FILE

YOUNGER LABORATORIES

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Certificate of Analysis

June 13th, 1962

SUBJECT -

Toxicological Investigation Of: Aroclor 1221
Monsanto Sample Number 43
Monsanto Project Number Y-62-41

STUDY CONDUCTED FOR -

Monsanto Chemical Company, St. Louis, Missouri

EXPERIMENTAL PROCEDURE -

A) Oral LD_{50} (Rats)

The undiluted compound was fed by stomach tube to Sprague-Dawley strain albino rats.

After the approximate Minimum Lethal Dose was determined, groups of male and female rats were fed in increasing doses at increments of 0.1 fractional log intervals at four levels designed to blanket the toxicity range thereby supplying data for calculation of the LD_{50} which was done according to a modification of the method of E. J. de Beer.

Observations were made for toxic symptoms and the viscera of the animals that succumbed were examined macroscopically.

The data are shown in Table I.

B) Skin Absorption MLD (Rabbits)

The undiluted compound was applied in increasing doses at increments of 0.2 fractional log intervals to the closely clipped, intact skin of New Zealand white female rabbits.

The treated areas were covered with plastic strips and the animals placed in wooden stocks for periods up to twenty-four hours, after which time they were assigned to individual cages.

Observations were made for toxic symptoms and the viscera of the animals that succumbed were examined macroscopically.

The data are shown in Table II.

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To: Monsanto Chemical Company
St. Louis, Missouri
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SUMMARY -

Aroclor 1221

A) Oral LD_{50} (Rats)

The Oral LD_{50} for male and female rats was placed at 3980 milligrams per kilogram with lower and upper limits of 3300 to 4775 milligrams per kilogram.

The compound was classed as slightly toxic by oral ingestion in male and female rats.

B) Skin Absorption MLD (Rabbits)

The Minimum Lethal Dose by Skin Absorption in female rabbits was found to be greater than 2000 milligrams per kilogram and less than 3160 milligrams per kilogram.

The compound was classed as slightly toxic by skin absorption in female rabbits.

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BY: FRED H. YOUNGER

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TABLE I

THE ORAL LD_{50} OF 'Aroclor 1221' FOR RATS

Sample Fed Undiluted

Animal No. - Sex	Weight Gm.	Dose Mg./Kg.	Fate
1- Female	215	3160	Survived
2- Female	230	3160	Survived
3- Female	220	3160	Survived
4- Male	245	3160	Died
5- Male	235	3160	Survived
6- Male	250	3980	Survived
7- Female	210	3980	Survived
8- Female	200	3980	Died
9- Female	210	3980	Survived
10- Male	225	3980	Died
11- Male	240	5010	Died
12- Male	235	5010	Survived
13- Female	215	5010	Died
14- Female	205	5010	Died
15- Female	220	5010	Died
16- Male	240	6310	Died
17- Male	250	6310	Died
18- Male	225	6310	Died
19- Female	215	6310	Died
20- Male	230	6310	Died

DISCUSSION -

The Oral LD_{50} for male and female rats was placed at 3980 milligrams per kilogram with lower and upper limits of 3300 to 4775 milligrams per kilogram.

The compound was classed as slightly toxic by oral ingestion in male and female rats.

Survival time was several hours to three days with most deaths occurring in two days.

Toxic symptoms included loss of appetite, diarrhea, increasing weakness, and collapse.

At autopsy there was liver discoloration and inflammation of the gastrointestinal tract.

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TABLE II

THE MINIMUM LETHAL DOSE OF 'Aroclor 1221'
BY SKIN ABSORPTION IN RABBITS

Animal No. - Sex	Weight Kg.	Dose Mg./Kg.	Weight Change 5 Days Later Kg.	Fate
1 - Female	2.1	794	+ 0.1	Survived
2 - Female	2.4	1260	+ 0.1	Survived
3 - Female	2.5	2000	- 0.1	Survived
4 - Female	2.3	2000	- 0.2	Survived
5 - Female	2.2	3160	- 0.4	Died -- 7 Days
6 - Female	2.4	5010	- 0.5	Died -- 5 Days

DISCUSSION -

The Minimum Lethal Dose by Skin Absorption in female rabbits was found to be greater than 2000 milligrams per kilogram and less than 3160 milligrams per kilogram.

The compound was classed as slightly toxic by skin absorption in female rabbits.

Survival time was five to seven days.

Toxic symptoms included poor appetite and increasing weakness in animals #5 and #6. Moderate muscular impairment developed after three to four days in these same animals.

At autopsy there was liver discoloration and pulmonary hyperemia macroscopically.

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