

Reducing at source water pollution by emerging contaminants resulting from consumer products: supporting responsible production and consumption practices

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Emerging contaminants from Personal Care Products (PCPs) and household agents are now increasingly found as trace pollutants in water bodies, contributing to the pollution from so-called Contaminants of Emerging Concern (CECs). The fate and impact for the environment and human health is still barely understood. Yet, there is a scientific consensus that such increasing pollution might constitute an unprecedented risk to an unpredictable extent. Indeed, the growing evidence demonstrate a variety of adverse effects, such as persistence, transgenerational and combination effects [1].

With the media coverage of some emerging pollutants on the rise, such as nanoparticles, microplastics or endocrine disruptors, such concern over long term impacts is now raising public awareness and requires a societal response, beyond case-by-case regulation and costly pollution treatment approaches, unsuitable for diffuse pollution. Therefore, reducing the use of CECs at source seems to be a more appropriate alternative with the aim to improve availability and visibility of cleaner products and impact significantly consumer habits.

The challenges raised by CECs fulfil the conditions to trigger precautionary actions, being characterised by a high level of scientific uncertainty on mechanisms, impacts and scale, and threatening to significantly disturb complex natural processes as a result of human activity. Examples of such uncertainties identified are: unusual dose-effect relationships, uncontrollable combination of chemicals, long term effects (due to persistence, bioaccumulation and/or transgenerational effects), unknown pathways, transport and fate in the environment, mechanisms of action (e.g. endocrine disruption).

Evidence of such hazards are building up, however, action is required before the phenomena reach such a scale that irreversible harm can be caused, . Existing precautionary solutions have been identified to support substitution by design (e.g. green chemistry and green engineering principles applied to design and manufacturing of products [4]), alternative or responsible use (such as sustainable consumption, eco-labelling [5]). Their opportunity and barriers for implementation will be explored in the future via a social investigation.

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