Format for submitting pursuant to Article 8 of the Stockholm Convention the information specified in Annex E of the Convention

Introductory information	
Name of the submitting Party/observer	**United States of America**
Contact details (name, telephone, e-mail) of the submitting Party/observer	**Christina Thompson Tel: 202-564-0983 thompson.christina@epa.gov**
Chemical name (as used by the POPS Review Committee (POPRC))	**Pentabromodiphenyl ether (pentaBDE)**
Date of submission	**January 27, 2006**

(a) Sources, including as appropriate (provide summary information and relevant references)	
(i) Production data: **Quantity** **Location**	In 2003, the Great Lakes Chemical Corporation announced it will voluntarily cease production of pentaDBEs and octaDBEs by the end of 2004. Since there are no other pentaDBE manufacturers in the United States, this decision functionally eliminated U.S. production of this compound. ATSDR, 2004. Toxicological Profile for Polybrominated Biphenyls and Polybrominated Diphenyl Ethers. http://www.atsdr.cdc.gov/toxprofiles/tp68.html
Other	
(ii) Uses	
(iii) Releases: **Discharges** **Losses** **Emissions** **Other**	

(b) Hazard assessment for endpoints of concern, including consideration of toxicological interactions involving multiple chemicals (provide summary information and relevant references)
PentaBDE is one of 23 chemicals included in EPA's Voluntary Children's Chemical Evaluation Program (VCCEP). Through this program, companies which manufacture and/or import these chemicals volunteer to sponsor their chemical and as part of their sponsorship, collect and/or develop health effect and exposure information and integrate that information in a risk assessment. This information can be found at http://www.epa.gov/oppt/chemrtk/vccep/index.htm. This dossier need to be updated with more current information such as: This recent article provides a brief review of scientific issues associated with BFRs and discusses data gaps. Overall, the toxicological database is very limited; the current literature is incomplete and often conflicting. Available data, however, raise concern over the use of certain classes of BFRs. Birnbaum L and D Staskal. 2004. Brominated Flame Retardants: Cause for Concern? Environ. Health Perspectives. 112 No. 1, 9-17. http://ehp.niehs.nih.gov/members/2003/6559/6559.pdf

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(c) Environmental fate (provide summary information and relevant references)	
Chemical/physical properties	
Persistence	Researchers have been very active in the last 4-5 years, with a great increase in the number of relevant papers, indicating a need to update the dossier. Some key publications are: Gouin T and T Harner. 2003. Modelling the environmental fate of the polybrominated diphenyl ethers. Environ. Internat. 29:717-724. Pettersson A et al. 2001. Concentrations in air and dust of polybrominated diphenyl ethers and tetrabromobisphenol A. P14, pp 98-101, in Abstracts from BFR 2001, Part 2, Analysis and Fate, Products, Standards and Uses. See Section (e) for more resources.
How are chemical/physical properties and persistence linked to environmental transport, transfer within and between environmental compartments, degradation and transformation to other chemicals?	
Bio-concentration or bio-accumulation factor, based on measured values (unless monitoring data are judged to meet this need)	

(d) Monitoring data (provide summary information and relevant references)
See Sections (c) and (e) for resources.

(e) Exposure in local areas (provide summary information and relevant references)	
- general	At least 4 years have passed since the literature was searched. A revised version of the dossier is needed. Some key publications are (see Section (c) also): Wania F and C Dugani 2003. Assessing the long-range transport potential of polybrominated diphenyl ethers: a comparison of four multimedia

	models. Environ. Toxicol. Chem. 22:1252-1261. Wilford BH et al. 2004. Passive sampling survey of polybrominated diphenyl ether flame retardants in indoor and outdoor air in Ottawa, Canada: implications for sources and exposure. Environ. Sci. Technol. 38:5312-5318. Santillo D et al. 2001. The presence of brominated flame retardants and organotin compounds in dusts collected from Parliament buildings from eight countries. Greenpeace Reserach Laboratories, Technical Note 03/2001 (updated), June 2001. Knoth et al. 2002. Polybrominated diphenylethers in house dust. Organohalogen Compounds, 58:213-216. Rudel RA et al. 2003. Phthalates, alkylphenols, pesticides, polybrominated diphenyl ethers, and other endocrine disrupting compounds in indoor air and dust. Environ. Sci. Technol. 37:4543-4553. Stapleton HM et al. 2005. Polybrominated diphenyl ethers in house dust and clothes dryer lint. Environ. Sci. Technol. 39:925-931. Butt CM et al. 2004. Spatial distribution of polybrominated diphenyl ethers in southern Ontario as measured in indoor and outdoor window organic films. Environ. Sci. Technol. 38:724-731. Butt CM et al. 2004. Semivolatile organic compounds in window films from lower Manhattan after the September 11th World Trade Center Attacks. Environ. Sci. Technol. 38:3514-3524. Osako M et al. 2004. Leaching of brominated flame retardants in leachate from landfills in Japan. Chemosphere 57:1571-1579.
- as a result of long-range environmental transport	LRT potential of pentaBDE and other PBDEs is explored in the two papers referenced below using several published models. Wania and Dugani (2003) concluded that the lower brominated BDEs have an LRT potential comparable to that of PCBs known to be subject to significant LRT, whereas the higher brominated BDEs have a very low potential to reach remote areas. Thus BDE-15, 28, and 47 (di-, tri- and tetrabrominated, respectively) had the highest predicted LRTP by several models, and the transport potentials were comparable to those predicted for the higher chlorinated biphenyls, some of which are known to be transported. These conclusions are in general agreement with monitoring data, which show that BDEs found in remote locations are mostly the lower brominated congeners. The most abundant BDE congeners in Arctic air, sampled in 1994, were BDE-47 and BDE-99 (pentabrominated). Wania F and C Dugani 2003. Assessing the long-range transport potential of polybrominated diphenyl ethers: a comparison of four multimedia models. Environ. Toxicol. Chem. 22:1252-1261. Gouin T and T Harner. 2003. Modelling the environmental fate of the polybrominated diphenyl ethers. Environ. Internat. 29:717-724. At a training workshop held in August 2005, the OECD presented a multimedia model (OECD/UNEP Pov and LRTP Assessment Software Tool) proposed for assessing chemicals for high environmental persistence and long range transport potential. Overall persistence (Pov) and LRTP modeling, using this new OECD model or other available models, should be conducted for pentaBDE and included in a revised proposal. Models offer the promise of integrating information in a way that deepens understanding and bolsters the case for long-range atmospheric transport. This new modeling information can be most productively incorporated if it is developed in a phased or tiered fashion, in parallel with rather than replacing the existing assessment architecture.

- information regarding bio-availability	The link for the guidance document (no. 45): http://www.olis.oecd.org/olis/2004doc.nsf/LinkTo/env-jm-mono(2004)5

(f) National and international risk evaluations, assessments or profiles and labelling information and hazard classifications, as available (provide summary information and relevant references)

(g) Status of the chemical under international conventions