

11 February 2020

Review of Substances in Electrical and Electronic Equipment for Potential Restriction under RoHS

BSEF comments on the Draft Oeko Institut dossier on TBBPA – (Dec 4, 2019)

Introduction

The RoHS Directive (Directive (EU) 2017/2102) lays down rules on the restriction of the use of hazardous substances in electrical and electronic equipment (EEE). In early 2018, the European Commission, via third party contractors – the Oeko Institut and Fraunhofer IZM, initiated a review of TBBPA for possible restriction under RoHS along with six other substances. The International Bromine Council, BSEF, provided detailed information and studies in response to calls for information made by the consultants.

On December 4th, 2019, the Oeko Institut issued a draft assessment of TBBPA for stakeholder consultation. The draft TBBPA dossier is available on the Oeko-Institut [website](#). BSEF and its member companies have reviewed the draft assessment and are providing both summary and detailed comments on this draft.

BSEF's summary assessment of the Oeko Institut draft dossier for TBBPA is provided below against the criteria set out in Article 6 of RoHS (see annex).

1. It is scientifically inappropriate to use the properties of BPA for hazard and risk assessment on TBBPA

- The Oeko Institut draft assessment has not demonstrated that TBBPA meets any of the criteria in Article 6 of the RoHS Directive¹ as **it predicates its entire assessment on TBBPA being analogous to BPA in terms of effects** for human beings – workers and consumers.
- BSEF and its member companies are surprised and **concerned by this unscientific attempt to “read across” effects related to Bis-phenol-A to TBBPA.**
- **The “attempted read across” is not only inappropriate but also not needed as there is sufficient data for TBBPA itself to assess the hazard.** The rationale provided in Section 3.3 regarding the use of non-testing information opposing existing DNELs is insufficient to support the utilization of DNELs for BPA in evaluating TBBPA.
- Contrary to standard practice, a comprehensive evaluation of read-across elements (on an

¹ DIRECTIVE (EU) 2017/2102 amending Directive 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment <https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1512061986553&uri=CELEX:32017L2102>



endpoint-specific basis) was not conducted. The studies cited in the RoHS proposal do not provide adequate support (and in several cases, provide evidence which is contrary to use of read-across). Experimental data demonstrates the lack of similarity in metabolism and does not support a read across approach.

- Empirical data and/or (Q)SAR model predictions for endocrine activity and DART do not support the use of read-across. And most notably, the BPA DNELs are based on effects for which empirical data demonstrate do *not* occur for TBBPA – thus there an absence of scientific logic for proposing use of BPA DNELs for TBBP-A.

2. The assessment of the impact of TBBPA on recycling is not valid nor reflecting actual recycling of EEE Plastics

- Concerning the assessment of any negative impact from TBBPA for electrical and electronic equipment (EEE) recycling: In its reactive application, (90% of end use), TBBPA is not an issue for end of life treatment as it is part of the epoxy resin with printed wiring boards. Such components are treated for precious metal and copper recovery in smelters operating under the EU Industrial Emission Directive.
- In its additive application (10% of end use), TBBPA is not contaminating the plastics. Plastics containing TBBPA are recycled along with other BFRs based on the WEEE Directive² and related CEN standards, which enable recyclers to sort legacy BFRs from other BFRs including TBBPA based on Br content. This can be verified through the European Electronic Recyclers Association (EERA). Further, the effectiveness of this CEN standard Br cut-off value was recently validated in a research project in France (Hennebert & Filella (2018))³.
- To realistically determine the actual impact on recycling requires more than just opinions. It requires a detailed assessment of flows, levels of BFRs and comparisons of treatment options available for high bromine content EEE plastics versus incineration. The EU has supported or is supporting some 20 million EUR worth of research and demonstration projects all aimed at improving the yield and quality of end of life EEE from recycling as well as addressing legacy BFRs. Therefore, at this point in time the opinion of the Oeko Institut on the impact of TBBPA for recycling on is not valid.

Analysis of Alternatives

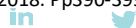
- The analysis of alternatives and “socio-economic analysis” outlined in the Oeko Institut draft assessment is very poor indeed. It is not based on any sound data. It does not even approach what would be required under the REACH Guidance on socio-economic analysis and analysis of alternatives. Given the availability of appropriate, robust REACH Guidance for such exercises, such guidance should be the *de minimis* for undertaking this part of the assessment and the Oeko Institut has not followed the same.

Conclusions

The Oeko Institut draft dossier on TBBPA contains an assessment of risks based on extrapolation of

² DIRECTIVE 2012/19/EU <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32012L0019>

³ Hennebert P & Filella, M. Waste Management : 71 (2018). Pp390-399).



effects from another substance. There is no scientific reason for this to be done given that there is sufficient available data and information on TBBPA to base the assessment on the substance itself. Therefore, the draft recommendation for restriction of additive uses of TBBPA is unsupported.

The International Bromine Council maintains its strong view that under controlled conditions there is no risk from TBBPA (reactive or additive uses) identified for humans or the environment during waste treatment. In general, there is also no negative impact on waste management. As such, a restriction under RoHS of TBBPA is unjustified.

About BSEF

BSEF – the International Bromine Council, is the global representative body for bromine producers and producers of bromine technologies. Originally founded in 1997, BSEF works to foster knowledge on the societal benefits of bromine and its applications. The members of BSEF are Albemarle Corporation, ICL Industrial Products, Lanxess and Tosoh. Further information:

Visit www.bsef.org to learn more and follow BSEF on Twitter [@BromineInfo](https://twitter.com/BromineInfo) for the latest news and information.

Further information:

Further information can be obtained from Dr Kevin Bradley (kbradley@bsef.org)





Annex/

Legal basis for RoHS Substance Assessments

Article 6 of RoHS Directive sets the frame for the assessment of whether a substance should be restricted or not. It specifically obliges the Commission to take special account of whether a substance or a group of similar substances:

- *could have a negative impact during EEE waste management operations, including on the possibilities for preparing for the reuse of waste EEE or for recycling of materials from waste EEE;*
- *could give rise, given its uses, to uncontrolled or diffuse release into the environment of the substance, or could give rise to hazardous residues, or transformation or degradation products through the preparation for reuse, recycling or other treatment of materials from waste EEE under current operational conditions;*
- *could lead to unacceptable exposure of workers involved in the waste EEE collection or treatment processes;*
- *could be replaced by substitutes or alternative technologies which have less negative impacts.*

