November 11, 1969

Mr. W. G. Turney
Michigan Water Resources Commission
200 Mill Street
Lansing, Michigan 48913

Dear Bill:

This concerns the matters discussed during the course of your telephone call to me on Friday, November 7, 1969.

As I told you I would do, I am enclosing some data we obtained on fresh water fish with our Aroclors. These are polychlorinated biphenyls manufactured by us. The numerical sequence used to identify these products is a four number system where the last two numbers represent the percent of chlorine by weight in the product. For example, in Aroclor 1254 the first two numbers (12) mean that the product is a chlorobiphenyl and the last two numbers (54) mean that the product is 54% by weight chlorine.

I have enclosed for your use a chart showing some of the physical and chemical characteristics of these products as well as their acute mammalian toxicity.

You asked about the solubilities of these products in water. The following list shows this property for some of the liquid Aroclor products.

Aroclor 1242 - 203 ± 10 ppb
Aroclor 1248 - 106 ± 14 ppb
Aroclor 1254 - 50 ± 2 ppb

As you would expect, these data indicate that solubility in water is an inverse function of the percent of chlorination.

DSW 018512

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We are at present studying the analytical methods used. Our research people are probably as experienced as anyone in the world in this area since we manufacture these products. I have asked Dr. E. Scott Tucker to contact you in connection with analytical problems that he has encountered in the gas-chromatographic-electron-capture technique used in this analysis.

We will keep you informed about developments in connection with these products.

Sincerely,

Jack T. Garrett
Manager, Industrial Hygiene

JTG:ju

Enclosures

b.c. W. C. Robinson
H. S. Bergen

DSW 018513

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RESIDUE ANALYSIS

FOUR DAY FISH TOXICITY STUDIES ON AROCLOR 1254

Test Material	Conc.(PPM) Added to Water	Hours	Conc.(PPM) Found in Water	No. Fish Dead	No. Fish Analyzed	Wt. Fish Analyzed(g)	Conc.(PPM) Found in Water
Aroclor 1254 (T)	100	24	7.19 (1254)	0	-	-	-
Aroclor 1254 (T)	100	24	2.98 (1254)	0	-	-	-
Aroclor 1254 (T)	100	48	1.82 (1254)	0	-	-	-
Aroclor 1254 (T)	100	72	1.69 (1254)	0	-	-	-
Aroclor 1254 (T)	100	96	1.07 (1254)	0	10	17.02	<96.2(1254)

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TEST MATERIAL: AROCLOR 1242, 1260, 1254

FOUR-DAY FISH TOXICITY STUDY--RAINBOW TROUT

Mortality, DO, and pH Data

Test Material	Concentration* (ppm)	Number Dead Hours: 1-6	24	48	72	96	Total Number Dead	Number Tested	Per-Cent Dead	Dissolved Oxygen (ppm) and pH 1-6Hr. DO	pH	24Hr. DO	pH	48Hr. DO	pH	72Hr. DO	pH	96Hr. DO	pH
Aroclor 1242	100.0	0	0	0	0	0	0	10	0	-	-	-	-	-	-	-	-	-	-
Aroclor 1254	100.0	0	0	0	0	0	0	10	0	-	-	-	-	-	-	-	-	-	-
Aroclor 1260	100.0	0	0	0	0	0	0	10	0	-	-	-	-	-	-	-	-	-	-

Four-Day LC_{50}

Aroclor 1242 >100.0 ppm

Aroclor 1254 >100.0 ppm

Aroclor 1260 >100.0 ppm

*The test materials were dispensed into the bioassay vessels in the form of a 10.0 percent (w/v) solution in acetone. Concentrations are expressed in terms of actual test material as received.

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