

Towards an improved understanding of persistence in the 21st century

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ABSTRACT

There is increasing concern that progress in the scientific understanding of factors which influence the outcome of chemical persistence (P) assessments (principally biodegradation) are not fully recognised in existing regulations and environmental risk assessments. For example, many of the recent developments recommended in the multi stakeholder workshop organised by ECETOC in 2012¹ and from CEFIC LRI research projects were not incorporated into the latest ECHA (European Chemicals Agency) Persistence, Bioaccumulation and Toxicity (PBT) guidance documents.

All biodegradation tests have their limitations which are accentuated for 'difficult to test' substances but these failings are often not recognised and consequently many chemicals are incorrectly labelled as 'P' persistent.

The implications of a 'P' classification are of increasing concern to manufacturers owing to proposals to classify substances according to whether they are Persistent in the environment, for example as PBT (persistent, bioaccumulative and toxic) or PMT (persistent, mobile in the aquatic environment and toxic to human health) substances². These proposed classifications raise concerns because they could lead to hazard-based restrictions on mobile substances that present no significant risk to the environment. Such a situation could arise, for example, if mobile substances that rapidly biodegrade in groundwater environments are found to fail laboratory based biodegradation tests.

Many of the shortcomings and research needs to improve persistence assessments were recognised at the ECETOC 2012 Workshop. However, recent developments have increased awareness that the key learnings from this Workshop, subsequent CEFIC LRI research programmes and related activities have not been adequately disseminated to regulators and the wider scientific community.

This presentation will provide an overview of some of the key elements and messages coming from both CEFIC LRI and CONCAWE Research programmes, how these interrelate and more importantly redress some of the 2012 Workshop recommendations and P assessment needs. This overview is being collated in preparation for a 'persistence' workshop with ECHA and other major stakeholders in 2018. The intent being to discuss how recent developments are given appropriate consideration by regulators and the wider community as part of a journey to take the persistence assessment of chemicals into the 21st Century.

REFERENCES

[¹] ECETOC Workshop Report 24 – Assessing Environmental Persistence 6-7 November 2012, Paris
<http://www.ecetoc.org/publication/workshop-report-24-assessing-environmental-persistence/>

[²] Reemtsma, T et al (2016). Mind the Gap: Persistent and Mobile Organic Compounds—Water Contaminants That Slip Through. Environ. Sci. Technol Lett.
<http://pubs.acs.org/doi/full/10.1021/acs.est.6b03338>