

# Emerging Contaminants in Remote Marine Waters

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Marine coastal waters are receptors of thousands of chemical pollutants. Several anthropogenic chemicals were detected in surface water even in remote oceanic regions [1]. A number of international conventions aim at regulating some classes of prioritized substances of particular concern. Priority lists, however, are generally limited to a few dozens of chemicals with well-studied toxic properties [2]. Unregulated chemicals frequently detected in environmental samples include several classes of chemicals encompassing both high- and low- production volume substances, e.g., antifouling pesticides, plasticizers, anticorrosive agents, surfactants, flame retardants, pharmaceuticals, personal care products, herbicides and food additives [3]. These are further referred to as Contaminants of Emerging Concern (CECs). Risks posed by CECs to the environment and human health are largely unknown due to the lack of information about their occurrence and sub-lethal toxicity effects.

Results of monitoring of several classes of CECs in the North Sea and the Western Mediterranean Sea will be presented [4, 5]. In the North Sea, 14 currently used pesticides, 11 pharmaceuticals and personal care products and 3 food additives were detected in water samples through targeted analysis at sub-ng to tenths of ng/L levels in both coastal and offshore areas [4]. The samples were collected using pre-programmed automatic sampler on board of a ship of opportunity. In the Mediterranean Sea, the spatial and temporal distribution of per- and polyfluoroalkyl substances (PFASs) in open surface waters was investigated [5]. PFASs had a relatively homogeneous distribution with levels similar to those previously measured in the Atlantic near the Strait of Gibraltar, in water masses feeding the inflow to the Mediterranean Sea. In addition, 3 currently used pesticides, 11 pharmaceuticals and personal care products and two artificial sweeteners were detected in the Western Mediterranean offshore waters.

## References

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