



Centre d'Etude et de Développement Agricole Cambodgien (CEDAC)

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Date: April 29, 2019

To: H.E. Heng Nareth  
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Stockholm Convention Official contact point (OCP)  
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Mr. Phet Pichhara  
Ministry of Environment  
Stockholm Convention National focal point (NFP)  
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Re: Withdrawing the Stockholm Convention recycling exemptions for HexaBDE and HeptaBDE

Dear Mr. Heng Nareth, dear Mr. Phet Pichhara,

We are writing to you in your capacities as official Stockholm Convention contact points with concerns about Cambodia's recycling exemptions under the Stockholm Convention for materials such as plastics and foam containing the flame retardant chemicals, TetraBDE, PentaBDE, HexaBDE and HeptaBDE.<sup>1</sup> These concerns are based on a review of the practice by the Stockholm Convention expert committee and monitoring of consumer products on the Cambodian market.

As you know, the recycling exemption for materials containing these four flame retardant substances was part of the listing decisions at the 4<sup>th</sup> Conference of the Parties and allows the practice to continue until 2030. However, Parties at the Conference also tasked the treaty's expert committee to evaluate the recycling practice and provide recommendations.

The expert committee's findings are described in Decision POPRC-6/2 contained in the meeting report. Key recommendations included taking action to "...*eliminate brominated diphenyl ethers [BDEs] from the recycling streams as swiftly as possible.*" The Committee noted that, "*Failure to do so will inevitably result in wider human and environmental contamination and the dispersal of brominated diphenyl ethers into matrices from which recovery is not technically or economically feasible and in the loss of the long-term credibility of recycling.*" Subsequent testing of consumer products has demonstrated that these concerns are valid.

We tested consumer products made of recycled plastic on the Cambodian market in 2019 and found that these toxic chemicals along with another toxic flame retardant chemical are making their way into products, exactly as the Stockholm Convention expert committee predicted in 2010.

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<sup>1</sup> Known collectively as polybrominated diphenylethers or PBDEs.

Product	Commercial OctaBDE (HexaBDE + HeptaBDE) (ppm)	DecaBDE <sup>1</sup> (ppm)
Hair diadem	37	113
Hair diadem	58	660
Hair diadem	119	126
Pocket calculator	2	2

<sup>1</sup>DecaBDE was listed in the Stockholm Convention for global elimination in 2017. Methods are described in Annex 1.

Pocket calculators and hair diadems are not a fire hazard and should certainly not contain the world's worst substances which are listed for global elimination under the Stockholm Convention.

The principal consequence of the recycling exemption is contamination of products made of recycled plastic with toxic chemicals. The flame retardant substances at issue resemble PCBs and are known to disrupt human hormone systems, adversely impacting the development of the nervous system and children's intelligence. They are also known to be released into household dust, causing exposure. Foam recyclers and carpet layers in the USA have high body burdens of flame retardants and researchers note that they, "*may be at higher risk from adverse health effects associated with brominated flame retardant exposure.*"

Ironically, a practice such which is supposed to be environmentally friendly can lead to toxic substances in products as they are carried along in the recycling process. In this case, PBDEs have been widely used in plastic enclosures for electronics. In essence, toxic chemicals in electronic waste are being recycled into consumer products, including children's products. This undermines a truly circular economy and diminishes the overall credibility of recycling.

For these reasons, we respectfully request Cambodia to withdraw its recycling exemptions for TetraBDE, PentaBDE, HexaBDE and HeptaBDE under the Stockholm Convention.

We note that other Parties have already withdrawn their recycling exemptions for these substances or they have expired. Czechia, Iran, and Vietnam no longer have recycling exemptions for TetraBDE and PentaBDE as of 2014 – 2015 and Japan withdrew their exemptions for a variety of uses including recycling automobile shredder residues, refuse paper and plastic fuel, recycling automobile shredder residues to sound-proofing products, and recycling plastics from used specific home appliances (air conditioner, television sets, refrigerator, freezer, washing machine and clothes dryer) and personal computers to construction material and daily necessities such as hangers and bookends. Czechia and Iran also no longer have recycling exemptions for HexaBDE and HeptaBDE as of 2014 – 2015 and Japan withdrew recycling exemptions for the uses described above.

We note that technical solutions exist for separation of PBDE-contaminated waste including Creasolv, x-ray fluorescence devices, x-ray transmission devices, and even low-cost sink-float methods. Techniques for destruction of PBDEs as required under the Stockholm Convention include non-combustion techniques such as super critical water oxidation (SCWO), gas phase chemical reduction, and mechanochemical processes such as high-energy ball milling.

Cambodian consumers should be able to purchase products made of recycled materials without having to worry that they contain substances that are globally banned. We hope that Cambodia can announce its withdrawal of the recycling exemptions for HexaBDE and HeptaBDE at the upcoming 9<sup>th</sup> Conference of the Parties 29 April – 10 May in Geneva.

We would welcome further dialog with you about this important matter for Stockholm Convention implementation and protection of Cambodian consumers.

Cordially,



**Ms. Tong Chantheng**

**CEDAC Executive Director**



**Jitka Strakova,**

**Arnika/IPEN Researcher**

## **Annex 1. Methods for sampling and analysis of chemicals in Canadian consumer products.**

Between January and March 2019, 22 plastic items were purchased in stores and markets in Phnom Penh, Cambodia. Mainly black parts of the products were screened using a handheld NITON XL3t 800 XRF analyser in order to identify samples with significant bromine (over 3000 ppm). Four positive samples were analysed in a laboratory at the University of Chemistry and Technology, Prague, Czech Republic (GC-MS-NICI). For purposes of calculation, the components of the commercial OctaBDE mixtures include the following congeners: BDE 153, 154, 183, 196, 197, 203, 206, and 207. The main congener of the commercial DecaBDE mixture is BDE 209.