PROJECT NO: Y-66-161
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YOUNGER LABORATORIES

Biochemists . . . Pharmacologists . . . Analysts

128 CLIFF CAVE ROAD
SAINT LOUIS, MO., 63129

PHONE: TILDEN 6-2540

Certificate of Analysis

November 9th, 1966

SUBJECT -

Toxicological Investigation Of: PYDRAUL 280

Monsanto Sample Number 186

Monsanto Project Number Y-66-161

STUDY CONDUCTED FOR -

Monsanto Company, St. Louis, Missouri

EXPERIMENTAL PROCEDURE -

A) Oral LD_{50} (Rats, Mixed Sex)

The undiluted compound was fed by stomach tube to Sprague-Dawley strain albino male and female 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, Mixed Sex)

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 male and 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 Company
St. Louis, Missouri
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SUMMARY -

PYDRAUL 280

A) Oral LD_{50} (Rats, Mixed Sex)

The Oral LD_{50} for male and female rats was placed at 8,440 milligrams per kilogram with lower and upper limits of 6835 to 10,380 milligrams per kilogram.

The compound was classed as practically non-toxic by oral ingestion in male and female rats.

B) Skin Absorption MLD (Rabbits, Mixed Sex)

The Minimum Lethal Dose by Skin Absorption in male and 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 male and female rabbits.

YOUNGER LABORATORIES

BY: FRED M. YOUNGER

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TABLE I

THE ORAL LD_{50} OF 'PYDRAUL 280' FOR RATS

Sample Fed Undiluted

Animal No. - Sex	Weight Gm.	Dose Mg./Kg.	Fate
1- Female	220	6,310	Survived
2- Male	255	6,310	Survived
3- Female	230	6,310	Survived
4- Male	240	6,310	Survived
5- Female	215	6,310	Died
6- Male	260	7,940	Survived
7- Female	225	7,940	Died
8- Male	250	7,940	Survived
9- Female	220	7,940	Died
10- Male	270	7,940	Survived
11- Female	225	10,000	Survived
12- Male	265	10,000	Died
13- Female	230	10,000	Died
14- Male	250	10,000	Survived
15- Female	225	10,000	Survived
16- Male	260	12,600	Died
17- Female	215	12,600	Died
18- Male	255	12,600	Died
19- Female	210	12,600	Died
20- Male	240	12,600	Died

DISCUSSION -

The Oral LD_{50} for male and female rats was placed at 8,440 milligrams per kilogram with lower and upper limits of 6,835 to 10,380 milligrams per kilogram.

The compound was classed as practically non-toxic by oral ingestion in male and female rats.

Survival time was several hours to four days.

Toxic symptoms included tremors after two to three hours, lethargy, loss of appetite, and collapse.

At autopsy there was inflammation of the gastric mucosa as well as liver hyperemia.

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T A B L E II

THE MINIMUM LETHAL DOSE OF 'PYDRAUL 280'
BY SKIN ABSORPTION IN RABBITS

Sample Applied Undiluted

Animal No. - Sex	Weight Kg.	Dose Mg./Kg.	Weight Change 5 Days Later Kg.	Fate
1 - Male	2.6	794	0.0	Survived
2 - Female	2.3	1260	- 0.2	Survived
3 - Male	2.7	2000	- 0.2	Survived
4 - Female	2.5	3160	- 0.4	Died - 10 Days
5 - Male	2.7	5010	- 0.3	Died -- 7 Days
6 - Female	2.3	7940	- 0.3	Died -- 7 Days

DISCUSSION -

The Minimum Lethal Dose by Skin Absorption in male and 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 male and female rabbits.

Survival time was seven to ten days.

Toxic symptoms included weakness and inactivity after two to three days followed by tremors and collapse.

At autopsy there was liver dehydration and discoloration as well as pulmonary congestion.

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