

Fate of Micropollutants in Drinking and Wastewater Treatment and Consequences for Process Design

H. Siegrist*, A. Joss*, T. Ternes**

* Swiss Federal Institute of Aquatic Science and Technology, Eawag, 8600 Dübendorf, Switzerland

**Federal Institute of Hydrology, BfG, 56068 Koblenz, Germany

Abstract: Through improved methods of chemical analysis, micropollutants, e.g. pharmaceuticals and endocrine disrupting compounds are increasingly being detected in our water bodies. In most cases these enter the wastewater after being excreted in urine and feces. In the sewage plant, a part of the substances is eliminated via sorption and biological degradation. The rest is discharged with the treated effluent. In surface water and during bank infiltration further elimination is observed but some micropollutants persist, acting as wastewater tracer in groundwater and are also detected in drinking water. This article describes possible measures for eliminating trace organics in waste and drinking water treatment. These include on the one hand, permanent measures at the source such as an eco-label for pharmaceuticals and personal care products as well as the separate treatment of strongly polluted wastewater, e.g. in hospital or industry. However, as most of these measures can only be implemented over the long term, it is expedient on the other hand, to also consider technical measures such as increasing the sludge age in the activated sludge tanks of WWTP and for crucial locations, additional treatment with ozone or activated carbon.

Keywords: Micropollutant, drinking water, wastewater, ozonation, activated carbon, source control.