



The information provided here might be applied in relation to the evaluation of Tetrabromobisphenol A (TBBPA).

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Based on the strategy following the Danish LOUS (List of undesired substances)-project we have had a focus on BFRs. Thus, two surveys on BFRs in EEE have been performed.

The first survey focused on EEE import and the EEE selected for chemical analysis was still in the import container. From this survey six analytical reports have been performed covering 14 pieces of equipment – mainly DVD players and earphones. In the attached Excel file (2016 08 B in EEE.xlsx), the first sheet is named “container” and summarize the results. In this survey first an x-ray analysis was performed in order to see if any Bromine is present and the concentration of the Bromine. In total 281 components were analysed. One piece of equipment was analysed for restricted BFRs. No restricted BFR was detected.

The survey found that 30% of the components contain Bromine and that the average concentration was around 6700 ppm. The maximum concentration observed was ca. 19,5%.

The analytical reports are can be provided directly to the Öko-institute, however please note that the brands/names of the producers are strictly confidential.

Second, another survey was performed in November and December 2016 (see attached Excel file sheet 2 called “Nov-Dec 2016”). The analytical reports can be provided on request. However please note that the brands/names of the producers will be strictly confidential.

Here 51 EEE were analysed. Like the former survey first x-ray was applied to detect Bromine in the sample followed by chemical analysis to identify a possible content of BFR. In total 828 components were analysed for Bromine. 18% of the components contained Bromine. 65 of the components containing Bromine were tested and 14 contained a BFR. This correspond to 22%. Eleven components contained both TBP (tribromophenol) and TBBPA, two contained TBP and one contained penbromotoluene. Six of the eleven components containing both TBP (tribromophenol) and TBBPA had concentrations above 1000 ppm. The highest concentration was 2.9%. One of the two samples containing TBP had concentrations higher than 1000ppm (3.7 %).

We would also like to draw your attention to a Norwegian survey. The results from this survey has been copied into the third sheet in the attached Excel file ((2016 08 B in EEE.xlsx) and is named “Norske Målinger”. Here they identified TBBPA in three samples all below 1000 ppm and TBP in one sample with a concentration below 1000 ppm. Based on the structural similarity TBP might be a decomposition product from TBBPA. Further, they found heptaBDE, dekabromodiphenyletan and octaBDE all in concentrations below 1000 ppm. Only dekaBDE, which is restricted in the RoHS Directive was found in high concentration above 1000 ppm. If needed, please ask the Norwegian Authorities if they have more information about their survey.

Further, as you are aware we have financed two publications on BFRs. One on the grouping of BFRs (<https://www2.mst.dk/Udgiv/publications/2016/07/978-87-93435-90-2.pdf>) and one with a specific focus on SBAA. In the first report on grouping of BFRs an analysis has been performed on BFRs in use which have similar/comparable structure to TBBPA (group 5). This may be of relevance for the current assignment.

We have also investigated the use of EEE in families with children: <https://www2.mst.dk/Udgiv/publikationer/2014/11/978-87-93283-11-4.pdf>. Unfortunately this report is in Danish, however, if you think any of the information is relevant please let us know or if you have any question regarding the use of EEE in general, then we will see if the report might have the answer.

Finally, we have links to other reports that may be of interest on our home page: <http://mst.dk/kemi/kemikalier/fokus-paa-saerlige-stoffer/bromerede-flammehaemmere/>