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DATA EVALUATION REPORT

STUDY TYPE: Acute Oral Toxicity Study-Rats

MRID NO.: 116479 TOX. CHEM. No.: 320

TEST MATERIAL: 2,4-DP Acid (purity not specified)

SPONSOR: Amchem Products, Ambler, PA

TESTING FACILITY: Pharmakon Laboratories, Scranton, PA

CITATION: Matthews, R.; Jacob, R.; Varner, L. et al. (1977) Acute Oral LD_{50} (Rats): 2,4-DP Acid. Final rept. (Unpublished study received Mar 26, 1979, under 264-231; prepared by Pharmakon Laboratories, submitted by Union Carbide Agricultural Products Co., Inc., Research Triangle Park, NC; CDL:237875-E)

METHODS and MATERIALS: Groups of Sprague Dawley rats (5/sex/dose) were fasted for 24 hrs.; they were orally adminitered a single dose of 2,4-DP acid at dosage levels of 200, 400, 600, 800, and 1,000 mg/kg. The treated rats were observed daily for 14 days. At day 14, the surviving rats were sacrificed, and gross necropsy was performed on each animal.

RESULTS:

1). After 2 hours of dosing, the treated animals showed signs of decreased motor activity. Animal which received doses of 400 mg/kg or higher also exhibited hypersensitivity, abnormal gait, and decreased grip strength. Piloerection was observed in females at 400 mg/kg and higher. Labored respiration was also observed in some animals.

2). During gross examination, gastrointestinal irritation, discoloration of and fluid and gaseous distention of the intestines were found in the animals which died before termination of the study.

3). The mortality rates of the treated animals are presented in Table 1.

4). According to the report, the acute oral LD_{50} was 620 mg/kg which was accepted by the former reviewer; however, the data indicated that females were more sensitive than males (Table 1).

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Table 1. Mortality of 2.4-DP Treated Rats*

Dose(mg/kg)	200	400	600	800	1 000
Death Rates					
Males	0/5	1/5	1/5	5/5	5/5
Females	0/5	2/5	3/5	5/5	5/5

* The data presented in this table are tabulated from the individual animal data (MRID: 116479) by this reviewer.

DISCUSSION AND CONCLUSION: This study had been reviewed previously (Holder: Tox. Doc. No. 001995). and it was classified as Core Guideline. However. this reviewer does not not agree with the conclusions and classification of the previous reviewer for the following reasons:

1). The report did not clearly indicate how the test animals were dosed (i.e. by gavage or by some other means).

3). The observations of the toxic effects should be reported as no. of observations/sex/dose.

4). The death rate should also be reported as no. of death/sex/dose.

5). The purity and stability of the test agent should be tested and reported.

Based upon the reported data. the oral LD_{50} for males is estimated to be approximately 700 mg/kg; females, 500 mg/kg. The acute oral toxicity of 2.4-DP is classified as category III for rats.

Although the study has many minor deficiencies, it has provided information for establishing the value of LD_{50} and toxicity category. The study is, thus, classified as Core Minimum.