



EPA Method 8270B Using the TurboVap II Concentration Workstation

Introduction

The following describes matrix spike and surrogate spike recovery from soil samples using Caliper Life Sciences TurboVap II Concentration workstation. The data provided comes from a variety of actual soil samples analyzed in the laboratory. The data provided comes from a variety of actual soil samples analyzed in the laboratory.

Method Summary

The extraction consisted of 20 grams of field-moist soil weighed into a beaker and mixed with sodium sulfate as the drying agent. This aliquot was then spiked with baseneutral/ acid compounds and surrogates. Using an ultra sonic horn, the sample was sonicated for 3 minutes with 60mL Methylene Chloride. After sonication, the extract was filtered into a Caliper TurboVap vessel. This process was repeated 2 additional times. All 3 extracts were combined into the same TurboVap vessel. The extract was evaporated on the TurboVap II to 1.0mL and then analyzed by GC/MS following EPA method 8270B

Specifications and Operating Conditions

TurboVap II Concentration Workstation

Solvent:	Methylene Chloride
Solvent Starting Volume:	180mL
Solvent Exchange:	None
Solvent End Volume:	1.0mL
Bath Temperature:	40 °C
Gas Pressure:	21 psi
Length of Time:	35 minutes

HP5890 GC with 5970 Mass Spectrometer

0.25mm x 30M column 40 °C (0),
8 °C/min, 330 °C, 26 minutes

Results

BNA Recoveries on Soil Samples

Matrix Spike Compounds	Mean of 14 Replications	Surrogate Compounds	Mean of 81 Replications
Phenol	63%	2-Fluorophenol	68%
2-Chlorophenol	61%	Phenol-d6	81%
1,4-Dichlorobenzene	58%	Nitrobenzene-d5	93%
n-Nitroso-di-n-propylamine	70%	2-Fluorobiphenyl	73%
1,2,4-Trichlorobenzene	65%	2,4,6-Tribromophenol	62%
4-Chloro-3-methylphenol	74%	p-Terphenyl-D14	82%
Acenaphthene	79%		
4-Nitrophenol	76%		
2,4-Dinitrotoluene	83%		
Pentachlorophenol	80%		
Pyrene	94%		

Acknowledgements

Data submitted by Steven D. Castellano of Pacific Northwest Laboratories, Eugene, Oregon.