

Multidimensional Chromatography in Environmental Analysis

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Multidimensional gas chromatography - ECD is an essential technique for the accurate analysis of specific organics in environmental samples. It serves to obtain well separated peaks for otherwise closely eluting compounds when using single column capillary GC-ECD.

Its use in the accurate analysis of toxic non-*ortho* Cl CBs and their mono-*ortho* Cl derivatives in various commercial PCBs (American, German, French, Japanese and Russian) is presented as a case study. The various analytical complications involved in indirect methods such as charcoal chromatography, etc. in the measurement of the above mentioned toxic congeners are presented.

The complex nature of environmental samples for persistent organochlorine measurements such as in CBS, DDTs and HCHs is further evidenced by this high resolution technique. Several cases of possible misidentification in environmental samples for these compounds are presented. Thus MDGC-ECD technique has identified hitherto unnoticed possibilities of error in environmental analysis. Its possible implication to dioxin and dibenzofuran research is addressed.

