

Memorandum

Date: 20 October 1982

Subject: EPA File Symbol: 3125-GUE OFTANOL 2 FLOWABLE INSECTICIDE  
Caswell # 447AB

From: B. T. Backus  
IRB/TSS

To: Mr. William Miller  
Product Manager 16

Applicant: Mobay Chemical Corp.  
Agricultural Chemicals Division  
P.O. Box 4913  
Kansas City, MO 64120

Active Ingredient:

1-Methylethyl 2-[[ethoxy[(1-methylethyl)amino]phosphino-  
thioyl]oxy]benzoate.....22%

Inert Ingredients:.....78%

Background:

Product is proposed "For Commercial Applicator Use Only" on commercial and residential turf including "golf courses, cemeteries, sod farms, industrial grounds, parkways, residential lawns, and similar areas."

Comments and Recommendations:

1. The acute oral LD50, acute dermal LD50, acute inhalation LC50, and primary eye and dermal irritation studies received August 27, 1982 adequately define the potential hazards of this product by these exposure routes.
2. The beagle exposure study is equivocal. While the ratio of plasma cholinesterase activity of the exposed subjects to that of the controls was not significant at any time at the 0.05 level using the student T-test, it was, for the males, significant at the 0.10 level for days 7, 8 and 10. For females, the ratio on day 7 was significant at about the 0.12 level.
3. IRB/TSS would have no objection, on the basis of hazard to humans and domestic animals, to the conditional registration of this product for the proposed uses with the labeling revisions as indicated below.

Labeling:

1. Given that this product "is recommended for use only by commercial applicators..." it appears that this product is being proposed for use as a Restricted Use pesticide and should be labeled accordingly.
2. The "General Classification" appearing under "Directions for Use" should be deleted.
3. Since the product is in toxicity category II by the dermal absorption route, the Hazards to Humans and Domestic Animals statement: "May be fatal if swallowed or inhaled" should be expanded to something like: "May be fatal if swallowed, inhaled, or absorbed through skin." The statement: "Harmful if absorbed through the skin" should then be deleted.
4. The statement of practical treatment for eye exposure should be revised to something like: "If in eyes, wash with flowing water for at least 15 minutes. Get medical attention if irritation persists."
5. Because the use pattern indicates the possibility of exposure to children and pets, the label should carry the following: "Keep children and pets off treated areas for 48 hours and until grass has completely dried."
6. The Environmental Hazards statement should be revised to something like:

This pesticide is toxic to fish and wildlife. Birds feeding on treated areas may be killed. Do not apply directly to water. Do not contaminate water by cleaning of equipment or disposal of wastes.

Review:

The following studies were conducted on the product as proposed for registration by the Mobay Chemical Corporation Corporate Toxicology Department, Stanley Research Center, 17745 South Metcalf, Stilwell, KS 66085. Studies were received at EPA 8-27-82, and are in Acc. 248241.

1. Acute Oral LD50 - Rat. Study No. 81-011-06; Toxicology Report No. 205; dated Sept. 9, 1981.

Procedure: Groups of 10M SD-derived rats received oral dosages of 90, 117, 133, 152 or 198 mg/kg; groups of 10F rats received oral dosages of 35, 46, 60, 78, 101 and 132 mg/kg. All rats were observed for 14 days following dosage.

Results: No deaths among males receiving 90 or 117 mg/kg; 3/10 died at 133, 7/10 died at 152, and 10/10 died at 198 mg/kg. No deaths among females receiving 35, 46 or 60 mg/kg. 3/10 died at 78; 7/10 died at 101, and 9/10 died at 132 mg/kg. Deaths occurred within 3 days of dosage.

Symptoms: Typical of ChE inhibition.

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Necropsy of mortalities: congested lungs, gas or fluid-filled gastrointestinal tracts. Post-sacrifice necropsies of survivors showed a lack of body fat.

Oral LD50 (M) = 143 (134-156) mg/kg  
Oral LD50 (F) = 92 (81-105) mg/kg

Study Classification: Core Minimum Data

Product Classification: Tox. Cat. II

2. Acute Dermal LD50 - Rabbit. Study No. 81-023-06; Toxicology Report No. 245; dated March 10, 1982.

Procedure: Groups of 4M NZ white rabbits received 24-hr occluded dermal exposure to 0.656, 0.776, 0.918, 1.286, 1.800, 2.52 or 3.528 g/kg; groups of 4F received similar exposure to 0.651, 0.911, 1.276 or 1.786 g/kg, with subsequent 14-day observation.

Results: Dermal LD50 (M) = 1.172 (0.738-1.713) g/kg  
Dermal LD50 (F) = 1.166 (0.827-1.776) g/kg

Symptoms: typical of ChE inhibition, with an additional minor local irritant effect.

Study Classification: Core Minimum Data

Product Classification: Tox. Cat. II

3. Acute Inhalation LC50 - Rat. Study No. 81-041-08; Toxicology Report No. 230; dated March 2, 1982; revised June 7, 1982.

Procedure: Groups of 10F rats were exposed (heads only) to analytically-determined concentrations (nominal concentration in parenthesis) of 241 (1008), 206 (1507), 364 (2015), 317 (2530), 428 (3050), 420 (3497) and 597 (4059) mg/m<sup>3</sup> for periods of one hour. A group of 10M, 10F received heads-only one hour exposure to 344 (5051) mg/m<sup>3</sup>. MMD ranged from 3.3 to 6.2  $\mu$ m during these exposures. Subjects were observed for 14 days following exposure.

<u>Results:</u> Exposure Level		Mortalities	
mg/m <sup>3</sup> -analytical	Nominal conc. mg/m <sup>3</sup>	M	F
241	1008	-	0/10
206	1507	-	6/10
364	2015	-	5/10
317	2530	-	7/10
428	3050	-	9/10
420	3497	-	9/10
597	4059	-	10/10
344	5051	0/10	9/10

LC50 (M) = above 344 mg/m<sup>3</sup> (0.344 mg/L) for 1-hr exposure

LC50 (F) = 329 (289-364) mg/m<sup>3</sup> (0.329 mg/L) for 1-hr exposure

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Symptoms: Muscle fasciculations, tremors, ataxia, decreased activity, nasal discharge, runny eyes, lacrimation. Some controls also had runny eyes and nasal discharge. Exposed animals showed significantly lower weight gains than controls. Necropsy of animals which died showed evidence of lacrimation, salivation, congested lungs. Post-sacrifice necropsies of survivors: unremarkable.

Study Classification: Core Minimum Data (1-hr exposure; no exact determination of LC50 for males).

Product Classification: Tox. Cat. II

4. Primary Eye Irritation - Rabbit. Study No. 81-133-10; Toxicology Report No. 192, dated July 17, 1981.

Procedure: 0.1 ml was instilled in the conjunctival sac of one eye of each of 9 rabbits. Three eyes were flushed 45 seconds later; remaining 6 eyes were unwashed.

Results: No corneal involvement. 6/6 unwashed, 3/3 washed eyes showed some conjunctival irritation. All eyes were clear by 7 days.

Study Classification: Core Guidelines Data

Product Classification: Tox. Cat. III

5. Primary Dermal Irritation - Rabbit. Study No. 81-133-10; Toxicology Report No. 192; dated July 17, 1981.

Procedure: 0.5 ml was applied to each of 4 test sites (2 intact, 2 abraded) on each of 6 rabbits, with 24-hr occluded dermal exposure.

Results: PDIS = 0.69.

Study Classification: Core Guidelines Data

Product Classification: Tox. Cat. IV

6. Cholinesterase - 14 day field exposure - Dog (Beagle). Study No. 81-904-01; Toxicology Report No. 279; dated June 9, 1982.

Procedure: 2 groups of 3M, 3F beagles were penned individually either on turf that had been treated (rate of 2 lbs/active per acre) on days 0 and 7 or on untreated turf. Exposed dogs were removed while application was made on day 7. Blood samples were taken from all dogs 6, 4 and 1 days pre-treatment, and on days 0, 1, 3, 7, 8, 10 and 14 for RBC and plasma ChE activities.

Results: Plasma activity in exposed dogs was reduced in comparison with that of controls, particularly for males in the readings from day 7 through 14, although this reduction was not significant at the 0.05 level. However, it was significant at the 0.10 level for days 7, 8 and 10 for the males. For females, it was significant at the 0.12 level on day 7. RBC ChE activities

did not appear to be affected.

Study Classification: Core Supplementary Data (study gives no idea as to the safety factor, if any).

Byron T. Backus 10/12/82

Byron T. Backus  
IRB/TSS

LD

Base Pre-Reg. (4624)

U.S. LABEL

Reason to Issue: To propose registration of new product on turf;  
8/18/82 Draft: To revise based on internal review.

Date of Draft: 8/18/82 (Pre-Reg.) (S)  
Supersedes Pre-Reg. Draft Dated: 7/14/82

EPA Reg. No. 3125-

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®

OFTANOL

2 Flowable

Insecticide

FOR COMMERCIAL APPLICATOR USE ONLY

FOR CONTROL OF TURF  
INSECTS ON TURF GRASSES

Contains 2 lbs. 1-Methylethyl  
2-[[ethoxy[(1-methylethyl)amino]phosphinothioyl]oxy]benzoate  
per gallon.

ACTIVE INGREDIENT:

1-Methylethyl 2-[[ethoxy[(1-methylethyl)amino]phosphinothioyl]oxy]benzoate*	22%
INERT INGREDIENTS	78%
	100%

\*U.S. Patent No. 3,621,082  
Canadian Patent No. 825,198

EPA Reg. No. 3125-  
EPA Est. 3125-MO-1

STOP - READ THE LABEL BEFORE USE

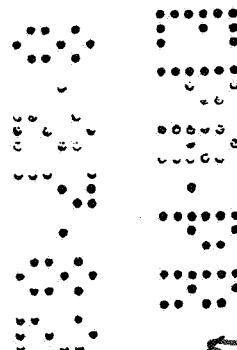
KEEP OUT OF REACH OF CHILDREN

WARNING

See Side Panel for Statements of Practical Treatment  
and Other Precautionary Statements

Net Contents \_\_\_\_\_ Gallons

MOBAY CHEMICAL CORPORATION  
AGRICULTURAL CHEMICALS DIVISION  
Box 4913, Kansas City, Mo. 64120



## OFTANOL 2 Flowable

### PRECAUTIONARY STATEMENTS

#### HAZARDS TO HUMANS AND DOMESTIC ANIMALS

##### WARNING

May be fatal if swallowed or inhaled. Harmful if absorbed through the skin. Causes eye irritation. Do not get in eyes, or on skin or clothing, or breathe spray mist. Wear protective clothing, natural rubber gloves, and goggles when handling.

Do not contaminate feed or food. Keep out of reach of children. Keep all unprotected persons out of the operating area. Wash hands, arms, and face thoroughly with soap and warm water before eating or smoking. Wash all contaminated clothing with soap and hot water before reuse.

##### STATEMENTS OF PRACTICAL TREATMENT

In case of poisoning, call a physician immediately. Have patient lie down and keep quiet. If swallowed, vomiting should be induced. Administer water freely and induce vomiting by giving one dose (1/2 oz. or 15 ml.) of syrup of ipecac. If vomiting does not occur within 10 to 20 minutes, administer second dose. If syrup of ipecac is not available, induce vomiting by sticking finger down throat. Repeat until vomit fluid is clear. Never give anything by mouth to an unconscious person. Professional medical assistance should be secured immediately. If on skin, remove contaminated clothing and wash skin immediately with soap and warm water. If in eyes, wash with flowing water for at least 15 minutes. If inhaled, remove victim to fresh air. If not breathing give artificial respiration, preferably mouth to mouth.

**SYMPTOMS OF POISONING:** A sense of "tightness" in the chest. Sweating. Contracted pupils. Stomach pains. Vomiting and diarrhea.

##### TO PHYSICIAN:

**ANTIDOTE** - Atropine sulfate or atropine sulfate plus 2-PAM has a slight antidotal effect and should be administered in therapeutic doses. Repeat as necessary to the point of tolerance.

Compound inhibits cholinesterase resulting in stimulation of the central nervous system, the parasympathetic nervous system, and the somatic motor nerves. Do not give morphine. Watch for pulmonary edema, which may develop in serious cases of poisoning even after 12 hours. At first sign of pulmonary edema, the patient should be placed in an oxygen tent and treated symptomatically.

##### ENVIRONMENTAL HAZARDS

This pesticide is toxic to fish and wildlife. Keep out of lakes, streams, and ponds. Do not contaminate water by cleaning of equipment or disposal of wastes.

##### DIRECTIONS FOR USE

##### GENERAL CLASSIFICATION

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

**IMPORTANT:** Read these entire Directions for Use and Conditions of Sale before using OFTANOL 2 Flowable insecticide.

## OFTANOL 2 Flowable

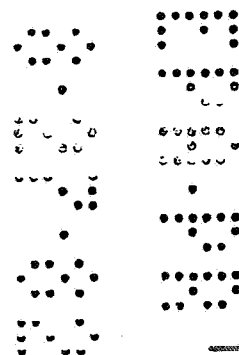
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CONDITIONS OF SALE: THE DIRECTIONS ON THIS LABEL WERE DETERMINED THROUGH RESEARCH TO BE THE DIRECTIONS FOR CORRECT USE OF THIS PRODUCT. THIS PRODUCT HAS BEEN TESTED FOR A RANGE OF WEATHER CONDITIONS SIMILAR TO THOSE WEATHER CONDITIONS THAT ARE ORDINARY AND CUSTOMARY IN THE GEOGRAPHIC AREA WHERE THE PRODUCT IS USED. INSUFFICIENT CONTROL OF PESTS MAY RESULT FROM THE OCCURRENCE OF EXTRAORDINARY OR UNUSUAL WEATHER, OR FROM FAILURE TO FOLLOW LABEL DIRECTIONS. IN ADDITION, FAILURE TO FOLLOW LABEL DIRECTIONS MAY CAUSE INJURY TO THE CROP TO WHICH THE PRODUCT IS APPLIED, OTHER CROPS, ANIMALS, MAN OR THE ENVIRONMENT. MOBAY AND THE SELLER OFFER, AND THE BUYER ACCEPTS AND USES THIS PRODUCT SUBJECT TO THE CONDITIONS THAT EXTRAORDINARY OR UNUSUAL WEATHER, OR FAILURE TO FOLLOW LABEL DIRECTIONS ARE BEYOND THE CONTROL OF MOBAY AND ARE, THEREFORE, THE RESPONSIBILITY OF THE BUYER.

OFTANOL 2 Flowable is recommended for use only by commercial applicators on commercial and residential turf including golf courses, cemeteries, sod farms, industrial grounds, parkways, residential lawns, and similar areas.

### APPLICATION EQUIPMENT

Apply OFTANOL 2 Flowable over the turf area with suitable equipment to provide uniform coverage. Apply OFTANOL 2 Flowable in a coarse, low pressure spray using accurately calibrated equipment to apply the proper amount of spray, and check calibration periodically to ensure that equipment is working properly.





## OFTANOL 2 Flowable

## RECOMMENDED APPLICATIONS

CROP	PEST	DOSAGE OFTANOL 2 F	REMARKS
Turf grasses	White grub larvae (such as Japanese beetle, Black turf grass ataenius, Chafers, <u>Phyllophaga</u> spp., Green June beetle, Oriental beetle, Asiatic garden beetle)	1 gal/A or 3 fl. oz./ 1000 sq. ft.	Be Sure to Read "APPLICATION EQUIPMENT" Section of this label. Apply specified dosage in sufficient volume of water to provide uniform distribution of OFTANOL 2 Flowable.  <u>For White Grub Larvae Control:</u> Water turf area thoroughly within 12 hours of application using 1/2 to 1 inch of water.
	Hyperodes weevil		<u>For Hyperodes Weevil Control:</u> Apply between full bloom periods of forsythia and flowering dogwood, usually April 15 to May 15, and water-in as for white grub larvae.
	Mole crickets		<u>For Mole Cricket Control:</u> Water immediately after application using 1/2 to 1 inch of water.
	Sod webworm larvae Chinch bug Billbugs Flea beetle		<u>For Control of Sod Webworm Larvae, Chinch Bug, Billbug, and Flea Beetle:</u> Apply 1/4 to 1/2 inch of water within 12 hours of treatment.
			Consult your local turf, state Agricultural Experiment Station, or state Extension Service Specialists for more specific information regarding timing of application.

## RESTRICTIONS

Do not graze treated areas or use clippings from treated areas for feed or forage.

PESTICIDE AND CONTAINER DISPOSAL

PESTICIDE: Pesticide, spray mixture, or rinse water that cannot be used according to label instructions must be disposed of according to applicable Federal, state, or local procedures.

CONTAINER: Do not use container in any connection with feed, food, or drinking water. Triple rinse (or equivalent). Dispose of in a sanitary landfill, or by incineration if allowed by state and local authorities.

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