

US EPA ARCHIVE DOCUMENT

114501
SHAUGHNESSEY NO.

~~2~~ (3)
REVIEW NO.

EEB BRANCH REVIEW

DATE: IN _____ OUT 11/24/80

FILE OR REG. NO. 264-6UG

PETITION OR EXP. PERMIT NO. _____

DATE DIV. RECEIVED _____

DATE OF SUBMISSION _____

DATE SUBMISSION ACCEPTED _____

TYPE PRODUCT(S): (I) D, H, F, N, R, S Insecticide

DATA ACCESSION NO(S). _____

PRODUCT MANAGER NO. J. ELLENBERGER, P.M. #12

PRODUCT NAME(S) LARVIN - 500

COMPANY NAME Union Carbide

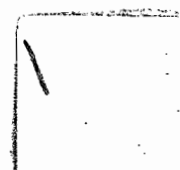
SUBMISSION PURPOSE Full Registration (FIFRA
SEC. 3)

SHAUGHNESSEY NO.
114501

CHEMICAL, & FORMULATION

% A.I.

<u>XXXX</u>	<u>Dimethyl NN' [thiobis [(C-methyl- limino) carbonyl] oxy]] bis) ethanimido thionate)</u>	<u>95%</u>



11/24/80

(2)

November 24, 1980

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Request by Union Carbide for a full Registration for the formulating use of their new Insecticide Product Larvin-(Dimethyl 11,11'-[1,1-dimethylimino] Carbonyl]oxy]] bis-dimethylester-95% a.i-EPA file 264-GUG [Ethiobis

Aquatic Biologist, Review Section 3.
Ecological Effects Branch - HED (TS-769)

J. Ellenberger, Product Manager No. 12
Registration Division - (TS-767)

THRU: David Coppage, Head Section #3
Ecological Effects Branch - HED (TS-769)

THRU: Clayton Bushong, Chief
Ecological Effects Branch - HED (TS-769)

The Ecological Effects Branch (EEB) of HED has reviewed Union Carbide's request for the registration of the formulating use (manufacture use product) of their new insecticide Larvin (thiodicarb) 95% technical (for chemical name see above heading).

The applicant has presented with his registration request the following fish and wildlife toxicity tests relevant to the case at had:

<u>Test Species</u>	<u>Test*</u>	<u>Results</u>	<u>Test Material</u> (UC 51762)
Bobwhite quail	Acute Oral LD50	2023 ppm	99%
" "	Subacute dietary LC50	5620 ppm	"
Mallard duck	" "	5620 ppm	"
Rainbow trout	Acute 96-hour LC50	2.55 ppm	"
Bluegill sunfish	"	1.21 ppm	"
<u>Daphnia magna</u> Strauss	48-hours Acute LC50	0.0053 ppm 0.053 ppm	"

RRS
2/16/83

* All the above tests were rated as being scientifically sound (core)-see attached data validated sheets.

Other fish and Wildlife toxicity tests presented by the applicant were considered to be supplemental and point in the same general direction as those given above. It appears, that methonyl, the major degradate of Larvin is somehow more toxic than Larvin to aquatic organisms.

AYambure:dmf:11/21/80:TS-769:CM-2:Rm807:X70320

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EEB acknowledges receipt of the above data and information but is unable, in the absence of an specific end use, to provide a meaningful risk assessment. Such risk assessment will be provided on a case by case basis when the method(s) of application, application rates, crops to be protected, geographic region(s) affected and other specifics are made available to EEB.

Suffice to say that prima facie we remain concerned about the aquatic toxicological characteristics of Larvin as suggested by the data presented; however, as above mentioned, a case by case risk analysis will be necessary for each use pattern proposed.

Please do not hesitate to call on us if we can be of further assistance. Our telephone number is (703)557-0320.

Attachments: Five data validation sheets.

Alvaro A. Yamhure

cc. EEB File.

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Validation Sheet

Formulation: UC 51762 - Technical Grade 99%

Chemical Name(s): Thiodicarb (Larvin).

Validator: Alvaro A. Yamhure

Date: 12/14/80

Test Type: Avian Acute Oral LD50

Test I.D. #: Initiated 9/5/78 for
Project No. 142-117.

Citation: Beavers, J.B. 1978 (Sept. 5). Wildlife
International Ltd. for Union Carbide Corp.

Validation Category: Core

<u>Result:</u>	<u>Species</u>	<u>Test</u>	<u>(95%) Confidence Limits</u>
	Bobwhite quail	Acute Oral LD50 2023 mg/kg	1489-2740 mg/kg

Validation Category Rationale: Meets all EPA requirements.

Note: This test was previously validated by R.W. Matheny of EEB on 12/12/78 who indicated then that this test could be upgraded to core if the raw data and protocol were presented by the applicant and if the LC50 value remained unchanged. These conditions have been met.

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Validation Sheet

Formulation: UC51762 - Technical grade 99%

Chemical Name: Thiodicarb (Larvin).

Validator: Alvaro A. Yamhure

Date: 12/14/80

Test Type: Avian, 8-day dietary LC50

Test I.D.: Initiated 9/14/78 for project
142-115

Citation: Beaver, J.B. 1978 (Dec. 29);
Wildlife International Ltd. for
Union Carbide Corp.

Category: Core

<u>Result:</u>	<u>Species</u>	<u>Test Type</u>	<u>(95%) Confidence Limits</u>
	Bobwhite quail	8-dietary LC50 - 5620 ppm	N/A

Validation Category Rational: Meets all EPA requirements.

Note: This test was previously validated by R.W. Matheny of EEB on 12/12/78 who indicated then that this test could be upgraded to core if the raw data and the testing protocol were presented by the applicant and if the LC50 value remained unchanged. These conditions have been met.

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Validation Sheet

Formulation: UC 51762 - Technical grade 99%

Chemical Name(s): Thiodicarb (Larvin)

Validator: Alvaro A. Yamhure

Date: 12/14/80

Test Type: Avian, 8-day dietary LC50

Test I.D.: Initiated 9/7/78 for project No. 142-116

Citation: Beavers, J.B. 1978 (Sept. 7); Wildlife International Ltd. for Union Carbide Corp.

Validation Category: Core

Result:	<u>Species</u>	<u>Test Type</u>	<u>(95%) Confidence Limits</u>
	Mallard duck	8-day dietary LC50 5620 ppm	N/A

Validation Category Rational: Meets All EPA requirements.

Note: This tests was previously validated by R.W. Matheny of EEB on 12/12/78 who indicated then that this test could be upgraded to their core if the raw data and the testing protocol were presented by the applicant and if the LC50 value remained unchanged. These conditions have been met.

Validation Sheet

Formulation: UC 51762 - Technical grade 99%

Chemical Name(s): Thiodicarb (Larvin)

Validator: Alvaro A. Yamhure

Date: 12/17/80

Type Test: Aquatic Invertebrate
48-hours LC50

Test ID: Issued 6/16/80 by Union Carbide Corp. -Scientific
investigator Alice M. Brown - Date of testing 12-14
June, 1980 UCES Project No.: 11504-25

Citation: Brown, Alice M., 1980 (6/16/80) Union Carbide Corporation
Environmental Services for Union Carbide (Project 11504-25)

Validation Category: Core

Results:

<u>Species</u>	<u>Test Type</u>	<u>(95%) Confidence Limit</u>
<u>Daphnia magna</u> Strauss	48-hour LC50 0.0053 ppm	0.0044 - 0.0064 ppm

Validation Category Rational: Meets all of EPA requirements.

Validation Sheet

Formulation: UC 51762 - Technical grade 99%

Chemical Name(s): Thiodicarb (Larvin)

Validator: Alvaro A. Yamhure

Date: 11/21/80

Test Type: Fish - Bluegill sunfish
96-hours LC50

Test I.D.: Test Dates 18-22 August, 1979 Union Carbide Corp.
Environmental Services (UCCES) Project No. 11504-25-07-
Jesse Seminara, Scientific Investigator

Citation: Seminara, Jesse 1980 (4/16/80).
UCCES Project No. 11504-25-07.

Validation Category: Core

Results:

<u>Species</u>	<u>Test Type</u>	<u>(95%) Confidence Limits</u>
Bluegill sunfish	96-hour LC50 of 1.21 ppm	(1.03 - 1.41 ppm)

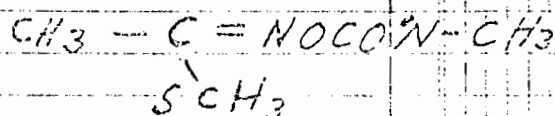
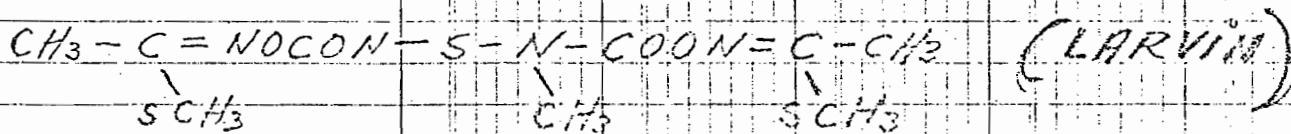
Validation Category Rational: Meets All of EPA's requirements

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COMPARISON OF FISH & WILDLIFE TOXICOLOGICAL DATA
FOR LARVIN AND METHOMYL - ALL TESTS CONDUCTED
1977 AND 1978

TEST ORGANISM	Type of TEST	RESULTS	
		LARVIN	METHOMYL
Bobwhite Quail	96h - LD50	2023 mg/kg	
" "	96h - LC50	75620 ppm	3680 ppm
Mallard Duck	96h - LC50	75620 ppm	2883 ppm
" " *	96h - LD50		15.9 mg/kg
Ring-necked pheasant *	96h - LD50		15.4 mg/kg
" " "	96h - LC50		1975 ppm
Blue gill sunfish	96h - LC50	1.21 ppm	1.88 ppm
" " "			
Rainbow Trout *	96h - LC50	2.55 ppm	73.4 ppm
" " (EPA)	" "		2.4 ppm
Brook trout	96h - LC50	4.45 ppm	—
Coho salmon			
Grass shrimp	96h - TL50	0.056 ppm	0.049 ppm
Pink shrimp	"	—	0.019 ppm
Daphnia sp.	48h - LC50	0.0053 ppm	—
Mud crab	96h - TL50	—	0.41 ppm
Fiddler crab	96h - LC50	2.54 ppm	2.38 ppm

* THESE TESTS WERE RANKED AS "SUPPLEMENTAL".
ALL OTHER ABOVE TESTS WERE RANKED AS "CORE".



(METHOMYL)

Ecological Effects review of thiodicarb

Page _____ is not included in this copy.

Pages 10 through 12 are not included in this copy.

The material not included contains the following type of information:

- Identity of product inert ingredients
 - Identity of product impurities
 - Description of the product manufacturing process
 - Description of product quality control procedures
 - Identity of the source of product ingredients
 - Sales or other commercial/financial information
 - A draft product label
 - The product confidential statement of formula
 - Information about a pending registration action
 - FIFRA registration data
 - The document is a duplicate of page(s) _____
 - The document is not responsive to the request
-

The information not included is generally considered confidential by product registrants. If you have any questions, please contact the individual who prepared the response to your request.
