YOUNGER LABORATORIES
*Biochemists . . . Pharmacologists . . . Analysts*

3620 TELEGRAPH ROAD
ST. LOUIS 29, MISSOURI
PHONE: TILDEN 6-2540

# *Certificate of Analysis*

June 6th, 1962

UBJECT -

Toxicological Investigation Of: Proclor 1232
Monsanto Sample Number 54
Monsanto Project Number Y-62-52

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 $LD_{50}$ (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.

COPY

0562975

This confidential report is not to be used in any form of advertising without written permission

TOXSTUDIES0475

SUMMARY -

Aroclor 1232

A) Oral $LD_{50}$ (Rats)

The Oral $LD_{50}$ for male and female rats was placed at 4470 milligrams per kilogram with lower and upper limits of 3490 to 5720 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 1260 milligrams per kilogram and less than 2000 milligrams per kilogram.

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

YOUNGER LABORATORIES

Fred M. Younger

BY: FRED M. YOUNGER

The material in this report is to be used in development of the product and may be given to responsible sales contacts, but it is not to be used by them in advertising copy. The source of this material is not to be divulged until it appears in formal publications. No exceptions to the established rule may be made without the approval of the Medical Department in St. Louis. Customers' inquiries regarding matters of toxicity are to be referred as before to the Medical Department in St. Louis for reply.

— Monsanto Chemical Company

0562976

TOXSTUDIES0476

## TABLE I

### THE ORAL $LD_{50}$ OF 'Aroclor 1232' FOR RATS

Sample Fed Undiluted

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

DISCUSSION -

The Oral $L_{50}$ for male and female rats was placed at 4470 milligrams per kilogram with lower and upper limits of 3490 to 5720 milligrams per kilogram.

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

Survival time was less than twenty-four hours to four days with most deaths occurring in two days.

Toxic symptoms included sharply reduced appetite, lethargy, diarrhea, and increasing weakness.

At autopsy there was renal and liver congestion as well as inflammation of the gastric mucosa.

0562977

TOXSTUDIES0477

## TABLE II

### THE MINIMUM LETHAL DOSE OF 'Arcolor 1232' BY SKIN ABSORPTION IN RABBITS

Sample Applied Undiluted

| 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 | 2.1 | 1260 | 0.0 | Survived |
| 3 - Female | 2.4 | 2000 | - 0.3 | Died -- 7 Days |
| 4 - Female | 2.2 | 2000 | - 0.4 | Died -- 9 Days |
| 5 - Female | 2.5 | 3160 | - 0.5 | Died -- 5 Days |
| 6 - Female | 2.7 | 5070 | ----- | Died -- 4 Days |

DISCUSSION -

The Minimum Lethal Dose by Skin Absorption in female rabbits was found to be greater than 1260 milligrams per kilogram and less than 2000 milligrams per kilogram.

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

Survival time was four to nine days.

Toxic symptoms included reduced appetite, gradual wasting, lethargy, and weakness after several days to the point of collapse.

At autopsy there was liver discoloration and pulmonary hyperemia macroscopically.



TOXSTUDIES0478