



DGT Use for Organic Compounds in Water

Diffusive Gradient in Thin Films—Organics

Summary

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| Media: | Water |
| Study Type: | Review |
| Technology: | Accumulation |
| Peer Reviewed: | Yes |
| Publication Date: | September 2021 |

Study Description

Review of DGT use and configuration focused on organic compounds and effects of sampler construction, including potential adsorption of compounds to outer filter membrane, deployment considerations in media, storage of samplers, and potential for combining DGT with biological test methods.

Review includes discussion of organic compounds recovery across the multiple membrane layers and influence of materials on these effects.

Remedial Phase

Not applicable. This is a literature review of several peer-reviewed case studies and review papers that summarize current state-of-practice for DGT use for organic compounds in water.

Outcome

The review notes the usefulness of DGT samplers in aquatic and terrestrial media (although deployments have been limited in solid media). DGT use and effectiveness may be affected by the materials of construction and configuration, with potential for using the diffusive gel as an outer layer being one way to approach sampler construction concerns. The study also suggests possibilities for combining DGT techniques with bioassays to predict bioavailable fractions in ecosystems.

References

X. Ji; J.K. Challis; and M. Brinkmann. 2022. A critical review of diffusive gradients in thin films technique for measuring organic pollutants: Potential limitations, application to solid phases, and combination with bioassays. *Chemosphere* 287: 132352. <https://doi.org/10.1016/j.chemosphere.2021.132352>