

7 US EPA Method 8080:

Sources for module

<http://www.epa.gov/bioindicators/primer/sampling.html>

U.S. EPA Method 8080; From "Compilation of EPA's Sampling and Analysis Methods; Ed. Lawrence H. Keith; Compiled by William Mueller and David L. Smith, 1991, Lewis Publishers

<u>Pesticide</u>	<u>CAS#</u>	<u>Method Detection Limit (MDL)</u>		<u>Accuracy</u>
		<u>Range</u> : g/L	<u>MDL</u> : g/L	
"-BHC	319-84-6	8.5-400	0.003 (in reagent water)	0.84
\$-BHC	319-85-7	"	0.006	0.81
*-BHC	319-86-8	"	0.009	0.81
(-BHC (Lindane)	58-89-9	"	0.004	0.82
4,4'-DDD	72-54-8	"	0.011	0.84
4,4'-DDE	72-55-9	"	0.004	0.85
4,4'-DDT	50-29-3	"	0.012	0.93
Dieldrin	60-57-1	"	0.002	0.90
Endosulfan I	959-98-8	"	0.014	0.97
Endosulfan II	33213-65-9	"	0.004	0.93
Endosulfan sulfate	1031-07-8	"	0.006	0.89
Endrin	72-20-8	"	0.006	0.89
Endrin Aldehyde	7421-93-4	"	0.023	n.d.
Heptaclor	76-44-8	"	0.003	0.69
Heptaclor epoxide	1024-57-3	"	0.083	0.89
Methoxychlor	72-434-5	8.5-400	0.176	n.d.

APPLICATION: - Method used for 19 pesticides, describes extraction of samples, concentration and analysis of neat and diluted organic liquid by GC

INTERFERENCES: Phthalate esters are common so all plastics must be strictly avoided. Exhaustive cleanup of reagents and glassware may be required to eliminate phthalate contamination.

INSTRUMENTATION: Column 1: 1.8 meter by 4 mm with 1.5% SP-2250/1.95% SP-2401 on Supelcoport. Column 2: 1.8 m by 4 mm with 3% OV on Supelcoport

SAMPLING METHOD: Use 8 ox. Wide mouth glass bottles with Teflon lined caps for concentrated waste samples, soils, sediments and sludges. Use 1 or 2 ½ gallon amber glass bottles with Teflon lined caps for liquid (water) samples.

STABILITY Cool soil, sediment, sludge and liquid samples to 4°C. If residue chlorine is

present in liquid samples add 3 mL of 10% sodium thiosulfate per gallon of sample and cool to 4°C. M.H.T. (Maximum holding time for sample) = 14 days for concentrated waste, soil, sediment or sludge. M.H.T. = 7 days for liquid samples. All extracts must be analyzed within 40 days.

QUALITY CONTROL: A quality control check of sample concentrate containing each analyte of interest is required. The QC check sample concentrate may be prepared from pure standard materials or purchases as certified solutions. Use appropriate trip, matrix, control site, method, reagent and solvent blanks. Internal, surrogate and five concentration level calibration standards are used. The quality control check sample concentrate should contain compound at 2 ug/mL in acetone.

DEFINITIONS

Trip blank - samples of analyte-free media taken from the laboratory to the sampling site and returned to the laboratory unopened. They are used to measure cross-contamination from the container and preservative during transport, field handling, and storage.

Matrix blank: matrices minus the analytes of interest that are carried through all steps of the analytical procedure. All reagents, glassware, preparations, and instrumental analyses are included. These are necessary to account for the presence of spurious analytes, interferences, and background concentrations of the analyte of interest.

Solvent blank: blanks consisting only of the solvent used to dilute or extract the sample. They are used to identify and/or correct for signals produced by the solvent or by impurities in the solvent.

Reagent blank: an aliquot of analyte-free water or solvent analyzed with the analytical batch

QC check sample: a blank which has been spiked with the analyte(s) from an independent source in order to monitor the execution of the analytical method. The level of the spike is at the regulatory action level when applicable. Otherwise, the spike is usually 5 times the estimate of the quantitation limit. The matrix used is phase matched with the samples and well characterized; for example, reagent grade water is appropriate for an aqueous sample.

Surrogate: organic compounds which are similar to analytes of interest in chemical composition, extraction, and chromatography, but which are not normally found in environmental samples. These compounds are spiked into all blanks, standards, samples and spiked samples prior to analysis. Percent recoveries are calculated for each surrogate.