

THE DIRECT 2,3,7,8-TCDD DETERMINATION IN WATER AND ORGANIC SOLVENTS ON THE P.P.T. LEVEL USING CHROMADISTILLATION COUPLED TO GC/MS

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The method of chromadistillation has been developed in 1975 by Zhukhovitsky A.A. et al. This method allows to concentrate impurities being present in the solution during the run and to put into the column samples as large as 1-10 ml.

We has developed the method of 2,3,7,8-TCDD determination in water and organic solutions based on coupling of chromadistillation method with capillary GC and low resolution mass- spectrometry with atmospheric pressure chemical ionisation (mixture of oxygen with nitrogen or helium has been used as ion-reagent). This method allows to determine 2,3,7,8-TCDD with high selectivity and sensitivity thanks to as GC and CJ (negative ion model) and chroma distillation (the sample size was 1-5 ml). It has been shown that this method allows to determine 2,3,7,8-TCDD in water and organic solutions and their mixtures with water (which are used as eluents in HPLC) without preliminary concentration on the low p.p.t. level.

Preconcentration based on extraction and use of based on extraction and use of HPLC for sample preparation allows to decrease the detection limit to p.p.g. level using low resolution mass-spectrometry. The corresponding data will be presented.

