

PRETREATMENT CORNER

Compounds of Emerging Concern Part II

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The Water Environment Federation (WEF) recently provided a Webcast focusing on compounds of emerging concern (CECs). There were also presentations at the WEFTEC conference in October 2006 concerning the presence of CECs in wastewater plus how can CECs be treated and effectively removed from wastewater and biosolids. More and more information is being disseminated to the public as research data becomes available. This column provides highlights of some of this more recent information.

As a refresher, CECs encompass several categories of chemicals. CECs may include endocrine disrupting compounds (EDCs), such as estrogens; pharmaceuticals and personal care products (PPCPs); polybrominated diphenyl ethers (PBDEs) used in polyurethane foam, furniture, electronics and textiles; alkylphenol ethoxylate (APE) and nonylphenol ethoxylate (NPE) surfactants; and other persistent organic compounds.

NPEs are not only used in detergents but also in paints, adhesives, textiles, pesticides and industrial cleaners. While NPEs are relatively benign as they enter a wastewater treatment plant, they typically degrade to nonylphenols (NPs) which are more persistent in the environment and may cause aquatic toxicity. NPs are discharged from a wastewater treatment plant to the environment either to the receiving stream from the treated effluent discharge or through biosolids disposal practices.

EPA published recommended water quality criteria for Nonylphenol in the February 23, 2006 *Federal Register* as follows: Acute criteria of 28 µg/L as a 1-hour average once every 3 years and Chronic criteria of 6.6 µg/L as a 4-day average once every 3 years. As part of its Environmental Stewardship program, Design for the Environment (DfE), EPA is developing the Safer Detergents Stewardship Initiative (SDSI). The SDSI hopes to reduce the use of NPEs while encouraging the use of safer detergents.

How do we inform the public that the products they are using may ultimately harm the environment without causing undue alarm (to the public, terms such as “endocrine disrupting chemicals” or “emerging concern” may be alarming) or by generating complacency (public notice presented in very calming language). How many times have you heard opposing stories about the health of red wine, or the benefits and negatives of chocolate, through a multitude of research studies? People believe what they want to believe. So how do we provide the public with information they can understand about CECs so they can make informed choices?

As more and more information becomes available on the fate of CECs in the environment, we must start to educate the public. One public education campaign that is currently being used for Mercury is to distribute proper disposal procedures to affected stakeholders such as dental practices. Similar public education may be conducted for CECs by alerting the public to the proper disposal of unwanted and expired medications and PCPPs. Manufacturers could be encouraged to include appropriate disposal guidance on their product labels. The following website link is for one such public outreach program in California: <http://nodrugdownthedrain.org/>. It is not too early to educate ourselves on these “emerging” concerns.