

Decision POPRC-1/5: Hexabromobiphenyl

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 hexabromobiphenyl (Chemical Abstracts Service Number 36355-01-8) in Annex A 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 hexabromobiphenyl, 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 27 January 2006.

Annex to decision POPRC-1/5

Evaluation of hexabromobiphenyl 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.1/7.
2. Additional sources of scientific information included critical reviews prepared by recognized authorities.

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 covers exclusively hexabromobiphenyl;
- (ii) The chemical structure was provided in the proposal. There are 42 different isomers of hexabromobiphenyl. Commercial products contain mixtures of various congeners, homologues and isomers;

The chemical identity of hexabromobiphenyl is clearly established;

(b) Persistence:

- (i) There is evidence from soil-incubation studies that the half-life in soil is greater than six months (Ref. 1);
- (ii) There is some information on its photolytic degradation in water and in the environment. Its photolytic degradation rate in the environment, however, is not clear (Ref. 1). A follow-up survey of contaminated soils and sediments in Michigan, United States of America, over several years indicates high persistence (Ref. 1);

There is sufficient evidence that hexabromobiphenyl meets the persistence criterion;

(c) Bioaccumulation:

- (i) A bioconcentration factor of 11,000 was determined in carp using an Organization for Economic Cooperation and Development (OECD) test guideline (Ref. 2). A fish field bioaccumulation value of 10,000 has been reported, but the Committee had concerns about the analytical measurements in this field study (Ref. 1);
- (ii) and (iii) Additional information from the Michigan incident (Ref. 1), toxicokinetic data in mammals and monitoring data in biota confirm the bioaccumulation potential;

There is sufficient evidence that hexabromobiphenyl meets the bioaccumulation criterion;

(d) Potential for long-range environmental transport:

- (i) and (ii) There are measured levels in biota, including monitoring results from seals and reindeers from locations far from the assumed sources (Ref. 1);
- (iii) No data on half-life in air are available. The physico-chemical properties suggest that the chemical would be adsorbed on particulate matter and would therefore resist atmospheric degradation;

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

(e) Adverse effects:

- (i) There are extensive data on hexabromobiphenyl poisoning in livestock in the Michigan incident (Ref. 1) resulting in reproductive and growth effects even in animals exposed to low-level contamination (Ref. 1);
- (ii) Hexabromobiphenyl has been classified by the International Agency for Research on Cancer (IARC) as a possible human carcinogen, category 2B (Ref. 3). There are several long-term toxicity studies on mammals confirming the toxicity of hexabromobiphenyl. There are no data on long-term toxicity on aquatic organisms (Ref. 1);

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

C. Conclusion

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

References

1. *Environmental Health Criteria No. 152: Polybrominated biphenyls*. IPCS, UNEP, ILO, WHO. Geneva. 1994. (<http://www.inchem.org/documents/ehc/ehc/ehc152.htm>).
2. 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).
3. *IARC Monographs*, International Agency for Research on Cancer (IARC) (1986–1987), Lyon.