UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

006535

DEC 22 1987

MEMORANDUM:

OFFICE OF
PESTICIDES AND TOXIC SUBSTANCES

TO: Portia Jenkins, PM # 12
Insecticide/Rodenticide Branch
Registration Division TS-767C

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

THRU: Dr. T. M. Farber, Chief
Toxicology Branch
Hazard Evaluation Division TS-769C

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

Subject: EPA # 10163-80; Response to Data Call In, Azinphos-M 2EC.

Caswell #: 374
TOX Project #: 7-1062
Registrant: Gowan Co., Yuma, AR.

The Registrant is responding to a DCI for products containing Azinphos-Methyl (Guthion) data 3/4/86. The studies have been reviewed and are acceptable for re-registration. They Are:

1. Rabbit Skin Irritiation (# 4490-86) PII = 4.3/8.0. TOX Cat. III, Moderate Dermal Irritant.

2. Rabbit Eye Irritiation (#4489-86); PII = 40.8/110 at 48 hours in unwashed eyes; 33.3/110 at 24 hours in washed eyes. TOX Cat. I, based on persistent corneal lesions beyond day 21. Severe eye irritant.

3. Rat Acute Inhalation (# 4491-86); Combined LC50 (both sexes) = 0.9 mg/L. TOX Cat. II.

DER 12-22-87

006535

Reviewer: D. Ritter, Toxicologist Caswell #: 374
Rev. Sec. # I
Secondary Reviewer: R. Bruce Jaeger, Section Head
Rev. Sec. # I

DATA EVALUATION RECORD

Study: Dermal Irritation, Rabbit EPA Guideline #: 81-5

Laboratory: Stillmeadow, Inc., Houston, TX EPA Reg. #: 10163-80

Study Number: 4490-86

Study Director: J. L. Maedgen

Date of Study: 12/29/86

Accession #/MRID #: 402470-01

Material Tested: Gowan Azinphos-M 2EC

Animals: New Zealand White rabbits, 3 per sex.

METHODS:

Test animals were equilibrated for one week prior to test. A patch of skin, approximately 8 sq. cm.x, located on the dorsal trunk, was clipped free of hair. The skin was not abraded. 0.5 ml undiluted test material was applied and secured under a 2.54 sq. cm gauze pledgelet which was then secured with non-irritating tape. Four hours later the dressings were removed and the site cleansed. The test sites were examined for erythema and edema, irritation or other dermal defects.

The lesions were scored after the method of Draize at 1, 24, 48 and 72 hours, and on days 7, 9, 13 and 17 after exposure.

RESULTS:

Slight to moderate erythema and edema was reported in all animals through day 7. These effects were replaced by skin sloughing on days 7 through 13. One rabbit showed a sligh transient fissuring on day 7. All lesions had healed by day 17.

The author calculated that the maximum irritation score was 4.3/8.0 which occured at the 72 hour examination period. The author classified this product as Moderate dermal irritant.

CONCLUSIONS:

The PII was calculated to be 4.3/8.0. The product is a moderate dermal irritant.

TOXICITY CATEGORY: III CORE RATING: Guideline.

Primary Reviewer: D. Ritter, Toxicologist DR 12-22-87 Caswell #: 374
Rev. Sec. # I
Secondary Reviewer : R. Bruce Jaeger, Section Head 12/24/87
Rev. Sec. # I

006535

DATA EVALUATION RECORD

Study: Rabbit Eye Irritation EPA Guideline # 81-4

Study Number: 4489-86

Laboratory: Stillmeadow, Inc., Houston, TX. EPA Reg. #: 10163-80

Study Director: J. L. Maedgen

Date of Study: 12/12/86

Accession #/MRID #: 402470-03

Material Tested: Gowan Azinphos M-2ED

Animals: New Zealand White Albino Rabbits

METHODS:

Nine rabbits (3 males and 3 females for nonwashed treatment; 3 males for washed treatment) with undamaged eyes were exposed to 0.1 ml of undiluted test material in the conjunctival sac of each left eye. The eye was closed for one second and the animals released. Three animals' eyes were washed with deionized water for one minute after a thirty second exposure period.

Treated eyes were examined at 1, 24, 48 and 72 hours, and on days 4, 7, 10, 17 and 21 following treatment. Lesions were scored after the method of Draize. All animals were examined at the 24 hour period with 0.2% fluorescien sodium. Animals with positive staining was re-examined at each succeeding period until the stain disappeared.

Animals were given free access to feed and water.

RESULTS:

Positive staining occurred in all animals examined at 24 hours. The staining recurred through day 4 to 7 in all unwashed eyes. In the three animals whose eyes were washed, staining recurred until day 4, 10 and 3, respectively.

A slight degree of corneal vascularization was noted in all treated eyes.

There was moderate to severe (grade 2) iridal involvement in all treated eyes which cleared by day 7. A moderate to severe redness, chemosis and discharge was reported in all conjunctivae but there was no ulceration or necrosis.

The maximum Draize score was calculated to be 40.8/110 at 48 hours in the unwashed group; it was 33.3/110 in the washed group at 24 hours.

One washed and one unwashed eye showed corneal opacity and/or corneal vascularization that persisted beyond day 21.

CONCLUSIONS:

Gowan Azinphos-M produces severe eye irritation that persists beyond 21 days and is rated as a severe eye irritant based on persistent corneal opacity and vascularization.

TOXICITY CATEGORY:

This product is rated TOX Category I based on persistence of corneal lesions beyond day 21.

CORE RATING: Guideline.

DEB 12-22-87

Primary Reviewer: D. Ritter, Toxicologist Caswell #: 374006535
Rev. Sec. # I
Secondary Reviewer: R. Bruce Jaeger, Section Head 12/24/87
Rev. Sec. # I

DATA EVALUATION RECORD

Study: Acute Inhalation, Rat EPA Guideline #: 81-3

Laboratory: Stillmeadow, Inc., Houston, TX. EPA Reg. #: 10163-80

Study Director: J. L. Maedgen

Study Number: 4491-86

Date of Study: 2/25/87

Accession #: 402470-02

Material Tested: Gowan Azinphos-M 2EC

Animals: Young adult Sprague-Dawley rats, 5 per sex per group.

METHODS:

Animals -

Test groups were exposed to aerosol dilutions of test material in a 200 Liter dynamic flow exposure chamber. The duration of exposure was four hours, except for the two nighest groups which recieved exposure for only two hours because the rats died prior to termination of the exposure period.

Animals were observed for toxic effects and mortality frequently on the day of exposure and once daily thereafter for fourteen days.

Animals were given ad libitum access to feed and water during the observation period.

All animals dying during the observation period or which were killed at termination were subject to gross necropsy.

Compound Administration -

Dried and filtered air under pressure was used to generate the aerosols. Air flow, temperature and humidity were recorded at 30 minute intervals during the exposure period. The concentration of test material was measured hourly and at the end of the exposure period. The nominal concentration was determined by weigh loss of test material by the total air volume used. Particle size was determined using an Andersen cascade impactor. The doses employed were: 0.708, 0.786, 0.889, 0.957, 1.75, 2.42 and 5.09 mg/L air.

The LC50s were calculated using the method of Litchfield & Wilcoxon, JPET 96:99-115, 1949.

RESULTS:

Cageside observations of toxicity included lacrimation, lethargy, ataxia, tremors, nasal discharge, piloerection, polyuria, ptosis, rales, salivation and swollen neck.

Signs of toxicity at necropsy included lacrimation, nasal discharge, polyuria, salivation, swollen neck, distended stomach, mottled lungs and swollen lungs.

All animals on the lowest dose gained weight, while animals in the ne higher dose either gained or jst maintained their weight. Animals in the remaining groups lost weight.

Doses used and their associated mortality were reported as follows:

DOSE MG/L	RATIO OF DEAD/TREATED Males	Females	Combined
0.708	0/5	0/5	0/10
0.786	0/5	1/5	1/10
0.889	0/5	5/5	5/10
0.957	2/5	5/5	10/10
1.75	5/5	5/5	10/10
2.42	5/5	5/5	10/10
5.09	5/5	5/5	10/10

CONCLUSIONS:

The calculated LC50 for males = 0.97 mg/L (0.93 to 1.00 mg/L)*.

The calculated LC50 for females = 0.81 mg/L (0.78 to 0.84 mg/L).

The combined LC50 for both sexes = 0.90 mg/L (0.82 to 0.98 mg/L).

* 95 % Confidence Limits

TOXICITY CATEGORY: II

CORE RATING: Guideline.