

# **Sensitive Methods for the Analysis of Decamethylcyclopentasiloxane (D5) in Air and Biota**

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To date risk assessments of decamethylcyclopentasiloxane (D5) have been based on almost no environmental data due to the lack of analytical methods with sufficient sensitivity. Trace analysis of D5 has proven to be difficult, in particular due to method blank problems caused by the ubiquitous presence of D5 in high concentrations in indoor air. Here we present novel analytical methods for the determination of D5 in ambient air and fish. Both methods employ solid phase extraction using ENV+ cartridges. The air method involves pumping air through ENV+ cartridges at 250 L/h. The method is characterized by very low breakthrough, good recovery, good reproducibility, and field blanks that are generally in the sub-nanogram per sample range. The biota method exploits the comparatively low tissue/air partition coefficient by using an active head space approach to purge the D5 out of a heated sample slurry and trap it on and ENV+ cartridge. The method characteristics include large sample volumes, minimal exposure of the sample to air during analysis, simultaneous homogenisation, extraction and clean-up, and clean extracts. The method detection limit achieved was ~0.3 ng/g wet weight.