costs, including environmental and health costs</b>	
<b>(iv) Efficacy</b>	
<b>(v) Risk</b>	
<b>(vi) Availability</b>	
<b>(vii) Accessibility</b>	

**Explanatory notes:**

- (i) 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.
- (i) If several alternatives could be envisaged for the chemical under consideration, including non-chemical alternatives, provide information under this section for each alternative.
- (ii) 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.
- (iv) The evaluation of the efficacy should include any information on the performance, benefits, costs and limitations of potential alternatives.
- (iv) Specify whether the information provided is connected to the specific needs and circumstances of developing countries.
- (v)–(vii) 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.
- (v), (vi) If the alternative has not been tried or tested, information on projected impacts may also be useful.
- (vi), (vii) Information or comments on improving the availability and accessibility of alternatives may also be useful.

<b>6. Positive or negative impacts on society of implementing possible control measures, as referred to in subparagraph (c) of Annex F (provide summary information and relevant references):</b>	
<b>(i) Health, including public, environmental and occupational health</b>	
<b>(ii) Agriculture, including aquaculture and forestry</b>	
<b>(iii) Biota (biodiversity)</b>	
<b>(iv) Economic aspects</b>	
<b>(v) Movement towards sustainable development</b>	
<b>(vi) Social costs</b>	

**Explanatory notes:**

Socio-economic considerations include:

- (ii), (iv), (v) 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, aquaculture and forestry;

- (i), (iii), (v), (vi) 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;
- (i)–(vi) When estimating the positive and negative impacts of the control measures, the impact of the timing of the implementation of the measures should be considered, where relevant;
- (v) Information should be provided on how control measures fit within national sustainable development strategies and plans.

**7. Waste and disposal implications (in particular, obsolete stocks of pesticides and clean-up of contaminated sites), as referred to in subparagraph (d) of Annex F (provide summary information and relevant references):**

<b>(i) Technical feasibility</b>	
<b>(ii) Costs</b>	

**Explanatory note:**

- (i), (ii) Specify if the information provided is connected to the specific needs and circumstances of developing countries.

**8. Access to information and public education, as referred to in subparagraph (e) of Annex F (provide summary information and relevant references):**

--

**Explanatory note:**

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

**9. Status of control and monitoring capacity, as referred to in subparagraph (f) of Annex F (provide summary information and relevant references):**

--

**Explanatory note:**

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.



---

## Annex IV

### Definitions of isomers, congeners and homologues

#### Isomer

One of several chemical species (or molecular entities) that have the same stoichiometric molecular formula but different constitutional formulae or different stereochemical formulae and hence potentially different physical or chemical properties.

#### Congener

A congener is a substance literally con- (with) generated or synthesized by essentially the same synthetic chemical reactions and the same procedures. Analogues are substances that are analogous in some respect to the prototype agent in chemical structure.

Clearly congeners may be analogues or vice versa but not necessarily. The term congener, while most often a synonym for homologue, has become somewhat more diffuse in meaning so that the terms congener and analogue are frequently used interchangeably in literature.

#### Homologue

The term homologue is used to describe a compound belonging to a series of compounds differing from each other by a repeating unit, such as a methylene group, a peptide residue, etc.

Reference: International Union of Pure and Applied Chemistry recommendations (1998).

## Annex V

### Composition of intersessional working groups

#### Working group on chlordecone

Ms. Sultan Al-Easa (chair), Qatar  
 Ms. Ylä-Mononen (drafter), designated  
 by the United Kingdom  
 Mr. Rae, Australia  
 Mr. Chenier, Canada  
 Mr. Mohammed, Ethiopia

Mr. Abu Kaddourah, Jordan  
 Mr. Sabularse, Philippines  
 Mr. Yormah, Sierra Leone  
 Ms. Fabjan, Slovenia  
 Mr. Bouwman, South Africa

#### Observer members

Mr. Eeles, Australia  
 Mr. Juergensen, Canada  
 Mr. Seppälä, Finland  
 Ms. Andres, France  
 Ms. Chandrasekharan, India  
 Mr. Dzierzanowski, Poland  
 Ms. Hitzfeld, Switzerland  
 Mr. Blunck, United States of America  
 Mr. Rush, United States of America

Mr. Binten, European Commission  
 Ms. Lloyd-Smith, International Pesticides Elimination  
 Network  
 Mr. DiGangi, Environment Health Fund  
 Mr. Jones, World Chlorine Council  
 Mr. Simon, International Council of Chemical  
 Associations/World Chlorine Council  
 Mr. Trewhitt, CropLife International

#### Working group on hexabromobiphenyl

Mr. Rajkumar (chair), Trinidad and  
 Tobago  
 Ms. Ylä-Mononen (drafter), designated  
 by the United Kingdom  
 Mr. Rae, Australia

Mr. Chenier, Canada  
 Mr. Mohammed, Ethiopia  
 Mr. Arndt, Germany  
 Mr. Yadallee, Mauritius  
 Ms Sultan Al-Easa, Qatar  
 Mr. Tarazona, Spain

#### Observer members

Mr. Eeles, Australia  
 Mr. Seppälä, Finland  
 Ms. Chandrasekharan, India  
 Mr. Dzierzanowski, Poland  
 Ms. Hitzfeld, Switzerland  
 Ms. Ngarize, United Kingdom  
 Mr. Blunck, United States of America

Mr. Rush, United States of America  
 Mr. Binten, European Commission  
 Ms. Lloyd-Smith, International Pesticides Elimination  
 Network  
 Mr. DiGangi, Environment Health Fund  
 Mr. Trewhitt, CropLife International

#### Working group on lindane

Mr. Bouwman (chair), South Africa  
 Mr. Yarto (drafter), Mexico  
 Mr. Rae, Australia  
 Mr. Ouedraogo, Burkina Faso  
 Mr. Chenier, Canada  
 Mr. Abderaman, Chad  
 Mr. Kouadio, Côte d'Ivoire  
 Mr. Holoubek, Czech Republic  
 Mr. Cueva, Ecuador

Mr. Abu Kaddourah, Jordan  
 Ms. Bouqartacha, Morocco  
 Mr. Sabularse, Philippines  
 Mr. Tarazona, Spain  
 Mr. Wahlström, Sweden  
 Mr. Boon-Long, Thailand  
 Mr. Rajkumar, Trinidad and Tobago  
 Ms. Ylä-Mononen, designated by the United Kingdom  
 Ms. Alvarez, Uruguay

**Observer members**

Mr. Eeles, Australia	Mr. Campbell, United States of America
Mr. Juergensen, Canada	Mr. Rush, United States of America
Mr. Seppälä, Finland	Mr. Binten, European Commission
Ms. Andres, France	Ms. Lloyd-Smith, International Pesticides Elimination Network
Ms. Chandrasekharan, India	Mr. DiGangi, Environment Health Fund
Mr. Dzierzanouski, Poland	Mr. Trehitt, CropLife International
Ms. Hitzfeld, Switzerland	Mr. Jones, World Chlorine Council
Mr. Blunck, United States of America	

**Working group on pentabromodiphenyl ether**

Mr. Rae (chair), Australia	Mr. Chenier, Canada
Ms. Säll (drafter), Norway	Mr. Tarazona, Spain

**Observer members**

Mr. Eeles, Australia	Mr. Rush, United States of America
Mr. Seppälä, Finland	Mr. Campbell, United States of America
Ms. Andres, France	Mr. Binten, European Commission
Ms. Chandrasekharan, India	Ms. Shibatsuji, WHO
Mr. Fukushima, Japan	Ms. Lloyd-Smith, International Pesticides Elimination Network
Mr. Dzierzanouski, Poland	Mr. DiGangi, Environment Health Fund
Ms. Hitzfeld, Switzerland	Mr. Trehitt, CropLife International
Ms. Ngarize, United Kingdom	
Mr. Blunck, United States of America	

**Working group on perfluorooctane sulfonate**

Mr. Chenier (chair), Canada	Mr. Kitano, Japan
Mr. Wahlström (drafter), Sweden	Mr. Yormah, Sierra Leone
Mr. Rae, Australia	Ms. Fabjan, Slovenia
Mr. Hu, China	Ms. Ylä-Mononen, designated by the United Kingdom
Mr. Arndt, Germany	

**Observer members**

Mr. Eeles, Australia	Mr. Binten, European Commission
Mr. Zang, China	Mr. Santoro, 3M Corporation
Mr. Seppälä, Finland	Mr. Simon, International Council of Chemical Associations/World Chlorine Council
Ms. Andres, France	Mr. Lamotte, Semiconductor Industry
Ms. Chandrasekharan, India	Mr. Trehitt, CropLife International
Mr. Fukushima, Japan	Ms. Shibatsuji, World Health Organization
Mr. Dzierzanouski, Poland	Ms. Lloyd-Smith, International Pesticides Elimination Network
Ms. Hitzfeld, Switzerland	Mr. DiGangi, Environment Health Fund
Ms. Ngarize, United Kingdom	
Mr. Blunck, United States of America	
Mr. Rush, United States of America	

**Working group on octabromodiphenyl ether**

Ms. Alvarez (chair), Uruguay  
 Ms. Ylä-Mononen (drafter), designated  
 by the United Kingdom  
 Mr. Rae, Australia  
 Mr. Chenier, Canada  
 Mr. Hu, China

Ms. Säll, Norway  
 Ms. Fabjan, Slovenia  
 Mr. Tarazona, Spain  
 Mr. Wahlström, Sweden  
 Mr. El-Shekeil, Yemen

**Observer members**

Mr. Eeles, Australia  
 Mr. Juergensen, Canada  
 Mr. Zang, China  
 Mr. Seppälä, Finland  
 Ms. Andres, France  
 Ms. Chandrasekharan, India  
 Mr. Fukushima, Japan  
 Mr. Dzierzanowski, Poland  
 Ms. Hitzfeld, Switzerland

Ms. Nagarize, United Kingdom  
 Mr. Blunck, United States of America  
 Mr. Rush, United States of America  
 Mr. Campbell, United States of America  
 Mr. Binten, European Commission  
 Ms. Shibatsuji, WHO  
 Ms. Lloyd-Smith, International  
 Pesticides Elimination Network  
 Mr. DiGangi, Environment Health Fund  
 Mr. Trewhitt, CropLife International

**Working group on pentachlorobenzene**

Mr. Sabulase (chair), Philippines  
 Ms. Ylä-Mononen (drafter), designated  
 by the United Kingdom  
 Mr. Rae, Australia

Mr. Chenier, Canada  
 Ms. Sultan Al-Easa, Qatar  
 Mr. Yormah, Sierra Leone  
 Ms. Fabjan, Slovenia

**Observer members**

Mr. Eeles, Australia  
 Mr. Juergensen, Canada  
 Mr. Seppälä, Finland  
 Ms. Chandrasekharan, India  
 Mr. Janssen, the Netherlands  
 Mr. Dzierzanowski, Poland  
 Ms. Hitzfeld, Switzerland  
 Ms. Ngarize, United Kingdom  
 Mr. Blunck, United States of America  
 Mr. Rush, United States of America

Mr. Binten, European Commission  
 Ms. Shibatsuji, WHO  
 Ms. Lloyd-Smith, International Pesticides Elimination  
 Network  
 Mr. DiGangi, Environment Health Fund  
 Mr. Trewhitt, CropLife International  
 Mr. Simon, International Council of Chemical  
 Associations/World Chlorine Council  
 Mr. Jones, World Chlorine Council  
 Mr. Van Wijk, World Chlorine Council

**Working group on short-chained chlorinated paraffins**

Mr. Yadalee (chair), Mauritius  
 Mr. Chenier (drafter), Canada  
 Mr. Rae, Australia  
 Mr. Hu, China  
 Mr. Holoubek, Czech Republic  
 Mr. Mohammed, Ethiopia

Mr. Kitano, Japan  
 Ms. Fabjan, Slovenia  
 Mr. Bouwman, South Africa  
 Ms. Ylä-Mononen, designated by the United Kingdom  
 Ms. Alvarez, Uruguay  
 Mr. El-Shekeil, Yemen

**Observer members**

Mr. Eeles, Australia  
 Mr. Juergensen, Canada  
 Mr. Zang, China  
 Mr. Seppälä, Finland  
 Ms. Andres, France  
 Ms. Chandrasekharan, India  
 Mr. Fukushima, Japan  
 Mr. Dzierzanowski, Poland  
 Ms. Hitzfeld, Switzerland  
 Ms. Ngarize, United Kingdom

Mr. Blunck, United States of America  
 Mr. Fensterheim, United States of America  
 Mr. Rush, United States of America  
 Mr. Binten, European Commission  
 Ms. Shibatsuji, World Health Organization  
 Ms. Lloyd-Smith, International Pesticides Elimination  
 Network  
 Mr. DiGangi, Environment Health Fund  
 Mr. Trewhitt, CropLife International



---

**Working group on alpha and beta hexachlorocyclohexane**

Mr. Holoubek, (chair), Czech Republic  
Mr. Arndt (drafter), Germany  
Mr. Rae, Australia  
Mr. Chenier, Canada  
Mr. Cueva, Ecuador  
Mr. Yarto, Mexico

Ms. Bouqartacha, Morocco  
Mr. Sabularse, Philippines  
Mr. Bouwman, South Africa  
Mr. Tarazona, Spain  
Mr. Wahlström, Sweden  
Mr. Rajkumar, Trinidad and Tobago

**Observer members**

Mr. Eeles, Australia  
Mr. Juergensen, Canada  
Mr. Seppälä, Finland  
Ms. Chandrasekharan, India  
Mr. Dzierzanowski, Poland  
Ms. Hitzfeld, Switzerland  
Mr. Blunck, United States of America

Mr. Campbell, United States of America  
Mr. Rush, United States of America  
Mr. Binten, European Commission  
Ms. Lloyd-Smith, International Pesticides Elimination  
Network  
Mr. DiGangi, Environment Health Fund  
Mr. Trehitt, CropLife International

---