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HEAL response to European Union proposal to list bis(2-ethylhexyl) tetrabromophthalate in Annex A to the Stockholm Convention on Persistent Organic Pollutants

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The Health and Environment Alliance (HEAL) welcomes the proposal by the European Union to list bis(2-ethylhexyl) tetrabromophthalate (TBPH; EC 247-426-5) covering any of the individual isomers and/or combinations thereof in Annex A (Elimination) to the Stockholm Convention on Persistent Organic Pollutants due to its persistence, bioaccumulation, long-range environmental transport and adverse effects. We fully support this proposal.

The comprehensive proposal contains conclusive evidence on the persistence, bioaccumulation, potential for long-range transport and adverse effects of TBPH, a member of the group of aromatic brominated flame retardants [1]. We consider the information requirements and screening criteria of Annex D in the Stockholm Convention to be well addressed and support the conclusions drawn in the proposal.

In a literature search we have identified two additional recent studies on TBPH, which we list below. As we consider the information presented in the proposal as sufficient to conclude positively about the listing of TBPH in Annex A of the Stockholm Convention, we see this additional data solely as further supporting evidence on the substances' hazardous properties.

Hong et al. (2025) present evidence for disrupted thyroid hormone conversion and suppressed growth in juvenile rare minnows (*Gobiocypris rarus*) in a 28-day exposure experiment [2]. These findings complement the evidence presented in the proposal on the effects of TBPH exposure *in vitro* in the human thyroid follicular epithelial cell line, and *in vivo* on the thyroid of male rats (paragraphs 58 and 59), showing that thyroid hormone disruption by TBPH is not only relevant for humans and other mammals but also for fish.

Zhou et al. (2024) report stunted liver development in transgenic zebrafish *Tg (Apo14: GFP)* following the exposure to TBPH [3]. This study complements the findings by Fu et al. (2024b) on disturbances in glucose metabolism and liver lipid accumulation in wild-type zebrafish (paragraph 64 and 65).

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References

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[2] Hong, X. S., Yan, L., Sang, W., Liu, W., Li, Z. T., Wang, J., ... & Zha, J. M. (2025). Environmental Levels of Bis (2-ethylhexyl)-tetrabromophthalate (TBPH) Cause Thyroid Toxicity and Early Carcinogenic Signals in Juvenile Fish. Environmental Pollution, 126568.

[3] Zhou, Y., Li, F., Fu, K., Zhang, Y., Zheng, N., Tang, H., ... & Zhou, B. (2024). Bis (2-ethylhexyl)-2, 3, 4, 5-tetrabromophthalate enhances foxo1-mediated lipophagy to remodel lipid metabolism in zebrafish liver. Environmental Science & Technology, 58(10), 4581-4593.

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