Analytical Chemistry
Special Study 70-8
Job No. 1630346

EXTRACTION OF AROCLOR 1254 FROM PAINTED SURFACES BY WATER

INTRODUCTION

The following brief study was performed to indicate if Aroclor 1254 can be extracted by water from metallic surfaced painted with paint mixtures containing Aroclor.

SUMMARY

Detectable amounts (22 to 68 ppb) of Aroclor 1254 were found in water exposed to tin plates coated with a paint mixtures containing Aroclor 1254.

DISCUSSION

Tin plate sheets 1.5" x 4.5" were coated by dipping in a mixture containing:

34.7% Parlon S-10
13.7% Aroclor 1254
8.3% Aroclor 5460
3.3% Dioctyl Sebacata
40.0% Titanox AGG

in an equal weight of xylene. After drying the coated plates were placed in 16 oz. wide mouth jars, covered with water, and sealed. The jars were then placed in an oven at 50°C. The weight of paint on the sheet was not determined. After exposure for predetermined periods, the water from each jar was analyzed by GC using Analytical Chemistry Method No. 69-13.

RESULTS

Sample No.	Exposure Period	ppb Aroclor 1254 found
1	2 weeks	28
2	3 weeks	23
3	4 weeks	28
4	5 weeks	68
5	6 weeks	22

The EC/GC fingerprint was altered with respect to the material in the paint mixture. It appeared that some of the lower chlorinated

EXHIBIT 35

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isomers were solubilized to a larger extent than the more heavily chlorinated ones. This type of alteration is indicative of Aroclor which has been solubilized in water and in part establishes the validity of the experimental results.

It is difficult to determine why twice as much Aroclor 1254 was found in Sample No. 4. A partial explanation could like in the fact that all the tin plates developed pin holes and rusted.

It is also interesting to observe that the amount of Aroclor 1254 found was not a function of exposure time. Unfortunately, a zero exposure time sample was not analyzed.

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