

Comments from China on the draft risk profile on PFHxS, its salts and PFHxS-related compounds and the draft addendum to the risk management evaluation on PFOA, its salts and PFOA-related compounds

It has been a pleasure to receive the invitation from the Secretariat of the Stockholm Convention on the caption issue. China appreciated the substantial and active efforts that the Secretariat and POPRC have made to draft the reports. Comments and suggestions related to the drafts are presented as follows:

The first part is for draft risk profile on PFHxS, its salts and PFHxS-related compounds.

1. About the draft risk profile on PFHxS, its salts and PFHxS-related compounds, in paragraph 13 and paragraph 35, the production of surface treatment products containing PFHxSF- or perfluorobutansulfonyl fluoride (PFBSF)-derivatives was wrongly printed and cited in the references (1 k/a in the original document), which should be 1 t/a instead of 1000 t/a. Currently the production is under investigation. Considering the data was neither up to date nor accurate, the relevant descriptions are suggested to be deleted from the draft.
2. The Chinese enterprises mentioned in the last sentence of paragraph 27 in page 8 are mostly commercial companies. The reference could prove that these companies might sell the products, rather than that they produce. So it is suggested that relevant content be deleted from the draft risk profile in question as well as from the reference.
3. The last sentence of paragraph 61 in page 16 - “It has also been reported that PFSA emissions from China have increased since 2003 (Wang et al., 2017).” is inconsistent with the content of the reference, which it is suggested to delete.
4. Due to the fact that the third sentence of paragraph 110 in page 25 lacks evidence, it is suggested the sentence - “One European manufacturer and a number of producers located in China have been identified, however, quantitative production data are not publically available.”- be deleted.

The second part is for draft addendum to the risk management evaluation on PFOA, its salts and PFOA-related compounds.

1. China has always attached great attention to the implementation of the Stockholm Convention and has made positive progress on the environmental management of PFOA. In 2008, Ministry of Environmental Protection (MEP) of the People's Republic of China issued the first batch of *High Pollution, High Environmental Risk Product Catalogue* which includes high temperature melting membrane fluorine resin coating used on non-stick cookware, kitchenware, and food processing machinery, based on the potential residual PFOA in the products. In 2011, the National Development and Reform Commission (NDRC) of the People's Republic of China issued *Catalogues of Industrial Structure Adjustment*, aiming at restricting the production of PFOS and PFOA and encouraging the research and development on alternatives of PFOS and PFOA.
2. PFOA can be used as a surfactant in the emulsion polymerization of fluorine-containing resin such as PTFE and PVDF. During well-controlled production processes, most of PFOA could be recycled, decompose, or get into hazardous waste and concentrations are low in the final product. The PTFE membranes used in environmental protection industries apply PFOA as a surfactant in the emulsion polymerization. Currently the alternative technology has not been mature enough or has not gone through environmental risk assessment, meaning that there exist technological difficulties in realizing immediate substitution. Therefore, it is suggested that specific uses of PFOA be listed in specific exemptions, and that developed countries which have already developed mature alternative technologies conduct effective technological assistance in accordance with Article 12 of the Convention.
3. No alternatives are now available for some materials containing PFOA such as filter materials for oil and fuel filtration. However, several strategies can be taken to synthesize potentially non-bioaccumulable alternatives of PFOS and PFOA: reducing the length of perfluorocarbon chain; introducing hetero atoms into the fluorocarbon chain; and introducing branch. During the process of finding potentially "green" alternatives, new PFASs materials could be invented and

produced. Actually, more than 3000 PFASs are, or have been, on the global market, while limited categories of PFASs are now the focus such as PFOA, PFOS and their precursors. At the same time, the toxicity of the alternatives is a big concern for the environment and organism. For instance, 6:2 FTOH are used as alternatives of PFOA for a variety of uses including textiles, however, wide application of 6:2 FTOH may increase concentration of 6:2 FTCA in the environment. In addition, 6:2 FTCA has been utilized as an alternative processing aid to PFOA in China. However, it is found that 6:2 FTCA can cause developmental toxicity in zebrafish embryos, and it is also declared that 6:2 FTCA appears to be more toxic than PFOA. To summarize, the alternatives of the PFOA should be taken into great consideration for risk assessments. Compared with countries which have longer history of producing organ-fluorine, making it easier for them to find the alternatives of PFOA, China has less experience in finding PFOA alternatives technically. However, Chinese manufacturers are reacting actively to develop and use PFOA alternatives in response to the stricter requirements on export products concerning PFOA concentration.

4. Due to the fact that the first and the second half parts of paragraph 38 in page 10 contradict each other, it is suggested that paragraph 38 be deleted to prevent it from being made a deliberate misinterpretation out of the context.
5. There is a logical error existing in paragraph 39 in page 11. Whether sulfluramid could degrade into PFOA is the evidence of whether sulfluramid is PFOA precursor, rather than that of whether sulfluramid contains PFOA impurity. Therefore, it is suggested that paragraph 39 in page 11 be deleted.
6. Regarding the last sentence of paragraph 212 in page 34 - “Wang et al (2014) note that the manufacture of PFOA-based products in China increased from negligible amounts in the 1990s to 50-80 tonnes per annum by 2009, with at least five major facilities in China. ”, relevant data is being verified. It is suggested that the sentence above-mentioned be temporarily deleted before confirmation, for the purpose of avoiding unnecessary misunderstandings.

Yours sincerely,

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