THE UNASSEST ROLE OF POPs AND SURFACE-ACTIVE SUBSTANCES IN SUSTAINABLE WATER MANAGEMENT PROCESSES

NOTURĪGO ORGANISKO SAVIENOJUMU UN VIRSMAS AKTĪVO SAVIENOJUMU NENOVERTĒTĀ LOMA ILGTSPĒJĪGA ŪDENS APSAIMNIEKOŠANAS PROCESĀ

Daina Kalnina, docent, Dr.Chem.
Riga Technical University, Faculty of Material Science and Chemistry
Address: Azenes str. 14, Riga, LV-1048
Phone: + 371 67089265, Fax: + 371 67089265
e-mail: daina.kalnina@rtu.lv

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Introduction

In the 21st century the words climate change and water scarcity are almost daily topics in the newspapers, other mass media and Internet sources. It is evident that the protection of our water resources is of major importance on a global scale. One of the hazardous component classes for environment and human health are persistent organic pollutants (POPs).
The Stockholm Convention on Persistent Organic Pollutants [www.pops.int] is an attempt to globally target this problem at the international level. The Convention calls for cooperation on a global scale to control the manufacturing, import and export of POP substances, to limit their use and to control the methods used for their disposal.
The Convention is a global international agreement to protect the environment and health of humans from chemicals that are persistent in the environment for long periods of time.

Latvia and persistant pollutants

Climate change is one cause of dramatic changes in the water levels in open water basins and thus, also the direct contact with water of various Persistent Organic Pollutants (POPs), including with water containing different washing agents.
The use of POPs after the Second World War created a pollution hazard that people were not conscious of at the time and their detrimental effect upon human health only became known subsequently.
Due to their absorption properties, POPs accumulate in the soil and sediments. Any technical and/or natural activity that stirs up water, can suspend the sediments and they become soluble in the water column.
Historically, neither polychlorated bifenyls (PCBs) nor pesticides have been manufactured in Latvia, but they have been used broadly over several decades. At the same time, Latvia was one of the first countries in the world (1967) to ban the use of DDT and Latvia was among the first two countries to submit its National Implementation Plan for the elimination of POPs in June 2005. Although PCBsare no longer manufactured, exposure still occurs as a result of historical contamination and the decommissioning of older transformers and capacitors, which have a lifetime of 30 years and more.

Through assistance provided by the Global Environmental Facility (GEF), two United Nations Development Programme (UNDP) projects have been implemented in Latvia from the year 2002. As a result, PCB elimination was set as a national priority and concrete plans were implemented for full inventory of PCBs sources, improved legislation for control and liquidation of over 400 tons of transformers and capacitators containing PCBs.
The use of washing agents, which contain various chemicals, continues to increase annuall5 worldwide. This problem has both a local and global character. Similar and different detergents have been used in every country, and that is why the process in every place could occur in similar or very different ways. Surface-active compounds are an integral part of washing agents. After their use these compounds are deposited in water in large quantities. One of the environmental problems and threats to human health is the ability of these surface-active compounds to dissolve persistent organic pollutants. Particular attention needs to be paid to the development of national policies for the control of surface-active chemicals in polluted washing waters and wastewaters. The first step would be an initiative to ensure that Latvian regulations and legislation are backed up with effective control systems for not only for "surface-active substances" as a whole, but also specifically for nonionic and cationic substances.

Precautionary principle and persistant organic pollutants

At the present time, with the accumulation of readily available scientific information, environmental risks can be identified and predicted much more quickly. Currently at the global level, environmental legislation incorporates a number of important principles, including the principle of accessibility of environmental information, the "polluter pays" principle and the precautionary principle, which i necessary for drawing attention to the possible risks and uncertainties. Considerable attention is being paid to environmental problems concerning water pollution, for organic chemicals reach the environment in a variety of ways and forms and one of them are persistant organic pollutants.

Kalnina D., The unassest role of POP, and surface-active substances in sustainable water management processes*. One of the hazardous component classes for environment and human health are Persistent organic pollutants (POPs). The Stockholm Convention on Persistent Organic Pollutant is an attempt to globally target this problem at the international level. Climate change is one cause of dramatic changes in the water levels in open water basins and thus, also the direct contact with water of various Persistent Organic Pollutants (POPs including with water containing different washing agents.*

Kalniņa D., Noturīgo organisko savienojumu un virsmas aktīvo savienojumu nenovērtētā loma ilgtspējīga ūdens apsaimniekošanas procesā *Vieni no visbīstamākajiem savienojumiem cilvēku veselībai un apkārtējai; videi ir noturīgie organiskie piesārņotāji. Stokholmas konvencija par noturīgajiem organiskajiem piesārņotājiem ir mēģinājums globālā mērogā risināt problēmu par noturīgajiem organiskajiem piesārņotājiem. Klimata maiņa potenciāli var radīt dramatiskas izmaiņas virsūdens ūdens baseinu līmeņos un pakļaut tiešā kontaktā noturīgos organiskos piesārņotājus ar ūdeni, kura sastāvā atrodas noturīgi organiskie piesārņotāji.*