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OFFICE OF
PESTICIDES AND TOXIC SUBSTANCES

MAR 31 1987

MEMORANDUM:

TO: A. E. Castillo, PM # 17
Insecticide/Rodenticide Branch
Registration Division TS-767C

THRU: R. Bruce Jaeger, Section Head
Rev. Sec. # 1/Toxicology Branch
Hazard Evaluation Division TS-769C

FROM: D. Ritter, Toxicologist
Rev. Sec. # 1/Toxicology Branch
Hazard Evaluation Division TS-769C

Subject:

EPA # 37001-9; Diflubenzuron VC 90 (Dimilin). Review of data submitted in response to Registration Standard requirements.

Caswell #: 346A

The submitted Rat Acute Inhalation study has been reviewed and the DER is attached. The study is rated CORE Guideline and fulfills 40 CFR 158.135 requirements for an acute inhalation study (81-3) for the insecticide, Diflubenzuron.

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Reviewed by: D. Ritter, Toxicologist DR 3-31-87
Section I , Tox. Branch (TS-769C)
Secondary reviewer: R. Bruce Jaeger
Section I , Tox. Branch (TS-769C)

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DATA EVALUATION REPORT

STUDY TYPE: Acute Inhalation LC_{50}, Rat. TOX. CHEM. NO. 346A

ACCESSION NUMBER: 264851 MRID NO.: NA

TEST MATERIAL: Diflubenzuron VC 90;

SYNONYMS: Dimilin.

STUDY NUMBER(S): 56645/41/86

SPONSOR: Duphar BV, Dept. of Toxicology, Weesp, Holland.

TESTING FACILITY: Inveresk Research International, Musselburgh Scotland.

TITLE OF REPORT: Diflubenzuron VC 90 Acute Inhalation Toxicity Study in Rats (Limit Test).

AUTHOR(S): Greenough, R.J. and P. McDonald.

REPORT ISSUED: May, 1986.

CONCLUSIONS: The Acute Inhalation LC_{50} is > 2.49 mg/L air/4hrs.

Classification: CORE - Guideline. TOX Category III.

Special Review Criteria (40 CFR 154.7) None.

A. MATERIALS:

1. Test compound: Diflubenzuron VC 90. Description: White Powder. Batch #: UN 86 CO 68. Purity: 90%.

2. Test animals: Species: Rat, Strain: Spraque-Dawley. Weight: 120 150 gm. Source: Charles River UK Limited.

B. STUDY DESIGN:

1. Animal assignment

Animals were assigned 5 M & 5 F to the following test groups:

Control and Treatment.

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2. Compound Administration:

The air was supplied from dual compressors and was filtered, conditioned and rendered oil free. The test material was metered into the airstream by a Wright feeder into an exposure chamber having a volume of 41.5 liters. Rats in the exposure group (5 males and 5 females) were arranged in a single level with only the nose being exposed to test material. A control group of 5 males and 5 females was similarly exposed to air only. Duration of exposure was four hours.

Aerial concentration of test material was measured gravimetrically at regular intervals. Particle size and mass mean diameter (MMD) was measured twice during the exposure period using an Andersen Mini sampler.

3. Animals were weighed initially, and on days 2, 3, 4, 7, 10 and 14.

4. Animals received feed and water ad libitum, except during dosing.

5. Animals were inspected hourly for signs of toxicity and mortality during the exposure period and for the first hour after dosing, then daily thereafter.

6. Necropsy and Pathology

All animals that died or that were sacrificed on schedule were given a gross post-mortem examination. The respiratory tree was subjected to detailed gross examination.

C. RESULTS:

The mean aerial concentration of test material was determined to be 2.49 mg/L air (2.24 mg/L calculated as AI). The average percent of respirable particles (<4.7 microns) was 87.4 % by weight and the MMD was 2.30 microns.

No animals died, and no adverse reactions were reported for the test period. No abnormalities were reported for body weights or gross pathological examination.

D. CONCLUSIONS:

Rats survived exposure to aerial concentrations of Diflubenzuron VC 90 of 2.49 mg/L air, 87.4 % of which was in the form of respirable particles, without apparent adverse effects.

The Acute Inhalation LC_{50} in this study is therefore > 2.49 mg/L air.

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