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ESC/Dayton (Department/Section) — Analytical (Type of Report)

REPORT NO.: MDA-549

JOB/PROJECT NO.: 484.4280

DATE: 16 October 1984

PERIOD COVERED:

TITLE: ANALYSIS FOR AROCLOR FORMULATIONS

AUTHORS: B. M. Hughes

ABSTRACT: A sample from the Indian Orchard plant was analyzed for possible concentrations of Aroclor formulations. The results of this analysis is shown in this report.

TECHNICAL APPROVAL: Paul L. Sherman
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APPROVAL DATE: 10-16-84

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AUTHORS: B. M. Hughes
TITLE: ANALYSIS FOR AROCLOR FORMULATIONS
REPORT NO.: MDA-549
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ACKNOWLEDGEMENT

Contributions of the following Dayton Laboratory personnel to this project are gratefully acknowledged:

Analyses:

B. M. Hughes
C. K. Trang

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ANALYSIS REPORT

DATE: September 20, 1984

LOG NUMBER: 1-84-09-20-01 PROJECT NO: 484.42818

TO:

Indian Orchard/Ivory

FROM:

Environmental Sciences Center
Monsanto Company/Dayton Laboratory
1515 Nicholas Road
Dayton, Ohio 45418

Phone No: (513) 268-3411

Title: Analysis of Aroclor Formulations in 44 Bldg. Spill

Standard Sampling Method No(s): Samples supplied by customer.

Standard Extraction Method No(s): none

Standard Analysis Method No(s): ECAN02

Final Report File No(s): A42818

Table File No(s): none

One sample from 44 Bldg. Spill was diluted 1:100 in Burdick and Jackson Benzene and analyzed using ECAN02 Standard Analytical Method. Figures 1 and 2 show the analysis of the diluted sample and the sample, spiked at 10 ug/g Aroclor 1254. As can be seen from these chromatograms, the 44 Bldg. Spill contains less than 10 ug/g Aroclor formulation.

ANALYST(S): B. Mason Hughes and Chi/Trang

ANALYST APPROVAL: B. Mason Hughes

MONS 023165

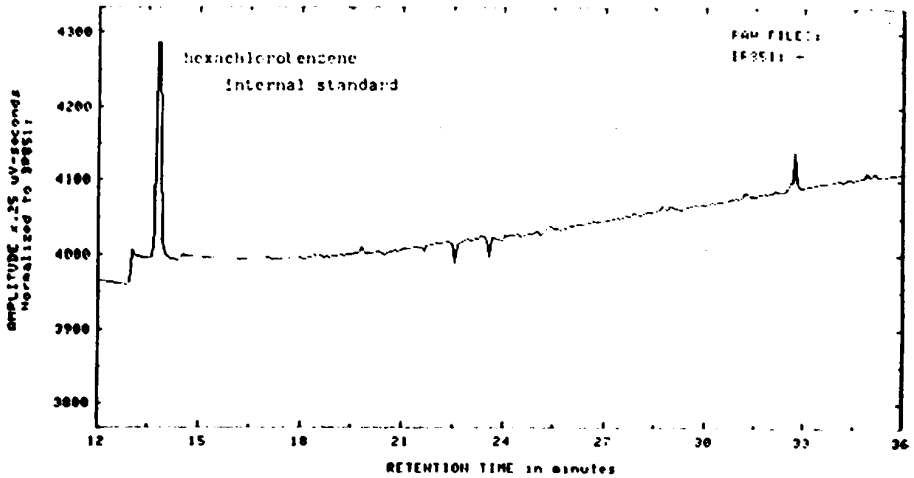


Figure 1. Capillary GC/EC of [redacted] Bldg. Spill diluted 1:100 in tenzene.

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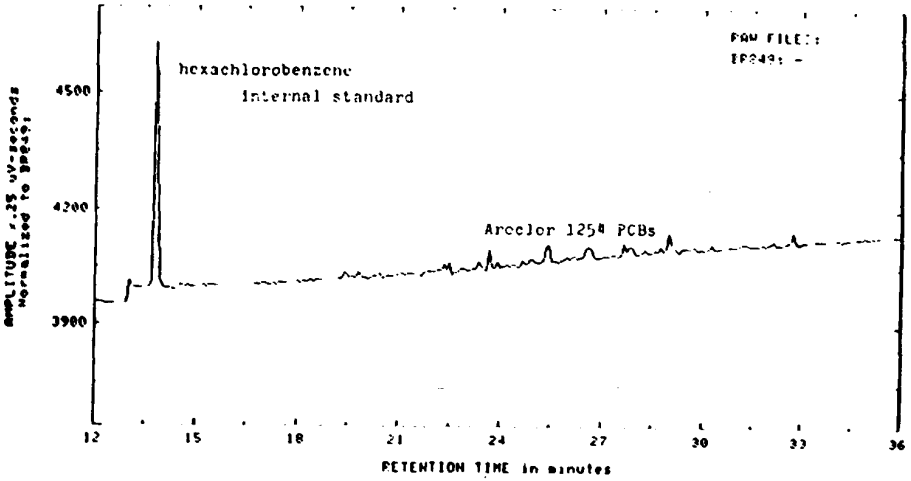


Figure 2. Capillary GC/EC of 44 Bldg. Spill, spiked at 10 ug/g Aroclor 1254.

The following pages describe Standard Extraction Methods and Standard Analysis Methods used for this project.

ESC Standard Analysis Method (SAM) — ESC Standard Analysis Method No:
TITLE: Aroclor Formulations in Solvents — ECAM02

ANALYTICAL INSTRUMENT AND MODE OF OPERATION: HP-5880 Capillary GC/EC interfaced to an HP-3357-LAS Laboratory Data System

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TYPICAL ANALYTE	TYPICAL INSTRUMENT LEVEL OF DETECTION (LOD) (ug/ml)	TYPICAL PRECISION @ 10X LOD (%)	TYPICAL ACCURACY @ 10X LOD (%)
Aroclor formulations 1232, 1242, 1248, 1254, 1260, and 1262	0.1	30	30

INTERFERENCES AND LIMITATIONS: Any electron capturing species in the retention time region of trichlorobiphenyl through octachlorobiphenyl isomers are potential interferences. Exact retention times of most likely PCB isomers can be obtained from the analysis of Aroclor 1248, Aroclor 1254 or Aroclor 1260 formulations.

CHROMATOGRAPHIC COLUMN: 30-meter fused silica J&W DB-5 (0.25 uM) with wide bore (0.32mm).

COLUMN TEMPERATURE PROGRAM: 130(1)/4/300 — INJECTION TYPE: Splitless

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CALIBRATION AND STANDARDIZATION: Use internal standard quantitation technique and calibrate instrument response factors from authentic Aroclor formulation standards. Use a minimum of 10 PCB isomers for the determination of formulation identity and quantity.

CALCULATIONS: Formulation concentration =
(Isomer RRF)(Isomer area/Internal standard area)

where: RRF is the relative response factor for the appropriate PCB isomer in a given formulation. Formulation concentration is obtained from the average of at least 10 such calculations.

SAFETY PRECAUTIONS: See PCB handling protocols in laboratory safety manual.

DATES OF METHOD CREATION AND METHOD UPDATES: 10/25/83, 2/3/84

The following pages describe Analytical Request information generated for this project.

MONSANTO COMPANY/DAYTON LABORATORY

ENVIRONMENTAL SCIENCES CENTER

ANALYSIS REQUEST

DATE: SEPTEMBER 28, 1984 LOG NO: I-84-09-28-01

REQUESTER: INDIAN ORCHARD / IVORY PROJECT NO: 404.42818

REPORT RESULTS TO: FILES/MEES,IVORY,SHERMAN

ANALYSIS REQUESTS SENT TO: FILES,IVORY,SHERMAN,HUGHES

SAMPLE PICKUP BY: HUGHES

SAMPLE LOCATION:

SAMPLE DESCRIPTION FOR 1 SAMPLE

SAMPLE IDENTIFICATION	NUMBER OF BOTTLES	ESC NUMBER(S)
44 BLDG SPILL 9-19-84	1	

RECORDED BY: R. IVORY

REQUIRED ANALYSES: PCB & POSSIBLE MATERIAL IDENTIFICATION

ANALYTICAL TECHNIQUES:

TECHNIQUE	DATE COMPLETED
X GC/EC (18)	9/28/84

QUALITATIVE: SEMIQUANTITATIVE: QUANTITATIVE:

REQUIRED QA/QC:

COMPLETION DATE REQUESTED: RUSH!

COMMENTS: Results phoned to Hank Nowick on September 28.

SAMPLE DISPOSITION: HOLD FOR 30 DAYS

SAFETY PRECAUTIONS: Possibly contains PCBs.

ANALYSIS REQUEST FILE NAME: AA4280:LI

MONS 023171