

## 10. Ecotoxicological Profiling of Prioritized Plastics Additives in Freshwater and Soil

Sustainability of plastics cannot be achieved without evidence-based knowledge on potential hazards regarding both the chemical makeup of the material as well as physical effects of plastic particles (nano/microplastics). By the current knowledge, over 16 000 chemicals have been associated with plastics. Monitoring studies have shown ubiquitous presence of microplastics and the largest group of plastics functional additives - plasticizers.

The ESR project is about environmental hazard analysis of selected plastic additives (and nano/microplastic) in environmentally relevant exposure settings. The aim is to mimic potential exposure scenarios but also to analyse the potential toxicity drivers/mechanisms. Due to the number of open questions in plastic hazard research, the hypotheses can be formulated jointly by the supervisors and the ESR, depending on his/her background. For instance, whether to focus on aquatic or terrestrial biota; on plastic additives or micro/nanoplastics. Also, the polymer types will be selected together in the final planning phase. The number of plastics additives is high and compared to microplastics, it is a considerably understudied field. As the biological effects of nanoplastics is another potential research avenue, experience in nano(eco)toxicology or hazard evaluation of particulate contaminants is beneficial.

### Supervisory team:

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