United States
Environmental Protection
Agency

Office of
Pesticides and Toxic Substances
Washington DC 20460

June 1987

Pesticides

EPA

Guidance for the Reregistration of Pesticide Products Containing Oxamyl as the Active Ingredient

GUIDANCE FOR THE REREGISTRATION OF PESTICIDE PRODUCTS

CONTAINING

OXAMYL

SHAUGHNESSY No. 103801

AS THE ACTIVE INGREDIENT
CAS No. 23135-22-0

EPA CASE NUMBER 108

ENVIRONMENTAL PROTECTION AGENCY
OFFICE OF PESTICIDE PROGRAMS

WASHINGTON, D.C. 20460

TABLE OF CONTENTS

I. Introduction 1

II. Chemical(s) Covered by this Standard 4
A. Description of Chemical 4
B. Use Profile 5

III. Agency Assessment 6
A. Summary 6
B. Preliminary Science Findings 8
C. Tolerance Reassessment 16
D. Tolerance Assessment System Reassessment. . . 17

IV. Regulatory Position and Rationale. 19
A. Summary of Positions and Rationales. 19
B. Criteria for Registration 25
C. Acceptable Ranges and Limits 26
D. Required Labeling 27

V. Products Subject to this Standard 33

VI. Requirement for Submission of Generic Data 36
A. What are generic data?
B. Who must submit generic data?
C. What generic data must be submitted?
D. How to comply with DCI requirements
E. Procedures for requesting a change in protocol
F. Procedures for requesting extensions of time
G. Existing stocks provisions upon suspension or cancellation

VII. Requirement for Submission of Product-Specific Data. 41

VIII. Requirement for Submission of Revised Labeling . . . 42

IX. Instructions for Submission. 43
A. Manufacturing use products (sole active)
B. Manufacturing use products (multiple active)
C. End use products
D. Intrastate products
E. Addresses

APPENDICES

I. DATA APPENDICES

Guide to Tables

Table A

Table B

Table C

II. LABELING APPENDICES

Summary of label requirements and table

40 CFR 162.10 Labeling Requirements

Physical/Chemical Hazards Labeling Statements

Storage Instructions

Pesticide Disposal Instructions

Container Disposal Instructions

III. USE INDEX APPENDIX

IV. BIBLIOGRAPHY APPENDICES

Guide to Bibliography

Bibliography

V. FORMS APPENDICES

EPA Form 8580-1 FIFRA)3(c)(2)(B) Summary Sheet

EPA Form 8580-6 Certification of Attempt to Enter into an Agreement with Other Registrants for Development of Data

EPA Form 8580- Product Specific Data Report (End-Use Products)

EPA Form 8580- Formulator's Exemption Statement

I. INTRODUCTION

The Registration Standards Program

EPA has established the Registration Standards program in order to provide an orderly mechanism by which pesticide products containing the same active ingredient can be reviewed and standards set for compliance with FIFRA. The standards are applicable to reregistration and future applications for registration of products containing the same active ingredient. Each registrant of a product containing an active ingredient subject to this Standard who wishes to continue to sell or distribute that product must bring his product and labeling into compliance with FIFRA, as instructed by this Standard. Pesticides have been grouped into use clusters and will be reviewed on the basis of a ranking scheme giving higher priority to (1) pesticides in clusters used on food and feed crops; and (2) pesticides produced in large volumes.

The Registration Standards program involves a thorough review of the scientific data base underlying a pesticide's registration. The purpose of the Agency's review is to reassess the potential hazards arising from the currently registered uses of the pesticide; to determine the need for additional data on health and environmental effects; and to determine whether the pesticide meets the "no unreasonable adverse effects" criteria of FIFRA. In its review EPA identifies:

1. Studies that are acceptable in fulfilling the data requirements for the currently registered uses of the pesticide.

2. Additional studies necessary to support continued registration. The additional studies may not have been required when the product was initially registered or may be needed to replace studies that are now considered inadequate.

3. Labeling revisions needed to ensure that the product is not misbranded and that the labeling is adequate to protect human health and the environment.

The detailed scientific review, which is not contained in this document, but is available upon request[1], focuses on the pesticide active ingredient. The scientific review primarily discusses the Agency's evaluation of and conclusions from available data in its files pertaining to the pesticide active ingredient. However, during the review of these data the Agency is also looking for potential hazards that may be associated with the end use products that contain the active ingredient. The Agency will apply the provisions of this Registration Standard to end use products if necessary to protect human health and the environment.

The Agency's reassessment results in the development its regulatory position which is contained in Section IV of this Standard. Based on this regulatory position, the Agency may prescribe a variety of steps to be taken by registrants to maintain their registrations in compliance with FIFRA. These steps may include:

1. Submission of data in support of product registration;

2. Modification of product labels;

3. Modifications to the manufacturing process of the pesticide to reduce the levels of impurities or contaminants;

4. Restriction of the use of the pesticide to certified applicators or other specially trained individuals;

5. Modification of uses or formulation types; or

6. Specification of packaging limitations.

Failure to comply with these requirements may result in the issuance of a Notice of Intent to Cancel or a Notice of Intent to Suspend (in the case of failure to submit data).

---

[1] The scientific reviews are available upon request from the Information Services Section, Room 236, CM#2, 1921 Jefferson Davis Highway, Arlington, VA. 22202 (Tel.(703)557-4453). Ninety days after the issuance of the Standard, the reviews may be purchased from the National Technical Information Service, 5285 Port Royal Road, Springfield, VA 22161.

In addition, in cases in which hazards to human health or the environment are identified, the Agency may initiate a special review of the pesticide in accordance with 40 CFR Part 154 to examine in depth the risks and benefits of use of the pesticide. If the Agency determines that the risks of the pesticide's use outweigh its benefits, the Agency may propose additional regulatory actions, such as cancellation of uses which have been determined to cause unreasonable adverse effects on the environment.

EPA has authority under the Data Call-In (DCI) provisions of FIFRA sec. 3(c)(2)(B) to require that registrants submit data to answer questions regarding the chemical, toxicological, and environmental characteristics and fate of a pesticide. This Registration Standard lists the data EPA believes are necessary to resolve concerns about this pesticide. These data are listed in the Tables A, B, and C in Appendix I. Failure to comply with the DCI requirements enumerated in this Registration Standard may result in issuance by EPA of a Notice of Intent to Suspend the affected product registrations.

Registrants are reminded that FIFRA sec. 6(a)(2) requires them to submit factual information concerning possible unreasonable adverse effects of a pesticide at any time that they become aware of such information. Registrants should notify the Agency of any information, including interim or preliminary results of studies, if those results suggest possible adverse effects on man or the environment. This requirement continues as long as the products are registered by the Agency.

II. CHEMICAL COVERED BY THIS STANDARD

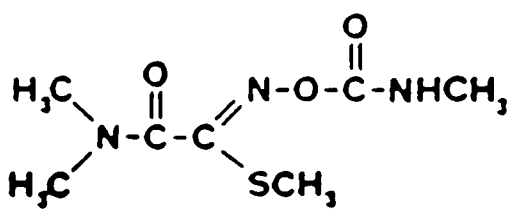
A. DESCRIPTION OF CHEMICAL

Oxamyl is the American National Standards Institute (ANSI) approved common name for a carbamate insecticide produced solely in the United States by E.I. DuPont de Nemours.

The chemical name for oxamyl is Methyl N'N'-dimethyl-N-[(methylcarbamoyl)oxy]-1-thiooxamimidate. Other common names and trade names include DPX 1410, Vydate, and thioxamyl (International Standardization Organization, ISO).

Empirical Formula:	$C_7H_{13}N_3O_3S$
Molecular Weight:	219.3
CAS Registry No.:	23135-22-0
OPP Shaughnessy No.:	103801

CHEMICAL STRUCTURE



Oxamyl is a white, crystalline, solid with a melting point of 100-102 degrees centigrade. Oxamyl is soluble in water at 28g/100g, methanol at 144g/100g, acetone at 67g/100g, ethanol at 33g/100g, and toluene at 1g/100g.

B. USE PROFILE

Type of Pesticide:	Insecticide, nematocide, acaricide.
Pests Controlled:	Insects, mites, nematodes.
Registered Uses:	Oxamyl is registered on a variety of field crops, vegetables, and ornamentals. Some products are registered for greenhouse and potted ornamentals.
Annual Usage:	Estimated at 580,000 lbs active ingredient.
Predominant Uses:	Apples, potatoes, tomatoes.
Mode of Activity:	Cholinesterase inhibitor. Systemic in plants.
Formulations:	42% formulation intermediate. 24%soluble concentrate (SC). 2 lbs ai.per gal. 10% granular (G). There is no technical oxamyl product registered.
Basic Registrant:	E.I. DuPont de Nemours & Co. Inc.
Initial Registration:	1974
Number of Registrants:	4
Restrictions:	The 24 SC product is classified as a Restricted Use Pesticide. Oxamyl is not allowed for outdoor application in Suffolk and Nassau counties, New York, as a result of groundwater contamination.

End-Use Registrations

Formulation	Section 3	Section 24C
Granular	5	2
Soluble Concentrate	1	69

The following states have 24(C) registrations for oxamyl, the number per state is included in parentheses(): AZ(3), CA(8), CO(1), CT(2), DE(1), FL(6), HI(4), ID(1), IL(1), IN(1), MA(1), MD(2), MI(6), NC(1), ND(1), NJ(1), NM(1), NY(4), OH(2), OR(4), PA(4), PR(2), SC(1), TX(4), VA(3), VT(2), WA(3), WV(1).

There are no intrastate products for oxamyl and no multiple active ingredient products.

III. AGENCY ASSESSMENT

A. SUMMARY SCIENCE STATEMENT

The Agency has reviewed oxamyl data in the areas of acute toxicity, subchronic and chronic toxicity, oncogenicity, reproductive effects, mutagenicity, plant and animal metabolism, residues, environmental fate and exposure, and ecological effects. As a result of this review, the Agency has determined that certain changes in the conditions of registration, including specific label restrictions and submission of missing data, are necessary to maintain current registrations of products and support registration of new products containing oxamyl. A summary of these data gaps and label revisions appears in Table 1. Note that this list contains only summary information on data gaps. More detailed information can be obtained by referring to Table A in Appendix 1. Based upon a review of the available data the Agency has reached the following interim conclusions. A detailed discussion of the Agency's science findings can be found in section III.B entitled "Preliminary Science Findings".

1. Oxamyl is highly toxic via the oral and inhalation routes of exposure. The manufacturing use product has classified as Toxicity Category I.

2. While the available data are insufficient to permit a complete evaluation of the chronic effects from oxamyl exposure, no oncogenic response was noted in a valid mouse oncogenicity study. Based upon that study, the NOEL for chronic toxicity is 25 ppm and the LOEL is 50 ppm. No structural abnormalities were reported in a rabbit teratology study. The developmental NOEL was 4 mg/kg/day (HDT) and the maternal NOEL is 1 mg/kg/day.

3. Oxamyl is highly toxic to birds, bees and mammals, and moderately toxic to fish. Technical oxamyl is moderately toxic to freshwater invertebrates. However, the 24SC formulation is highly toxic to some freshwater invertebrates. Uses of oxamyl may threaten endangered species.

4. Leaching studies indicate that unaged (parent compound) oxamyl may leach in certain soil types. Oxamyl has been found in minute quantities in a small percentage of drinking water wells in Suffolk County, New York and in Massachusetts. Occupational illnesses have been reported in California following exposure to spray drift.

TABLE 1. SUMMARY OF DATA GAPS AND REQUIRED LABELING FOR OXAMYL

Toxicology

Acute Dermal Toxicity
Primary Eye Irritation
Primary Skin Irritation
Dermal Sensitization
21 Day Subchronic Dermal Toxicity
Chronic Toxicity (rodent & non-rodent)
Oncogenicity (rat)
Teratogenicity (rat)
Reproduction
Gene Mutation
Chromosomal Aberration
General Metabolism

Ecological Effects

Avian Dietary LC_{50} (upland & waterfowl)
Field studies (avian & mammalian)
Estuarine and Marine Fish LC_{50}
Fish Early Life Stage
Honeybee Toxicity of Residues on Foliage

Environmental Fate

Hydrolysis
Photodegradation in Water
Anaerobic Soil Metabolism
Leaching and Adsorption/Desorption
Soil Dissipation
Rotational Crops (confined)
Glove Permeability
Droplet Size/Drift Evaluation

Product Chemistry

Description of Manufacturing Process
Discussion of Formulation and Impurities
Preliminary Analysis of Product Samples
Certification of Ingredient Limits
Analytical Methods to Verify Certified Limits
Physical and Chemical Characteristics

Residue Chemistry

Storage Stability
Plant Residues
Animal Metabolism, Ruminant and Poultry
Processing Studies

Labeling Revisions

Protective Clothing
Groundwater Advisory Statement
Fish and Wildlife Toxicity Warnings
Reentry Restrictions
Restricted Use Classification (granular)

B. PRELIMINARY SCIENCE FINDINGS

1. Acute Toxicity

Oxamyl is extremely toxic to mammals and is classified in Toxicity Category I for the oral and inhalation routes of exposure. Oxamyl acts by inhibition of cholinesterase. Toxic signs result from excessive stimulation at cholinergic junctions in the autonomic and central nervous systems, and include tremors, fasciculation, salivation, labored respiration, diarrhea, and exophthalmos. Atropine has been shown to be an antidote in both rats and monkeys. Studies on a technical grade product indicate that the acute oral LD_{50} for male rats is 3.1 mg/kg; female rats, 2.5 mg/kg. Acute dermal toxicity studies with a technical grade formulation were considered supplementary because of incomplete reporting. An additional dermal toxicity study is required. The acute inhalation LC_{50} for a 1 hour exposure is 0.17 mg/L for the male rat and 0.12 mg/L for the female. With a 4 hour exposure the acute LC_{50} for male rats is 0.064 mg/L. Limited data available indicate that oxamyl produces some reversible eye irritation. These data are supplementary and an additional study is required. Dermal irritation data reviewed indicate that oxamyl caused severe systemic effects (cholinesterase inhibition) and some dermal irritation. The study is supplementary and an additional study is required. The limited data do not indicate dermal sensitization from oxamyl but the study is supplementary and an additional study is required.

2. Subchronic toxicity

The available data include a a 90 day rat oral study which is considered invalid and a 13 week dog oral study which is considered supplementary. Additional studies are usually required in both rodent and non-rodent species. However, subchronic oral toxicity data are superseded by the requirement for chronic studies in rats, dogs, and mice. No subchronic dermal 21 day study is available for oxamyl and a study is required. No 90 day subchronic dermal or subchronic inhalation study are available. These studies are not required for the presently registered use patterns. As Oxamyl is not an organophosphate, no subchronic neurotoxicity study is required.

3. Chronic Toxicity

Chronic feeding studies in the rat and the dog have been reviewed and found to be inadequate. In the rat study, 30 rats/sex/dose were fed diets containing 50, 100, and 150 ppm oxamyl for 2 years. At the two highest doses decreases in body weights of both male and female rats were observed. No significant histopathological changes were noted in the treated animals. The NOEL for chronic toxicity in rats was 50 ppm and the LOEL was 100 ppm. This rat study is classified as supplementary because of missing histopathology data and insufficient clinical chemistry. While no adverse effects were observed in the dog study, it too is classified as supplementary due to the lack of histopathology on interim sacrificed animals, insufficient numbers of animals in the control and high dose groups, and because the highest dose tested did not approach the maximum tolerated dose.

4. Oncogenicity

In an acceptable study, mice orally dosed at 25, 50, and 75 ppm oxamyl for 2 years displayed decreased body weights at the higher two doses, but no other histopathological changes. Relative to the controls, no increase in tumor incidence was found in the treated groups. Based upon the mouse oncogenicity study, the NOEL for chronic toxicity in mice is 25 ppm; and the LOEL is 50 ppm. The rat study also showed no increase in tumor incidence but was found to be unacceptable and must be repeated.

5. Developmental and Reproductive Effects

The available teratology data only partially satisfy the data requirements. In an acceptable rabbit study, oxamyl was administered orally at doses of 1, 2, and 4 mg/kg/day. No developmental effects were observed at any dose level and the only observed change was decrease in body weight of the 2 and 4 mg/kg/day groups. This study yielded a developmental NOEL of 4 mg/kg/day (HDT), and a maternal NOEL of 1 mg/kg/day. In a second study female rats were fed oxamyl at dietary concentrations of 50, 100, 150, and 300 ppm from day 6 through day 15 of the gestation period. While no functional or structural abnormalities were reported, the study contains only summary data and is therefore classified as supplementary. An additional teratology study with rats is required. In a 3 generation rodent reproduction and fertility study the only observed effect was a decrease in weights of in the weanlings at mid and high doses. Study deficiencies include; an insufficient number of litters, no report of the number of animals, and insufficient reporting of data. The study is classified as supplementary and another study is required.

6. Mutagenicity

An acceptable differential toxicity assay using B. subtilis indicates that oxamyl did not cause DNA damage. No chromosomal aberration assays have been submitted, and an acceptable study is required. An Ames assay using S. typhimirium and E. coli showed that oxamyl did not cause gene mutation. Similar results were obtained in a host-mediated assay using S. typhimirium. However, the Ames assays lack confirmation by another independent study and the toxicity of oxamyl was not evaluated for dose selection. For the host-mediated study, certain crucial information concerning clinical signs in the treated mice and the data on the preliminary dose selection study are missing. An acceptable study is required.

7. Metabolism

The two available metabolism studies do not fulfill Agency requirements. One study used only two male rats. The other study used rat liver homogenate. Both studies are classified as supplementary. Additional studies are required.

8. Environmental Fate and Ground Water

The available data are insufficient to fully assess the environmental fate of oxamyl, including the extent of groundwater contamination, and its persistence in the environment. Oxamyl has been found in drinking-water wells in Suffolk County, New York, and in Massachusetts at levels from 1 to 395 ppb. In 1983, the New York State Health Department limit for oxamyl was 50 ppb. In 1985, Massachusetts also considered 50 ppb as a guideline limit for oxamyl. In New York, less than 0.1% of the samples tested during the 5 year period from 1980 thru 1985 exceeded 50 ppb. Oxamyl residues were detected below 50 ppb in 2.9% of the total samples tested (15,535) at an average concentration of 10 ppb and a median concentration of 3 ppb. In Massachusetts, of the 146 samples tested in 1985, only 1 positive sample at 1 ppb was found.

In the available hydrolysis study, data to support the claimed quantitative conversion of oxamyl to oxime were not provided and the purity of the test substance was not specified. Acceptable data from this study must be provided or an additional study is required. The available data for photodegradation in water are not acceptable. This report contains two experiments. In the first, the test substance was not characterized and the recovery rate was not supported by data. In the second, the test solutions were not sterile, the test substance was not characterized, the solutions were not buffered, the temperature was not reported, sunlight parameters were not described and there was no material balance. Data to support the reported 98% recovery, purity and specific activity of the test substance must be supplied, or an acceptable study is required. The one study available concerning photodegradation in soil only partially fulfills data requirements because of test substance purity and because degradates were not characterized. Additional data are not required, however, because most oxamyl soil applications involve soil incorporation.

Available data adequately describe the metabolism of oxamyl in aerobic soil. Labeled oxamyl at 4 and 20 ppm degraded with a half-life of 14-28 days in silt loam soil incubated at 25 degrees C and 70% water holding capacity. The major degradate was carbon dioxide. Other degradates included the oxime and N,N-dimethyloxamic acid. Neither of the two studies evaluating anaerobic soil metabolism fulfill Agency requirements. In the first study the test substance purity was not given, the oxamyl was not aged prior to introduction of anaerobic conditions,, soils were not completely characterized, and incubation temperatures were not reported. In the second study the test substance was uncharacterized, the treated soil was not initially aged aerobically, incubation temperatures were not reported, degradates were not adequately identified, and the analytical methodology was not properly described. Acceptable data are required.

Three studies relative to leaching and adsorption/desorption were reviewed. The sum of these data are sufficient to demonstrate the leaching potential of unaged oxamyl. Unaged oxamyl (parent compound) is very mobile in sandy loam and silt loam soil columns (Average TLC Rf values were 1.00 and 0.70, respectively). Additional data are required for aged oxamyl residues employing a column leaching study which includes adequate identification of residues.

Two terrestrial field dissipation studies were reviewed. The first does not fulfill the data requirement because the maximum application rate was not used, the field test data were incomplete (including confirmation of the application rate), and the test substance was not adequately characterized. In the second study the maximum application rate was not used, the purity of the test substance was not reported, soils were not completely characterized, and the patterns of formation and decline of degradates were not addressed. Complete studies are required. The requirement for a long-term soil dissipation study is deferred until the receipt of acceptable field dissipation data.

Data for confined accumulation on rotational crops could not be validated as the application rate was not confirmed by immediate posttreatment sampling. In addition, the test material was uncharacterized, soil samples were not analyzed at the time of harvest of the rotational crops, residues other than oxamyl and oxime were not identified, and other deficiencies were noted. Complete data are required. Data for field accumulation are deferred until such time as acceptable confined rotational studies have been received and reviewed.

Data for foliar dissipation, dermal exposure, and inhalation exposure were submitted and have been reviewed. Additional information is needed for conversion of the reported data to surface residue levels. Soil dissipation studies are not available and will be required for those use patterns where workers will be exposed directly to substantial quantities of soil during their work such as in the harvesting of potatoes, carrots, or celery.

A well-water monitoring study has been reviewed and found to be valid. Oxamyl was detected at 5.0 to 5.4 ppb in July in three newly drilled wells (8.8 to 12.2 ft.) located within 10 feet (in the direction of ground water flow) of a potato field on Long Island, NY, that had been treated with oxamyl(purity unspecified) at yearly application rates of 6 and 9 lb. ai/acre that spring and the previous year. Subsequent sampling in August and December showed no detectable (<5 ppb) oxamyl. Eight other wells on Long Island, 30 to 400 ft. from potato fields treated with oxamyl at yearly rates ranging from 3 to 11 lb ai/acre that spring and the previous year were sampled several times and no oxamyl residues were detected.

A freezer storage stability study could not be validated as the method of analysis was not reported. The method should be submitted.

9. Ecological Effects

Available data adequately describe the acute oral toxicity of oxamyl to birds (See Table 2, below). Technical grade 97.1% oxamyl is highly toxic to birds. The acute oral toxicity of a 24% SC formulated product also indicates a high toxicity to birds although there is no guidelines requirement for avian toxicity data on formulated products. Residues of the SC formulation on crops used by birds are likely to be above the bobwhite LC50 and lowest reproductive effect level for waterfowl. For the granular formulation, assuming a size of 2 mg per granule (0.2 mg ai), one granule is approximately equivalent to the LD50 of a 67 g bird or small mammal. Available studies on avian dietary toxicity for the technical have been evaluated and found to be inadequate. Additional studies on both upland game birds and waterfowl are necessary.

Table 2. The Acute Oral Toxicity of Oxamyl to Avian Species

Species	Percent A.I.	LD50, mg/kg
Mallard	97.1	3.16
Mallard	24	10.75
Bobwhite	24	39.20

Avian reproduction studies for upland game birds and waterfowl have been reviewed and found to be acceptable. For the bobwhite, the NOEL is 50 ppm (highest dose tested). For the mallard the NOEL is 10 ppm and the LOEL is 50 ppm (highest dose tested).

Data from simulated or actual terrestrial field tests are required for formulated products of oxamyl because EEC's exceed the avian LD50 and LC50 and mammalian LD50 levels as determined in laboratory tests. These data are required for foliar applications of 24% soluble concentrate products and soil applications of 10% granular products.

Available data are sufficient to satisfy guidelines requirements for acute toxicity tests with the technical grade product for both coldwater and warmwater species of freshwater fish (See Table 3). These data indicate that technical oxamyl is moderately toxic to fish. Additional data on a 24% formulated product indicate moderate toxicity to warmwater fish and slight toxicity to coldwater fish.

Table 3. Acute Toxicity of Oxamyl to Freshwater Fish

Species	Percent A.I.	LC50, ppm
Bluegill	90	5.6
Rainbow Trout	90	4.2
Bluegill	24.8	6.1
Rainbow Trout	24	12.4

Studies utilizing *Daphnia magna* indicate that technical oxamylis moderately toxic to freshwater invertebrates (LC50 5.7 ppm). No additional data for the technical are required. The 24 SC formulation is highly toxic to freshwater invertebrates, and with an LC50 for *D. magna* of 1.95 ppm, is more toxic than the technical. As current registered uses of oxamyl do not include direct application to water and do not result in EEC's greater than the freshwater invertebrate LC_{50}, freshwater invertebrate testing with formulated products are not required.

The data evaluating the toxicity of technical oxamyl to estuarine and marine fish have been reviewed and found to be unacceptable. A 96 hour LC_{50} study for a fish, preferably *Menidia sp.* or spot, *Leiostomus xanthurus* must be submitted.

While no data evaluating the effects of technical oxamyl to marine invertebrates were available, acceptable data on the 24% formulated product have been reviewed and found to be sufficient to fulfill the shrimp and oyster estuarine and marine organism requirements. The EC50s for grass shrimp and eastern oysters are 0.7 and 0.1 ppm ai, respectively. Available studies on fish early life stages have been reviewed and found to be unacceptable. As the aquatic EEC's from all foliar uses of oxamyl at 2.0 lbs ai/acre and higher, from 24% SC soil applications without incorporation, and from 10% granular treatments on peanuts and ornamentals all exceed 0.01 the LC_{50} for rainbow trout, fish early life stage testing is required.

Aquatic invertebrate life cycle data evaluating the effects of technical oxamyl on Daphnia magna have been reviewed and found to satisfy the invertebrate life cycle requirements. No effects were observed at the highest test concentration of 1 ppm.

Data from honey bee acute contact LD_{50} studies are sufficient to satisfy this guideline requirement. This information indicates that oxamyl is moderate to high in toxicity to honey bees. For this reason, data from a honey bee residual foliage toxicity test is required and must be submitted.

10. Endangered Species

The Agency has evaluated the risk oxamyl poses to endangered species, based on jeopardy opinions prepared by the Department of Interior's Office of Endangered Species (OES) regarding oxamyl's use on certain crops. This analysis indicates that the use of oxamyl on certain crops may jeopardize certain endangered species. The Agency has developed endangered species labeling statements which govern the use of oxamyl in areas inhabited by endangered species. This labeling has been required through PR Notices 87-4 and 87-5 issued May 1, 1987.

11. Data Call-In Notices Issued

The Agency has issued the following 3(c)(2)(B) Data Call-In Notices:

Date Issued	Data Required	Status
05/31/84	Environmental Fate Hydrolysis Photodegradation-water Photodegradation-soil Aerobic soil Anaerobic soil Mobility Field Dissipation-soil Product Chemistry Water Solubility Vapor Pressure Octanol water partition coefficient	Submitted Existing Data. An Agency review of the data indicated certain notable deficiencies. Registrant submitted additional information 03/04/87, and 04/01/87 which was reviewed for this standard.
05/27/86	Foliar Dissipation Soil Dissipation Dermal Exposure Inhalation Exposure	Registrant response reviewed for this standard.

12. Reported Pesticide Incidents

A search of the files in the Pesticide Incident Monitoring System (PIMS) reveals four incidents reported to the Agency between 1966 and 1979 when PIMS was active. All incidents involved human exposure to oxamyl alone in agricultural situations. The circumstances were described as container failure, improper storage, ingestion, and improper disposal. A fatality was reported in one incident involving probable container failure (accident undescribed). The other three incidents resulted in hospitalizations.

California data for the period 1981 through 1985 list the following occupational illness for oxamyl; systemic (13), eye (3), skin (1). Most exposures apparently involved spray drift. Four incidents occurred during ground application and two during mixer-loader operations.

C. TOLERANCE REASSESSMENT

Tolerances have been established for oxamyl in or on a number of raw agricultural commodities at levels between 0.1 and 10.0 ppm. A listing of the established tolerances is located at the end of this section. There are no Mexican tolerances for the sites registered for use in the United States.

After evaluation of the available residue and toxicology studies supporting these tolerances, the following conclusions have been reached:

Residue Data

1. Data gaps exist for storage stability. Upon receipt of the required storage stability data, conclusions regarding the adequacy of established tolerances may change. No tolerances are presently established for residues in or on animal commodities. An evaluation of required data for animal metabolism and residues in feed items may indicate the necessity for studies and tolerances pertaining to residues in animal commodities.

2. Sufficient data are available to ascertain the adequacy of the established tolerances (40CFR 180.303) for residues of oxamyl in or on sweet potato; soybeans, soybean straw, eggplants, peppers, tomatoes, cucumber, honeydew melon, watermelon, summer and winter squash, cantaloupes, apples, pears, peppermint and spearmint hay, peanuts, peanut hulls, pineapples, and pineapple bran.

3. Insufficient data are available to ascertain the adequacy of the established tolerances (40CFR 180.303 and 21 CFR 561.285) for residues of oxamyl in or on carrots, ginger, potatoes, garlic, onions, celery, bananas, cottonseed, peanut forage and hay, pineapple forage, and citrus.

4. Processing studies are required for the following commodities: citrus, potatoes, soybeans, tomatoes, cottonseed, pineapple, and peanuts.

5. Upon receipt of the required residue data, the commodity entry "Root crop vegetables" will be deleted and appropriate individual crop (carrots, ginger, potatoes, sweet potatoes, garlic, onions) or crop group (Root and Tuber Vegetables Group and Bulb Vegetables Group) tolerances will be established.

6. Data are required to determine whether tolerances are needed to support registered uses of oxamyl on nonbearing cherries, peaches, plums, and strawberries.

7. As there are no registered uses of oxamyl on pumpkins, a registrant must propose a use or the tolerance will be revoked. This use must be identical to the registered use on winter squash (winter squash data are used to support the 2 ppm pumpkin tolerance). Otherwise the proposed use on pumpkins must be accompanied by appropriate residue data to assess the adequacy of the established tolerances.

8. Data are required to determine the exposure of man to residues of oxamyl resulting from its use on tobacco.

Toxicology Data and Acceptable Daily Intake (ADI)

An ADI had been determined by the Agency Reference Dose (RFD) committee based upon a 2 year rat feeding study. Compound related effects were decreases in body weights in both mid and high dose rats of both sexes. The NOEL in this study was 50 ppm (2.5 mg/kg). Utilizing an uncertainty factor of 100, the ADI was set at 0.025 mg/kg/day.

Based upon a reevaluation of the data base, the 2-year rat feeding study is now classified supplementary. Nevertheless, because the sum of the available data indicate no increase in tumors, and there are no information to suggest that the ADI is inadequate to protect human health, a provisional ADI (PADI) will continue to be based upon this study with the same uncertainty factor until acceptable studies have been submitted and all data gaps have been filled.

Tolerance Assessment System Tolerance Reassessment

1. The provisional acceptable daily intake (PADI) for this chemical is 0.025 mg/kg/day.

2. The food uses evaluated by the Tolerance Assessment System (TAS) were published tolerances as established under 40 CFR 180.303, and pending tolerances that are under consideration by the Agency.

3. A comparison of published tolerances to the PADI was conducted using the TAS Routine Chronic Analysis. This analysis calculates a Theoretical Maximum Residue Contribution (TMRC) based upon published and pending tolerances. The TAS analysis estimates dietary exposures for the U.S. population average and for each of 22 subgroups. The TMRC for the U.S. population average is 0.0132 mg/kg/day, which occupies 53.1% of the PADI. The TMRCs for non-nursing infants and children 1-6 years of age exceeded the PADI: 0.0387 mg/kg/day (155% of the PADI) and 0.0334 (135% of the PADI), respectively.

For children 1-6 years old and non-nursing infants, the majority of the TMRC was contributed by oranges and apples, which accounted for 70-80% of the estimated exposure. Since the TMRC is calculated on the basis of tolerance-level residues, it is likely that data reflecting actual residue concentrations in these commodities would result in a lower estimate of dietary exposure.

Summary of Current Oxamyl Tolerances

Commodity	Tolerances (ppm) United Statesa/	Canadab/	(MRL) International (Codex)c/
Carrots	0.1	---	0.1
Ginger	0.1	---	---
Potatoes	0.1	0.1	0.1
Sweet Potato	0.1	---	0.1
Garlic	0.1	---	---
Onion	0.1	---	0.05
Celery	3.0	---	3.0
Soybeans	0.2	---	0.1
Soybean Straw	0.2	---	---
Eggplant	2.0	---	---
Peppers (Bell)	3.0	---	3.0
Tomatoes	2.0	---	2.0
Cantaloupe	2.0	---	2.0
Cucumbers	2.0	---	0.5
Honeydew melon	2.0	---	2.0
Pumpkinsd/	2.0	---	---
Summer Squash	2.0	---	2.0
Watermelon	2.0	---	2.0
Winter Squash	2.0	---	---
Citrus fruit group	3.0	---	3.0
Apples	2.0	---	2.0
Pears	2.0	---	---
Bananas	0.3	---	0.2
Cottonseed	0.2	---	0.2
Peppermint hay	10.0	---	---
Spearmint hay	10.0	---	---
Peanuts	0.2	---	0.1e/
Peanut hay & forage	2.0	---	2.0
Pineapples	1.0	---	1.0
Pineapple forage	10.0	---	---
Pineapple branf/	6.0	---	---

a/ The U.S. tolerance definition does not include the oxime even though the U.S. tolerance level is based upon combined levels of oxamyl and its oxime combined.
b/ The Canadian tolerances are expressed in terms of oxamyl per se.
c/ The Codex Maximum Residue Levels are expressed as residues of oxamyl and its oxime, expressed as oxamyl.
d/ Although this crop has a tolerance there are no EPA registered uses.
e/ Available U.S. data indicate that residues of oxamyl and its oxime in or n peanuts will not exceed 0.1 ppm.
f/ Feed Additive Tolerance (21 CFR 561.285)

IV. REGULATORY POSITION AND RATIONALE

A. SUMMARY OF REGULATORY POSITIONS AND RATIONALES

1. Special Review

The Agency is not placing oxamyl into Special Review at this time.

Rationale:

Calculations and models based upon the acute toxicity of oxamyl indicate that granular formulations of oxamyl have the potential to cause effects (i.e. non-target mortality) in birds and mammals, and certain uses may exceed special review criteria. There is, however, only limited field data to support the finding that significant adverse effects exist for terrestrial wildlife. The Agency is requiring extensive field monitoring data to define the extent of exposure and hazard. Evaluation of the necessity for a special review on oxamyl will be completed after acceptable data have been received and reviewed.

Incident data and human toxicity data on file indicate that systemic poisoning to users and/or field workers can result from exposure to oxamyl. Through the continued Restricted Use Classification of SC formulations, and the imposition of protective clothing and equipment, work safety and reentry statements, on all end-use product labels the Agency believes that hazards posed by acute toxicity will be mitigated.

2. Restricted Use Classification

All oxamyl end-use products are candidates for restricted use classification based upon toxicity to avian and mammalian species. In addition, the Agency will continue to restrict the 24% SC formulation of oxamyl on the basis of acute toxicity. Registrants of 10G products have the option of either submitting the acute toxicity data described in Table C or also classifying these products for restricted use on the basis of acute toxicity. (Note: Submitted data may indicate continued restricted use classification).

Rationale:

All registered oxamyl products bear outdoor uses that may pose risks to non-target birds and mammals. All products are classified for Restricted Use because residues per square foot occurring immediately after application in or on the food of avian and mammalian species exceed 1/10 the dietary LD50.

Available data indicate that the 24% SC formulation should continue to be restricted. These data indicate that the technical product is extremely toxic via the oral and inhalation routes of administration. These data are sufficient to indicate that the 24% SC formulation will meet or exceed the acute toxicity criteria for restricted use classification. Extrapolation of the existing data base to the 10G formulation also indicates that these formulations are likely to exceed the criteria for restricted use classification. However, due to the nature of granular formulations, it is possible that certain products will not exceed the criteria for restricted use classification. Registrants are therefore being given the opportunity to develop and submit acute toxicity data that will permit determination of the appropriate toxicity categories and restricted use wording for 10G products. Registrants may choose not to submit these data and additionally classify these products for restricted use on the basis of acute toxicity.

3. Endangered Species

Endangered species labeling has been required through PR Notices 87-4 and 87-5 issued May 1, 1987.

Rationale:

Oxamyl is toxic to certain species of fish, birds, mammals, and aquatic invertebrates which reside in areas where oxamyl is likely to be used. The Agency, in an attempt to limit use of oxamyl in areas where its use may be detrimental to endangered species, has required through Pesticide Registration (PR) Notices endangered species information on labeling of end-use products which contain uses for certain crops. The required labeling is based on Biological Opinions by the Office of Endangered Species (OES) of the Fish and Wildlife Service, U.S. Department of the Interior.

4. Reentry Interval

An interim 48 hour reentry interval is being imposed for all agricultural and greenhouse uses of oxamyl until such time as the appropriate reentry data have been submitted and evaluated.

Rationale:

Oxamyl use patterns meet or exceed those criteria in Section 158.40 of 40 CFR concerning the requirement for a reentry interval. Oxamyl meets these criteria in that:

1. The acute dermal toxicity of the technical grade is less than 200 mg/kg.
2. The acute oral toxicity of the technical grade is less than 50 mg/kg.
3. The Agency has received epidemiological evidence that residues of this pesticide can cause adverse effects to individuals entering treated sites. There have been a number of poisoning incidents with oxamyl.

Oxamyl also meets the exposure criteria of 40 CFR 158.140 in that it is registered for use on crops for which current agricultural practices include human tasks which involve substantial exposure to residues of the pesticide. A 48 hour reentry interval is imposed because of the high acute toxicity of oxamyl and data gaps regarding post-application exposure.

5. Drift Studies Required

The Agency is requiring the submission of drift studies for 24 SC formulations.

Rationale:

Because of reported occupational illness due to exposure to oxamyl as a result of spray drift, droplet size spectrum and drift field evaluation studies are required.

6. Groundwater Contamination and Advisory Statements

The Agency is requiring the addition of a groundwater advisory statement to all oxamyl labels.

Rationale:

Oxamyl leaches through the soil and has been found in ground water. At this time, because of the wide natural variability in soil types, weather patterns and aquifer characteristics, it is impossible to specify those circumstances when oxamyl will reach groundwater. The ground water data call-in of 5/31/84 was initiated to derive that information which will allow more accurate predictions concerning the potential of oxamyl to contaminate ground water. These data have been submitted and reviewed, but found to be inadequate and additional information is required in this standard. Acceptable well-monitoring studies do not indicate toxicological concerns from the levels of contamination reported at this time. Oxamyl residues will be monitored in the National Survey for Pesticides in Ground Water. EPA Method 531, which measures both the parent and the oxime degradate, will be used. A pilot program for all the selected pesticides has begun. Until the leaching studies and the data from the pilot program have been received and reviewed, a Groundwater Advisory Statement is required on all oxamyl labels.

7. Crop Rotation Restrictions Expanded

A 6 month rotational interval for crops (including root crops) for which no tolerance has been established, must appear on all oxamyl labels.

Rationale:

Residues detected at 120 days in the confined crop rotation studies indicate that the existing rotational crop interval of 4 months is inadequate. Extrapolation of these levels indicate that a 6 month interval will be adequate.

8. Glove Permeability Test Required

The Agency is requiring a glove permeability test for the soluble concentrate formulation of oxamyl.

Rationale:

Gloves can greatly reduce dermal exposure and are required for handling oxamyl SC products. However, there are no data demonstrating which materials adequately limit dermal exposure. The Agency is requiring a glove permeability study in order to determine which materials are best suited for this use.

9. Restrictions on Flaggers for Aerial Application

The Agency is prohibiting the use of human flaggers during aerial application, unless they are in an enclosed vehicle such as a pickup truck or a tractor with a completely enclosed cab.

Rationale:

The Agency is imposing this requirement to minimize hazards to human flaggers who inherently face a risk of exposure by direct contact or drift during aerial application.

10. Changes in Precautionary Labeling

The Agency will require that end-use products bear updated precautionary labeling (including protective clothing and equipment) related to the toxicity category to which each product is assigned. For the 24SC formulation, these statements (Toxicity Category I) are required through this registration standard. For the 10G formulation, the Agency will determine the appropriate labeling after review of the required toxicology data for end-use products.

Rationale:

Because of the acute toxicity of oxamyl products, specific precautionary statements are required to prevent poisoning of workers or applicators by direct exposure or contact with contaminated clothing or materials. Extrapolation of data from the technical is sufficient to determine the appropriate precautionary labeling for the 24 SC product. Registrants of 10 G products have the option of either utilizing Toxicity Category I precautionary labeling and the protective clothing and equipment statements described under D. Required Labeling in this standard or making the appropriate revisions after the submission of the required product specific acute toxicology data.

11. New Tolerances

No significant new tolerances or significant new food uses will be granted until the Agency has received data sufficient to evaluate the dietary exposure to oxamyl.

Rationale:

Residue chemistry and toxicology data are insufficient to assess the adequacy of existing tolerances. Animal metabolism, field residue, processing and storage stability data are required. Pertinent toxicology data gaps include chronic toxicity, oncogenicity, teratogenicity, reproduction, and mutagenicity. Refer to Appendix I, Table A for specific residue chemistry and toxicology data required. A tolerance reassessment cannot be completed until these data are submitted.

12. Labeling for Hazards to Non-target Organisms

Revised labeling for hazards to non-target organisms are required.

Rationale:

Data indicate that oxamyl is highly toxic to birds and mammals and moderately toxic to aquatic organisms. Other data indicate that oxamyl is moderately to highly toxic to the honeybee. Precautionary label statements relative to the potential exposure of non-target organisms to oxamyl will provide use information to promote practices to limit such non-target exposure.

13. Use Directions Nursery and Ornamental Plants

Use directions for nursery and ornamental plants must be revised to prohibit applications of oxamyl in domestic situations (such as to potted plants or interior plantscapes in or around homes, shopping malls, or commercial buildings). This statement is required through this Registration Standard for the 24 SC. For 10G products, the registrants have the option of adding this statement immediately or submitting the acute toxicity data in Table C for Agency review. (Note: Submitted data may indicate the statement is required)

Rationale:

The high acute toxicity of oxamyl 24 SC formulations creates an unacceptable risk if existing formulations are applied in such areas especially if frequented by children. Extrapolated data would indicate that 10G formulations may also pose an unacceptable risk in these situations. However, due to the nature of granular formulations, it possible that these products may not pose such unacceptable risk. Registrants of 10G products therefore have the option of submitting the appropriate acute toxicity data to evaluate such potential risk or choosing not to submit such data and including the prohibition.

14. Continuation of Registration

While the required data are under development, currently registered manufacturing use products (MPs) and end use products (EPs) containing oxamyl as the sole active ingredient may be sold, distributed, formulated and used, subject to the terms and conditions specified in this Standard. Registrants must provide or agree to develop additional data, as specified in the Data Appendices, in order to maintain existing registrations.

Rationale: Under FIFRA, the Agency may choose not to cancel or withhold registration if data are missing or are inadequate (see FIFRA sec. 3(c)(2)(B) and 3(c)(7)). The issuance of this standard provides a mechanism for identifying data needs. These data will be reviewed and evaluated, after which the Agency will determine if additional regulatory actions are necessary.

B. CRITERIA FOR REGISTRATION

To be registered or reregistered under this Standard, manufacturing-use (MP) and end-use (EP) products must contain oxamyl as the sole active ingredient, bear required labeling, and conform to the product composition, acute toxicity limits, and use pattern requirements listed in this document.

The applicant for registration or reregistration of MP and/or EP products subject to this Standard must comply with all terms and conditions described, including submission of an up-to-date Confidential Statement of Formula, submission of revised labeling, commitment to fill data gaps on the schedules as specified by the Agency and, when applicable, offer to pay compensation as required by sections 3(c)(1)(D) and 3(c)(2)(D) of the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), as amended, 7 U.S.C. 136(c)(1)(D) and 136(c)(2)(D). Registrants of end-use products who qualify for the Formulator's Exemption must submit five (5) copies of draft labeling incorporating the unique label statements identified in Section D.

C. ACCEPTABLE RANGES AND LIMITS

1. Product Composition Standard

To conform to this standard, MP and EP products must contain oxamyl as the sole active ingredient. Each formulation proposed for registration must be fully described with an appropriate certification of limits, stating maximum and minimum amounts of the active and intentionally added inert ingredients present in their products, as well as impurities found at levels greater than 0.1%.

2. Acute Toxicity Limits

The Agency will consider registration of technical grade, manufacturing-use, or end-use products containing oxamyl, provided the product is supported by appropriate acute toxicity data and the labeling for the product bears appropriate precautionary statements for the toxicity category in which the product is placed. Oxamyl MPs and 24SC end-use products are in toxicity category I and the appropriate signal word is **DANGER**.

3. Use Patterns

To be registered under this Standard, manufacturing-use products must be labeled for formulation into other manufacturing-use products or into end-use products bearing federally registered uses. End-use products must bear federally registered uses. Appendix III lists all federally registered uses as well as approved maximum application rates and frequencies.

D. REQUIRED LABELING

All products must bear appropriate labeling as specified in 40 CFR 162.10, PR Notices 83-2, 83-3, 87-4, 87-5, and below. Appendix II contains further information on label requirements.

Pesticide products containing oxamyl as the active ingredient may not be released for shipment by the registrant after August 1, 1988 unless the product bears amended labeling which complies with the requirements of this standard.

Pesticide products containing oxamyl as the active ingredient may not be distributed, sold, offered for sale, held for sale, shipped, delivered for shipment, or received and (having been so received) delivered or offered to be delivered by any person after August 1, 1989 unless the product bears amended labeling which complies with the requirements of this Standard.

Labeling for the protection of endangered species are required as per PR Notices 87-4 and 87-5 issued May 1, 1987.

All Products

1. Ingredients Statement

Registrants of all oxamyl products are required to revise their labels to the following format:

ACTIVE INGREDIENT:

Oxamyl Methyl N'N'-dimethyl-N-[(methylcarbamoyl)oxy]-1-thiooxamimidate....._____%

INERT INGREDIENTS:....._____%.

Manufacturing Use Products

1. Use Pattern Statements

All manufacturing-use oxamyl products must state that they are intended for formulation into other MPs or end-use products for uses accepted by the U.S. Environmental Protection Agency. The labeling must specify those use patterns listed under Use Patterns as Appendix III. No uses may be included on any label where the registrant fails to agree to comply with the data requirements in TABLE A for that pattern of use.

2. Environmental Hazards

The following revised environmental hazard statement must appear on all MP labels:

"This pesticide is toxic to wildlife. Do not discharge effluent containing this product into lakes, streams, ponds, estuaries, oceans or public waters unless this product is specifically identified and addressed in an NPDES permit. Do not discharge effluent containing this product to sewer systems without previously notifying the sewage treatment plant authority. For guidance contact your State Water Board or Regional Office of the EPA."

3. Protective Clothing and Equipment

The following statement must appear on the Manufacturing Use Product:

"HANDLE THE CONCENTRATE ONLY WHEN WEARING THE FOLLOWING PROTECTIVE CLOTHING AND EQUIPMENT:

Wear a protective suit of one or two pieces that covers all parts of the body except the head, hands, and feet. Wear chemical resistant gloves, chemical resistant apron, and chemical resistant shoes, shoe coverings, or boots. Wear goggles or a face shield. Wear a pesticide respirator approved by the National Institute for Occupational Safety and Health (NIOSH) and the Mine Safety and Health Administration (MSHA)."

End Use Products

1. Environmental Hazards Statements

a. Oxamyl 24% SC

"This pesticide is toxic to wildlife and aquatic invertebrates. Drift and runoff may be hazardous to aquatic organisms in neighboring areas. Do not apply directly to water or wetlands (swamps, bogs, marshes, and potholes). Do not contaminate water by cleaning of equipment or disposal of wastes."

b. Oxamyl 10% G

"This product is toxic to wildlife. Cover, collect, or incorporate granules spilled on soil surfaces. Do not contaminate water by cleaning of equipment or disposal of wastes."

2. Required Bee Caution

a. Oxamyl 24% SC:

"This product is highly toxic to bees exposed to direct treatment or residues on blooming crops or weeds. Do not apply this product or allow to drift to blooming crops or weeds if bees are visiting the treatment area."

3. Special Precaution for Ornamental and Potted Plants:

a. Oxamyl 24% SC:

The following statement must appear in the directions for use concerning ornamental and potted plants:

"For use only in commercial greenhouses and nurseries. Do not apply this product to interior plantscapes or potted plants in or around domestic areas such as homes, shopping malls, or commercial buildings."

b. Oxamyl 10% G:

The above statement regarding ornamental or potted plants must appear on the label or the registrant may submit the acute toxicity data in Table C. to determine if such statement is not appropriate.

4. Reentry Statement:

The following statement must appear on the labeling of agricultural end use products which are applied to crops whose culture may involve hand labor tasks:

" Do not enter treated areas for 48 hours after application unless protective clothing is worn, as described in the product labeling"

5. Restricted Use Statement

The following restricted use statement must appear on the front panel of all 24 SC products. This statement must also appear on 10G labels unless the acute toxicity data (in Table C) indicate that the product is not a candidate for restricted use on the basis of acute toxicity. In such cases, "Acute Toxicity And" may be deleted from the statement.

"RESTRICTED USE PESTICIDE
Due to Acute Toxicity
And Toxicity to Birds and Mammals

For retail sale to and use only by certified applicators or persons under their direct supervision and only for those uses covered by the certified applicator's certification."

6. Rotational Crop Statement

All end use products must have the following crop rotation statement:

"Do not plant crops other than those with registered oxamyl uses within 6 months after the last application."

7. Protective Clothing and Work Safety

a. All Products.

"WEAR THE FOLLOWING PROTECTIVE CLOTHING AND EQUIPMENT DURING HANDLING, MIXING, LOADING, APPLICATION, EQUIPMENT AND CLEANING, DURING EARLY REENTRY TO TREATED AREAS, AND DURING DISPOSAL OF THE PESTICIDE:

Wear a protective suit of one or two pieces that covers all parts of the body except the head, hands, and feet. Wear chemical-resistant gloves, chemical-resistant apron, and chemical resistant shoes, shoe coverings or boots. Wear goggles or faceshield and a pesticide respirator approved by the National Institute for Occupational Safety and Health (NIOSH) and/or the Mine Safety Health Enforcement Administration (MSHA). A chemical resistant hat or hood must be worn if the application is likely to result in overhead exposure, such as during air blast applications.

During application from a tractor with a completely enclosed cab or aerially with an enclosed cockpit, a long sleeve shirt and long legged pants may be worn in place of the above protective clothing. Chemical resistant gloves and an approved respirator must be available in the cab or cockpit, and the gloves must be worn when exiting. Note that this clothing is inadequate to protect you during equipment repair, equipment cleaning, reentry, or during pesticide disposal.

IMPORTANT! Always wash hands, face and arms with soap and water before eating, smoking, drinking or toileting.

AFTER WORK: Wash gloves with soap and water before removing. Take off all clothing and shoes. Shower using soap and water. Wear only clean clothes. Do not use contaminated clothing. Wash protective clothing and equipment with soap and water after each use. Personal and protective clothing worn during use must be laundered separately from household articles. Clothing and protective equipment heavily contaminated or drenched with oxamyl must be destroyed according to state and local regulations.

HEAVILY CONTAMINATED OR DRENCHED CLOTHING CANNOT BE ADEQUATELY DECONTAMINATED.

Respirators should be cleaned and cartridges replaced according to instructions included with the respirator. Replace gloves frequently.

DURING AERIAL APPLICATION, HUMAN FLAGGERS MUST BE IN A TOTALLY ENCLOSED VEHICLE."

b. For the 24 SC only, the following wording may appear on the label:

"If mixing or loading the concentrate with a closed system, a long sleeve shirt and long-legged pants may be substituted for the protective suit and respirator. Appropriate protective clothing and equipment must still be worn during application, equipment repair, equipment cleaning, early reentry, and disposal."

8. Ground Water Advisory

The following statement is required for all end-use products.
"

GROUND WATER ADVISORY

Residues of (product name) can seep or leach through soil and can contaminate ground water which may be used for drinking. Users are advised not to apply (product name) where the water table is close to the surface and where soils are very permeable, i.e., well-drained soils such as loamy sands. Local Agricultural Agencies can provide information on the soil types in your area and the location of the ground water. "

V. PRODUCTS SUBJECT TO THIS STANDARD

All products containing one or more of the pesticides identified in Section II.A. are subject to certain requirements for data submission or changes in composition, labeling or packaging of the product. The applicable requirements depend on whether the product is a manufacturing or end use product and whether the pesticide is the sole active ingredient or one of multiple active ingredients.

Products are subject to this Registration Standard as follows:

A. Manufacturing use products containing oxamyl as the sole active ingredient are subject to:

1. The restrictions (if any) upon use, composition, or packaging listed in Section IV, if they pertain to the manufacturing use product.

2. The data requirements listed in Tables A and B.[1]

3. The labeling requirements specified for manufacturing use products in Section IV.

4. Administrative requirements (application forms, Confidential Statement of Formula, data compensation provisions) associated with reregistration.

---

[1] Data requirements are listed in the three tables in Appendix I of this registration standard. The guide to tables in that Appendix explains how to read the Tables.

Table A lists generic data requirements applicable to all products containing the pesticide subject to this registration standard. Table B lists product-specific data applicable to manufacturing use products. The data in Tables A and B need not be submitted by a producer who is eligible for the formulator's exemption for that active ingredient.

Table C lists product-specific data applicable to end use products.

B. Manufacturing use products containing oxamyl as one of multiple active ingredients are subject to:

The data requirements listed in Table A and labeling requirements specified for manufacturing use products.

C. End use products containing oxamyl as the sole active ingredient* are subject to:

1. The restrictions (if any) upon use, composition, or packaging listed in Section IV if they pertain to the end use product.

2. If eligible for the formulator's exemption[2], the data requirements listed in Table C.

3. If not eligible for the formulator's exemption, the data requirements listed in Table A and the data requirements listed in Table C.

4. The labeling requirements specified for end use products in Section IV.

---

* solvents or diluents must be declared as inerts. The Agency does not have data indicating that these solvents are insecticidal.

[2]If you purchase from another producer and use as the source of your active ingredient only EPA-registered products, you are eligible for the formulator's exemption for generic data concerning that active ingredient (Table A) and product-specific data for the registered manufacturing use product you purchase (Table B).

Two circumstances nullify this exemption:

1) If you change sources of active ingredient to an unregistered product, formulate your own active ingredient, or acquire your active ingredient form a firm with ownership in common with yours, you individually lose the exemption and become subject to the data requirements in Table A.

2) If no producer subject to the generic data requirements in Table A agrees to submit the required data, all end use producers lose the exemption, and become subject to those data requirements.

D. End use products containing this pesticide as one of multiple active ingredients are subject to:

a. If not eligible for the formulator's exemption, the data requirements listed in Tables A and C.

b. If eligible for the formulator's exemption, the data requirements listed in Table C.

c. The labeling requirements specified for end use products specified in Section IV.

VI. REQUIREMENT FOR SUBMISSION OF GENERIC DATA

This portion of the Registration Standard is a notice issued under the authority of FIFRA sec. 3(c)(2)(B). It refers to the data listed in Table A, which are required to be submitted by registrants to maintain in effect the registration of products containing this active ingredient.[3]

A. What are generic data?

Generic data pertain to the properties or effects of a particular active ingredient. Such data are relevant to an evaluation of all products containing that active ingredient regardless of whether the product contains other ingredients. (unless the product bears labeling that would make the data requirement inapplicable).

Generic data may also be data on a "typical formulation" of a product. "Typical formulation" testing is often required for ecological effects studies and applies to all products having that formulation type. These are classed as generic data, and are contained in Table A.

B. Who must submit generic data?

All current registrants are responsible for submitting generic data in response to a data request under FIFRA sec. 3(c)(2)(B) (DCI Notice). EPA has decided, however, not to require a registrant who qualifies for the formulator's exemption (FIFRA sec. 3(c)(2)(D) and § 152.85) to submit generic data in response to a DCI notice if the registrant who supplies the active ingredient in his product is complying with the data request.

If you are not now eligible for a formulator's exemption, you may qualify for one if you change your source of supply to a registered source that does not share ownership in common with your firm. If you choose to change sources of supply, the Confidential Statement of Formula must identify the new source(s) and you must submit a Formulator's Exemption Statement form.

---

[3] Registrations granted after issuance of this Standard will be conditioned upon submission or citation of the data listed in this Registration Standard.

If you apply for a new registration for products containing this active ingredient after the issuance of this Registration Standard, you will be required to submit or cite generic data relevant to the uses of your product if, at the time the application is submitted, the data have been submitted to the Agency by current registrants. If the required data have not yet been submitted, any new registration will be conditioned upon the new registrant's submission or citation of the required data not later than the date upon which current registrants of similar products are required to provide such data. See FIFRA sec. 3(c)(7)(A). If you thereafter fail to comply with the condition of that registration to provide data, the registration may be canceled (FIFRA sec. 6(e)).

C. What generic data must be submitted?

You may determine which generic data you must submit by consulting Table A. That table lists the generic data needed to evaluate current uses of all products containing this active ingredient, the uses for which such data are required, and the dates by which the data must be submitted to the Agency.

D. How to comply with DCI requirements.

Within 90 days of your receipt of this Registration Standard, you must submit to EPA a completed copy of the form entitled "FIFRA Section 3(c)(2)(B) Summary Sheet" (EPA Form 8580-1, enclosed) for each of your products. On that form you must state which of the following six methods you will use to comply with the DCI requirements:

1. You will submit the data yourself.

2. You have entered into an agreement with one or more registrants to jointly develop (or share in the cost of developing) the data, but will not be submitting the data yourself. If you use this method, you must state who will submit the data on which you will rely. You must also provide EPA with documentary evidence that an agreement has been formed which allows you to rely upon the data to be submitted. Such evidence may be: (1) your letter offering to join in an agreement and the other registrant's acceptance of your offer, (2) a written statement by the parties that an agreement exists, or (3) a written statement by the person who will be submitting the data that you may rely upon its submission. The Agency will also require adequate assurance that the person whom you state will provide the data is taking appropriate steps to secure it. The agreement to produce the data need not specify all of the terms of the final arrangement between the parties or a mechanism to resolve the terms.

3. You have attempted to enter into an agreement to jointly develop data, but no other registrant has accepted your offer. You request that EPA not suspend your registration for non-compliance with the DCI. EPA has determined that, as a general policy, it will not suspend the registration of a product when the registrant has in good faith sought and continues to seek to enter into a data development/cost sharing program, but the other registrants developing the data have refused to accept its offer. [If your offer is accepted, you may qualify for Option 2 above by entering into an agreement to supply the data.]

In order to qualify for this method, you must:

a. File with EPA a completed "Certification of Attempt to Enter into an Agreement with other Registrants for Development of Data" (EPA Form 8580-6, enclosed).

b. Provide us with a copy of your offer to the other registrant and proof of the other registrant's receipt of your offer (such as a certified mail receipt). Your offer must, at a minimum, contain the following language or its equivalent:

> [Your company name] offers to share in the burden of producing the data required pursuant to FIFRA sec. 3(c)(2)(B) in the [name of active ingredient] Registration Standard upon terms to be agreed or failing agreement to be bound by binding arbitration as provided by FIFRA section 3(c)(2)(B)(iii).

The remainder of your offer may not in any way attempt to limit this commitment. If the other registrant to whom your offer is made does not accept your offer, and if the other registrant informs us on a DCI Summary Sheet that he will develop and submit the data required under the DCI, then you may qualify for this option. In order for you to avoid suspension under this method, you may not later withdraw or limit your offer to share in the burden of developing the data. In addition, the other registrant must fulfill its commitment to develop and submit the data.

4. You request a waiver of the data requirement. If you believe that a data requirement does not (or should not) apply to your product or its uses, you must provide EPA with a statement of the reasons why you believe this is so. Your statement must address the specific composition or use factors that lead you to believe that a requirement does not apply. Since the Agency has carefully considered the composition and uses of pesticide products in determining that a data requirement applies, EPA does not anticipate that many waivers will be granted. A request for waiver does not extend the time-frames for developing required data, and if your waiver request is denied, your registration may be suspended if you fail to submit the data.

5. You request that EPA amend your registration by deleting the uses for which the data are needed. You are not required to submit data for uses which are no longer on your label.

6. You request voluntary cancellation of the registration of your product(s) for which the data are needed.

E. Procedures for requesting a change in testing protocol.

If you will generate the required data and plan to use test procedures which deviate from (or are not specified in) either EPA's Pesticide Assessment Guidelines or the Reports of Expert Groups to the Chemicals Group, Organization for Economic Cooperation and Development (OECD) Chemicals Testing Programme, you must submit for EPA approval the protocols you propose to use.

You should submit your protocols before beginning testing and await EPA approval, because the Agency will not ordinarily accept as sufficient studies using unapproved protocols. A request for protocol approval will not extend the timeframe for submission of the data, nor will extensions generally be given to conduct studies due to submittal of inappropriate protocols.

F. Procedures for requesting extensions of time.

If you think that you will need more time to generate the data than is allowed by EPA's schedule, you may submit a request for an extension of time. Any request for a time extension which is made as an initial response to a section 3(c)(2)(B) request notice must be submitted in writing to the Product Manager listed at the end of this section and must be made before the deadline for response. Once dates have been committed to and EPA has accepted these commitments, any subsequent requests for a time extension must be submitted in writing to the Office of Compliance Monitoring.

EPA will view failure to request an extension before the response deadline as a waiver of any future claim that there was insufficient time to submit the data. While EPA considers your request, you must strive to meet the deadline for submitting the data.

The extension request should state the reasons why you believe that an extension is necessary and the steps you have taken to meet the testing deadline. Time extensions normally will not be granted due to problems with laboratory capacity or adequacy of funding, since the Agency believes that with proper planning these can be overcome. Time extensions may be considered when joint data development is planned, or when the Agency must approve a new or modified protocol before the study can be begun.

A request for an extension does not extend the timeframe for submission of the data. If EPA denies your request for a time extension and you do not submit the data as requested, EPA may begin proceedings to suspend the registrations of your products.

G. Existing stocks provision upon suspension or cancellation.

The Agency has determined that if a registration is suspended for failure to respond to a DCI request under FIFRA sec. 3(c)(2)(B), an existing stocks provision is not consistent with the Act. Accordingly, the Agency does not anticipate granting permission to sell or distribute existing stocks of suspended product except in rare circumstances. If you believe that your product will be suspended or canceled and that an existing stocks provision should be granted, you have the burden of clearly demonstrating to EPA that granting such permission would be consistent with the Act. The following information must be included in any request for an existing stocks provision:

1. Explanation of why an existing stocks provision is necessary, including a statement of the quantity of existing stocks and your estimate of the time required for their sale or distribution; and

2. Demonstration that such a provision would be consistent with the provisions of FIFRA.

VII. REQUIREMENT FOR SUBMISSION OF PRODUCT-SPECIFIC DATA

Under its DCI authority, EPA has determined that certain product-specific data are required to maintain your registrations in effect. Product-specific data are derived from testing using a specific formulated product, and, unlike generic data, generally support only the registration of that product. All such data must be submitted by the dates specified in this Registration Standard.

If you have a manufacturing use product, these data are listed in Table B. If you have an end use product, the data are listed in Table C. As noted earlier, the Agency has decided that it will not routinely require product-specific data for end use products at this time. Therefore, Table C may not be contained in this Registration Standard; if there is no Table C, you are not required to submit the data at this time.

In order to comply with the product specific data requirements, you must follow the same procedures as for generic data. See Section IV.D, E, F, and G. You should note, however, that product chemistry data are required for every product, and the only acceptable responses are options IV.D.1. (submit data) or IV.D.6.(cancellation of registration).

Failure to comply with the product-specific data requirements for your products will result in suspension of the product's registration.

VIII. REQUIREMENT FOR SUBMISSION OF REVISED LABELING

FIFRA requires each product to be labeled with accurate, complete and sufficient instructions and precautions, reflecting the Agency's assessment of the data supporting the product and its uses. General labeling requirements are set out in 40 CFR 162.10 (see Appendix II - LABELING and SUMMARY). In addition, labeling requirements specific to products containing this pesticide are specified in Section IV.D of this Registration Standard. Applications submitted in response to this notice must include draft labeling for Agency review.

If you fail to submit revised labeling as required, which complies with 40 CFR 162.10 and the specific instructions in Section IV.D., EPA may seek to cancel or suspend the registration of your product under FIFRA sec. 6.

IX. INSTRUCTIONS FOR SUBMISSION

A. Manufacturing Use Products (MPs) containing Oxamyl as sole active ingredient.

1. Within 90 days from receipt of this document, you must submit to the Product Manager in the Registration Division for each product subject to this Registration Standard:

a. The "FIFRA Section 3(c)(2)(B) Summary Sheet" (EPA Form 8580-1), with appropriate attachments./4

b. Confidential Statement of Formula (EPA Form 8570-4), attached separately.

c. Formulator's Exemption Statement, if applicable.

d. Evidence of compliance with data compensation requirements of FIFRA sec. 3(c)(1)(D). Refer to 40 CFR 152.80-152.99.

2. Within 9 months from receipt of this document you must submit to the Product Manager:

a. Two copies of any required product-specific data (See Table B).

b. Five (5) copies of draft labeling, including the container label and any associated supplemental labeling. Labeling should be either typewritten text on 8-1/2 x 11 inch paper or a mockup of the labeling suitable for storage in 8-1/2 x 11 files. The draft label must indicate the intended colors of the final label, clear indication of the front panel of the label, and the intended type sizes of the text.

c. Product Specific Data Report.

---

4 If on the Summary Sheet, you commit to develop the data, present arguments that a data requirement is not applicable or should be waived, or submit protocols or modified protocols for Agency review, you must submit a copy of the Summary Sheet (and any supporting information) to the Office of Compliance Monitoring, which will be monitoring the data generated in response to this notice. This submission is in addition to responding to the Product Manager, and should be submitted to the Office of Compliance Monitoring at the address given at the end of this section. (Actual studies are not to be submitted to the Office of Compliance Monitoring.)

3. Within the times set forth in Table A, you must submit to the Registration Division all generic data, unless you are eligible for the formulator's exemption. If for any reason any test is delayed or aborted so that the schedule cannot be met, immediately notify the Product Manager and the Office of Compliance Monitoring of the problem, the reasons for the problem, and your proposed course of action.

B. Manufacturing Use Products containing Oxamyl in combination with other active ingredients.

1. Within 90 days from receipt of this document, you must submit to the Product Manager in the Registration Division:

a. FIFRA sec. 3(c)(2)(B) Summary Sheet, with appropriate attachments (EPA Form 8580-1).

b. Confidential Statement of Formula (EPA Form 8570-4), attached separately.

c. Formulator's Exemption Statement, if applicable.

2. Within 9 months from receipt of this document you must submit five (5) copies of draft labeling.

3. Within the time frames set forth in Table A, you must submit to the Registration Division all generic data, unless you are eligible for the formulator's exemption. If for any reason any test is delayed or aborted so that the schedule cannot be met, immediately notify the Product Manager and the Office of Compliance Monitoring of the problem, the reasons for the problem, and your proposed course of action.

C. End Use Products containing Oxamyl alone or in combination with other active ingredients.

1. Within 90 days from receipt of this document, you must submit to the Product Manager in the Registration Division:

a. FIFRA Section 3(c)(2)(B) Summary Sheet, with appropriate attachments5 (EPA Form 8580-1).

b. Confidential Statement of Formula (EPA Form 8570-4), attached separately.

c. Formulator's Exemption Statement, if applicable.

2. Within 9 months from receipt of this document you must submit to the Product Manager:

a. Two copies of any product-specific data, if required by Table C.

b. Product Specific Data Report, if Table C lists required product-specific data.

c. Five copies of draft labeling, including the container label and any associated supplemental labeling. Labeling should be either typewritten text on 8-1/2 x 11 inch paper or a mockup of the labeling suitable for storage in 8-1/2 x 11 inch files. The draft labeling must indicate the intended colors of the final label, clear indication of the front panel of the label, and the intended type sizes of the text. End use product labeling must comply specifically with the instructions in Section IV (Regulatory Position and Rationale).

E. Addresses

Dennis Edwards
Product Manager 12
Registration Division (TS-767C)
Office of Pesticide Programs
Environmental Protection Agency
401 M St., SW
Washington, D.C. 20460

The address for submissions to the Office of Compliance Monitoring is:

Laboratory Data Integrity Program
Office of Compliance Monitoring (EN-342)
Environmental Protection Agency
401 M St., SW
Washington, D.C. 20460.

APPENDIX I

DATA APPENDICES

GUIDE TO TABLES

Tables A, B, and C contain listings of data requirements for the pesticides covered by this Registration Standard.

Table A contains generic data requirements that apply to the pesticide in all products, including data requirements for which a "typical formulation" is the test substance.

Table B contains product-specific data requirements that apply only to a manufacturing use product.

Table C contains product-specific data requirements that apply only to an end use product.

The data tables are generally organized according to the following format:

1. Data Requirement (Column 1). The data requirements are listed in the order in which they appear in 40 CFR Part 158. The reference numbers accompanying each test refer to the test protocols set out in the Pesticide Assessment Guidelines, which are available from the National Technical Information Service, 5285 Port Royal Road, Springfield, VA 22161.

2. Test Substance (Column 2). This column lists the composition of the test substance required to be used for the test, as follows:

TGAI = Technical grade of the active ingredient
PAI = Pure active ingredient
PAIRA = Pure active ingredient, radio labeled
TEP = Typical end use formulation
MP = Manufacturing use product
EP = End use product

Any other test substances, such as metabolites, will be specifically named in Column 2 or in footnotes to the table.

3. Use pattern (Column 3). This column indicates the use patterns to which the data requirement applies. Use patterns are the same as those given in 40 CFR Part 158. The following letter designations are used for the given use patterns:

A = Terrestrial, food
B = Terrestrial, non-food
C = Aquatic, food
D = Aquatic, non-food
E = Greenhouse, food
F = Greenhouse, non-food
G = Forestry
H = Domestic outdoor
I = Indoor

Any other designations will be defined in a footnote to the table.

4. Does EPA have data? (Column 4). This column indicates one of three answers:

YES - EPA has data in its files that completely satisfy this data requirement. These data may be cited by other registrants in accordance with data compensation requirements of Part 152, Subpart E.

PARTIALLY - EPA has some data in its files, but such data do not fully satisfy the data requirement. In some cases, the Agency may possess data on one of two required species, or may possess data on one test substance but not all. The term may also indicate that the data available to EPA are incomplete. In this case, when the data are clarified, or additional details of the testing submitted by the original data submitter, the data may be determined to be acceptable. If this is the case, a footnote to the table will usually say so.

NO - EPA either possesses no data which are sufficient to fulfill the data requirement, or the data which EPA does possess are flawed scientifically in a manner that cannot be remedied by clarification or additional information.

5. Bibliographic citation (Column 5). If the Agency has acceptable data in its files, this column lists the identifying number of each study. This normally is the Master Record Identification (MRID) number, but may be a GS number if no MRID number has been assigned. Refer to the Bibliography Appendices for a complete citation of the study.

6. Must additional data be submitted? (Column 6). This column indicates whether the data must be submitted to the Agency. If column 3 indicates that the Agency already has data, this column will usually indicate NO. If column 3 indicates that the Agency has only partial data or no data, this column will usually indicate YES. In some cases, even though the Agency does not have the data, EPA will not require its submission because of the unique characteristics of the chemical; because data on another chemical can be used to fulfill the data requirement; or because the data requirement has been waived or reserved. Any such unusual situations will be explained in a footnote to the table. N/A indicates that the data requirement is not applicable to the use pattern.

7. Timeframe for submission (Column 7). If column 5 requires that data be submitted, this column indicates when the data are to be submitted, based on the receipt date of the Registration Standard. The timeframes are those established either as a result of a previous Data Call-In letter, or standardized timeframes established by PR Notice 85-5 (August 22, 1985).

8. Footnotes (at the end of each table). Self-explanatory.

TABLE A
GENERIC DATA REQUIREMENTS FOR OXAMYL

Data Requirement	Test Substance	Does EPA Have Data?1/	Bibliographic Citation 1/	Must Additional Data be Submitted?	Timeframe for Submission2/
158.120 Product Chemistry					
Product Identity and Composition					
61-2 - Description of Beginning Materials and Manufacturing Process	TGAI			Yes	6 Months
61-3 - Discussion of Formation of Impurities	TGAI			Yes	6 Months
Analysis and Certification of Product Ingredients					
62-1 - Preliminary Analysis	TGAI			Yes	12 Months
Physical and Chemical Characteristics					
63-2 - Color	TGAI			Yes	6 Months
63-3 - Physical State	TGAI			Yes	6 Months
63-4 - Odor	TGAI			Yes	6 Months
63-5 - Melting Point	TGAI			Yes3/	6 Months

TABLE A
GENERIC DATA REQUIREMENTS FOR OXAMYL

Data Requirement	Test Substance	Does EPA Have Data?1/	Bibliographic Citation 1/	Must Additional Data be Submitted?	Timeframe for Submission2/
158.120 Product Chemistry (continued)					
Physical and Chemical Characteristics (continued)					
63-6 - Boiling Point	TGAI			Yes4/	6 Months
63-7 - Density, Bulk Density, or Specific Gravity	TGAI			Yes	6 Months
63-8 - Solubility	TGAI or PAI			Yes	6 Months
63-9 - Vapor Pressure	TGAI or PAI			Yes	6 Months
63-10 - Dissociation Constant	TGAI or PAI			Yes	6 Months
63-11 - Octanol/Water Partition Coefficient	PAI			Yes	6 Months
63-12 - pH	TGAI			Yes	6 Months
63-13 - Stability	TGAI			Yes	6 Months
Other Requirements:					
64-1 - Submittal of Samples	TGAI, PAI			Reserved5/	

1/ Although product chemistry data may have been submitted in the past, the Agency has determined that these data must be resubmitted for each pesticide. New requirements have been introduced and previously submitted data must be updated. Therefore, bibliographic citations for the old data are not applicable.
2/ Due dates refer to the number of months following receipt of this Registration Standard by the registrant, unless otherwise indicated.
3/ Required if the technical is a solid at room temperature.
4/ Required if the technical is a liquid at room temperature.
5/ If samples are needed, the Agency will request them.

TABLE A
GENERIC DATA REQUIREMENTS FOR OXAMYL

Data Requirement	Test Substance	Use Pattern	Does EPA Have Data?	Bibliographic Citation	Must Additional Data be Submitted?	Timeframe for Submission[1]
158.130 Environmental Fate						
DEGRADATION STUDIES-LAB:						
161-1 - Hydrolysis	PAIRA	ABEF	Partially	00040494	Yes	9 Months
Photodegradation						
161-2 - In Water	PAIRA	ABEF	Partially	00040494	Yes	9 Months
161-3 - On Soil	PAIRA	ABEF	No		N/A[7]	
161-4 - In Air	PAIRA	ABEF	No		N/A[8]	
METABOLISM STUDIES-LAB:						
162-1 - Aerobic Soil	PAIRA	ABEF	Yes	00063012	No	
162-2 - Anaerobic Soil	PAIRA	ABEF	No		Yes[2]	27 Months
162-3 - Anaerobic Aquatic	PAIRA	ABEF	No		N/A[7]	
162-4 - Aerobic Aquatic	PAIRA	ABEF	NO		N/A[7]	
MOBILITY STUDIES:						
163-1 - Leaching and Adsorption/Desorption	PAIRA	ABEF	Partially	00040494 00141395 00154748	Yes[3]	12 Months

TABLE A
GENERIC DATA REQUIREMENTS FOR OXAMYL

Data Requirement	Test Substance	Use Pattern	Does EPA Have Data?	Bibliographic Citation	Must Additional Data be Submitted?	Timeframe for Submission1
158.130 Environmental Fate(continued)						
163-2 - Volatility (Lab)	TEP	ABEF	No		N/A8	
163-3 - Volatility (Field)	TEP	ABEF	No		N/A8	
DISSIPATION STUDIES-FIELD:						
164-1 - Soil	TEP	ABEF	Yes	149231	Yes	27 Months/2
164-2 - Aquatic (Sediment)	TEP		No		N/A7	
164-3 - Forestry	TEP		No		N/A7	
164-4 - Combination and Tank Mixes	TEP		No		N/A7	
164-5 - Soil, Long-term	TEP	ABEF	No		Reserved4	
ACCUMULATION STUDIES:						
165-1 - Rotational Crops (confined)	PAIRA	ABEF	No		Yes	39 Months/2
165-2 - Rotational Crops (field)	TEP	ABEF	No		Reserved5	
165-3 - Irrigated Crops	TEP		No		N/A7	
165-4 - In Fish	PAIRA	ABEF	No		N/A6	
165-5 - In Aquatic Nontarget Organisms	TEP		No		N/A7	

TABLE A
GENERIC REQUIREMENTS FOR OXAMYL

158.130 Environmental Fate - Footnotes

1/ Due dates refer to the number of months following receipt of this Registration Standard by the registrant, unless otherwise indicated.

2/ First progress report due 8 months after receipt of this Standard. Interim reports are due semi-annually thereafter.

3/ Data are required on aged residues using a column leaching study indicating adequate identification of residues.

4/ Pending evaluation of information in soil studies 164-1.

5/ Pending results of confined rotational crop study.

6/ Octanol-water partition coefficient is 0.33.

7/ Not required because the registered use patterns preclude the necessity for these studies.

8/ Not required because the appropriate protective equipment triggered by the study results already appears on registered labels.

TABLE A
GENERIC DATA REQUIREMENTS FOR OXAMYL

Data Requirement	Test Substance	Use Pattern	Does EPA Have Data?	Bibliographic Citation	Must Additional Data be Submitted?	Timeframe for Submission1/
158.140 Reentry Protection						
132-1 - Foliar Dissipation	TEP2	ABEF	Partial	163605	Yes3	27 Months
132-2 - Soil Dissipation	TEP	A	No		Yes	27 Months
132-3 - Dermal Exposure	TEP	ABEF	Partial	163606	Yes3	27 Months
132-4 - Inhalation Exposure	TEP	ABEF	Partial	163606	Yes3	27 Months
158.75 Other Exposure Data						
- Glove Permeability	TEP2	ABEF	No		Yes4	9 Months5
158.142 Spray Drift						
201-1 - Droplet Size Spectrum	TEP2	AB	No		Yes6	12 Months
201-1 - Drift Field Evaluation	TEP2	AB	No		Yes6	12 Months

1/ Due dates refer to the number of months following receipt of this Registration Standard by the registrant, unless otherwise indicated.
2/ SC formulation only.
3/ Additional information is needed to complete estimation of reentry intervals. This information is needed for conversion of the reported data to surface residue levels.
4/ Study using several materials and conducted according to methods in "Standard Test Method fo Resistance of Protective Clothing to Permeation by Hazardous Liquid Chemicals", ASTM.
5/ Protocol required within 3 months of receipt of this Standard.
6/ The droplet size spectrum and the drift field evaluation data may be done together in order to evaluate the drop spectra associated with actual field use patterns.

TABLE A
GENERIC DATA REQUIREMENTS FOR OXAMYL

Data Requirement	Test Substance	Use Patterns	Does EPA Have Data?	Bibliographic Citation	Must Additional Data be Submitted?	Timeframe for Submission1
158.135 Toxicology						
ACUTE TESTING:						
81-1 - Acute Oral Toxicity - Rat	TGAI	ABEF	Yes	063011	No	
81-2 - Acute Dermal Toxicity - Rabbit	TGAI	ABEF	No		Yes	9 Months
81-3 - Acute Inhalation Toxicity - Rat	TGAI	ABEF	Yes	066902 066903	No	
81-7 - Acute Delayed Neurotoxicity- Hen	TGAI	ABEF	No		NA[2]	

1/ Due dates refer to the number of months following receipt of this Registration Standard by the registrant, unless otherwise indicated.

2/ This study is not required since the subject compound is not an organophosphate.

TABLE A
GENERIC DATA REQUIREMENTS FOR OXAMYL

Data Requirement	Test Substance	Use Patterns	Does EPA Have Data?	Bibliographic Citation	Must Additional Data be Submitted?	Timeframe for Submission[1]
158.135 Toxicology (continued)						
SUBCHRONIC TESTING:						
82-1 - 90-Day Feeding: Rodent and Nonrodent (Dog)	TGAI	ABEF	No		No[2]	
82-2 - 21-Day Dermal - Rabbit	TGAI	ABEF	No		Yes	7 Months
82-3 - 90-Day Dermal - Rabbit	TGAI	ABEF	No		NA[3]	
82-4 - 90-Day Inhalation - Rat	TGAI	ABEF	No		NA[3]	
82-5 - 90-Day Neurotoxicity	TGAI	ABEF	No		NA[4]	

1/ Due dates refer to the number of months following receipt of this Registration Standard by the registrant, unless otherwise indicated.
2/ Not required under the present circumstances since chronic studies in the rat, dog and mouse are needed. The registrant should be aware that subchronic studies are necessary to establish the MTD in rodent oncogenicity studies.
3/ Requirement not applicable because of lack of serious exposure with registered use patterns.
4/ This study is not required since the compound is not an organophosphate.

TABLE A
GENERIC DATA REQUIREMENTS FOR OXAMYL

Data Requirement	Test Substance	Use Patterns	Does EPA Have Data?	Bibliographic Citation	Must Additional Data be Submitted?	Timeframe for Submission/1
158.135 Toxicology (continued)						
CHRONIC TESTING:						
83-1 - Chronic Toxicity - Rodent and Non-Rodent	TGAI	ABEF	No		Yes2	42 Months3
83-2 - Oncogenicity - Mouse	TGAI	ABEF	Yes	076813	No	
Rat	TGAI	ABEF	No		Yes	42 Months3
83-3 - Teratogenicity - Rat	TGAI	ABEF	No		Yes	12 Months
Rabbit	TGAI	ABEF	Yes	063009	No	
83-4 - Reproduction - Rat 2-generation	TGAI	ABEF	No		Y	20 Months3

1/ Due dates refer to the number of months following receipt of this Registration Standard by the registrant, unless otherwise indicated.
2/ Both Rodent and NonRodent Required.
3/ First progress report due 8 months after receipt of this Standard. Interim reports are due semi-annually thereafter.

TABLE A
GENERIC DATA REQUIREMENTS FOR OXAMYL

Data Requirement	Test Substance	Use Patterns	Does EPA Have Data?	Bibliographic Citation	Must Additional Data be Submitted?	Timeframe for Submission1/
158.135 Toxicology (continued)						
MUTAGENICITY TESTING:						
84-2 - Gene Mutation	TGAI	ABEF	No		Yes	10 Months
84-3 - Structural Chromosomal Aberration	TGAI	ABEF	No		Yes	10 Months
84-4 - Other Genotoxic Effects (DNA Damage)	TGAI	ABEF	Yes	00040594	No	
SPECIAL TESTING						
85-1 - General Metabolism	PAI or PAIRA	ABEF	No		Yes	14 Months[2]

1/ Due dates refer to the number of months following receipt of this Registration Standard by the registrant, unless otherwise indicated.
2/ First progress report due 8 months after receipt of this Standard. Interim reports are due semi-annually thereafter.

TABLE A
GENERIC DATA REQUIREMENTS FOR OXAMYL

Data Requirement	Test Substance	Use Patterns	Does EPA Have Data?	Bibliographic Citation	Must Additional Data be Submitted?	Timeframe for Submission1/
58.145 Wildlife and Aquatic Organisms						
AVIAN AND MAMMALIAN TESTING:						
71-1 - Acute Avian Oral Toxicity	TGAI	AB	Yes	0094660	No	
71-2 - Avian Subacute Dietary - Upland Game Bird	TGAI	AB	No		Yes	9 Months
- Waterfowl	TGAI	AB	No		Yes	9 Months
71-3 - Wild Mammal Toxicity	TGAI	AB	No		Reserved[2]	
71-4 - Avian Reproduction -Upland Game Bird	TGAI	AB	Yes	0116610	No	
-Waterfowl	TGAI	AB	Yes	0116609	No	
71-5 - Simulated and Actual Actual Field Testing - Mammals and Birds	TEP3	AB	No		Yes4	48 Months5

TABLE A
GENERIC DATA REQUIREMENTS FOR OXAMYL

Data Requirement	Test Substance	Use Patterns	Does EPA Have Data?	Bibliographic Citation	Must Additional Data be Submitted?	Timeframe for Submission1/
58.145 Wildlife and Aquatic Organisms (continued)						
QUATIC ORGANISM TESTING						
72-1 - Freshwater Fish Toxicity						
- Coldwater Species	TGAI	AB	Yes	0066914	No	
- Warmwater Species	TGAI	AB	Yes	0066916	No	
72-2 - Acute Toxicity to Freshwater Invertebrates	TGAI	AB	Yes	0094664	No	
72-3 - Acute Toxicity to Estuarine and Marine Organisms - Fish	TGAI	AB	No		Yes6 7	
- Shrimp	TGAI	AB	Yes	0113412	No	
- Oyster	TGAI	AB	Yes	0113414	No7	
72-4 - Fish Early Life Stage, and Aquatic Invertebrate Life Cycle - Fish	TGAI	AB	No		Yes8	15 Months9
- Invertebrate	TGAI	AB	Yes	0094664	No	

TABLE A
GENERIC DATA REQUIREMENTS FOR OXAMYL

Data Requirement	Test Substance	Use Patterns	Does EPA Have Data?	Bibliographic Citation	Must Additional Data be Submitted?	Timeframe for Submission1/
158.145 Wildlife and Aquatic Organisms(continued)						
AQUATIC ORGANISM TESTING						
72-5 - Fish - Life Cycle	TEP	AB	No		N/A	10
72-6 - Aquatic Organism Accumulation	TEP	AB	No		N/A	11
72-7 - Simulated or Actual Field Testing	TEP	AB	No		Reserved	

1/ Due dates refer to the number of months following receipt of this Registration Standard by the registrant, unless otherwise indicated.
2/ Reserved pending the results of field field studies and the necessity of dietary studies on mammals to assess risks or interpret field studies.
3/ Both the 24% SC and the 10 G must be tested.
4/ Actual field testing with birds and mammals is required to support all uses of the 10 G formulation and all foliar applications of 24%SC products. For the granular product, a field study using band applications on peanuts is specifically required to support that use(unincorporated application). An additional field study with the granular (preferably on tomatoes) is required to support the other granular uses. Study design should include appropriate methods such as thorough carcass searching to determine pesticide-induced mortality and extent. For the 24% SC, field studies are required for apples(extent of use and wildlife utilization), on potatoes (preferably, or tomatoes) due to quantity used and wildlife utilization, and on pineapple because of the high application rate and potential residues. Field studies with the SC must use appropriate techniques to assy the extent of pesticide-induced mortality and the potential effects on avian breeding and mammalian populations. A guidance document which outlines an acceptable approach to these studies is available from the Agency. Registrants are encouraged to consult with the Agency concerning the design of these studies prior to the intitiation of field studies.

TABLE A
GENERIC DATA REQUIREMENTS FOR OXAMYL

158.145 Wildlife and Aquatic Organisms (continued)

5/ Protocols must be submitted within 12 months. These protocols must include specific sites and a detailed outline methodology and experimental design. Registrants are strongly encouraged to submit preliminary protocols within 6 months.
6/ 96 hour LC50 required based on the potential for runoff into estuarine areas from crop uses.
7/ Tests on the 24% SC satisfy requirements for the technical.
8/ Required for uses where estimated environmental concentrations exceed .01 the Fish LC50. These include all foliar applications greater than 1.0 lb ai/A, soil applications of the 24% SC that are not incorporated, soil applications of the 10 G at 2.0 lb. ai/A or greater, and applications by in-furrow irrigation water that do not specify methods (e.g. retention) to prevent the runoff of treated water.
9/ First progress report due 8 months after receipt of this Standard. Interim reports are due semi-annually thereafter.
10/ Study not required because the octanol/water partition coefficient is 0.33
11/ Maximum estimated environmental concentrations in aquatic habitats exceed 1/2 the LC50 for the most sensitive aquatic invertebrate from foliar applications at 2.0 lb ai/A and above, from granular soil treatments for peanuts and ornamentals, and from liquid soil treatments for eggplant, peppermint, spearmint, and garlic (SLNs from CA & OR). Aquatic residue monitoring studies are reserved, pending an evaluation of required environmental fate studies. Actual field studies for aquatic invertebrates are reserved for the same uses and will be required if if aquatic residue monitoring demonstrates that residues exceed 1/2 the LC50 for the most sensitive aquatice invertebrates.

GENERIC DATA REQUIREMENTS FOR OXAMYL

Data Requirement	Test Substance	Use Patterns	Does EPA Have Data?	Bibliographic Citation	Must Additional Data be Submitted?	Timeframe for Submission 1/
158.155 Nontarget Insects						
NONTARGET INSECT TESTING - POLLINATORS:						
141-1 - Honeybee Acute Contact LD50	TGAI	AB	Yes	00036935 05001991	No	
141-2 - Honeybee - toxicity of residues on foliage	TEP[2]	AB	No		Yes[3]	15 Months[4]
141-4 - Honeybee subacute feeding study	TEP	AB	No		Reserved5	
141-5 - Field testing for pollinators	TEP	AB	No		N/A	

1/ Due dates refer to the number of months following receipt of this Registration Standard by the registrant, unless otherwise indicated.
2/ SC formulation
3/ As data from the acute toxicity study indicate a high toxicity, residual toxicity data are required.
4/ First progress report due 8 months after receipt of this Standard. Interim reports are due semi-annually thereafter.
5/ Reserved pending development of test methodology.

TABLE A

GENERIC DATA REQUIREMENTS FOR OXAMYL

Data Requirement	Test Substance	Does EPA Have Data?	Bibliographic Citation	Must Additional Data Be Submitted?	Timeframe for Submission[1]
§158.125 Residue Chemistry					
171-2 - Chemical Identity[2]					
171-3 - Directions for Use (See Index)					
171-4 - Nature of Residue (metabolism)					
Plants		Yes	00028728, 00039511, 00040496, 00040597, 00040605, 00083525, 00134709	No	
Livestock	PAIRA	Partially	00028732	Yes[3,4]	18 Months[5]
171-4 - Residue Analytical Methods					
Plants and animal residues	TGAI and metabolites	Yes	00081618, 00113341, 00113357	Reserved[6]	
171-4 - Storage Stability Data	TEP or PAI	Partially	00081618	Yes[7,8]	18 Months[5]

TABLE A

GENERIC DATA REQUIREMENTS FOR OXAMYL

Data Requirement	Test Substance	Does EPA Have Data?	Bibliographic Citation	Must Additional Data Be Submitted?	Timeframe for Submission[1]
§158.125 Residue Chemistry (cont'd)					
171-4 - Magnitude of the Residue - Crop field trials					
- Root and tuber vegetables group[9]					
o Carrots	TEP	Partially	00113339	Yes[10]	18 Months[5]
o Ginger	TEP	No		Yes[11]	18 Months[5]
o Potatoes	TEP, EP	Partially	00040607, 00113339, 00113370	Yes[12,13]	18 Months[5,43]
o Sweet potato		Yes	00113339	No	
- Bulb Vegetables Group[14]					
o Garlic		No		No[15]	
o Onion	TEP	No		Yes[16,17]	18 Months[5]
- Leafy Vegetables Group[18]					
o Celery	TEP	Partially	0037130, 0061648, 0113410, 0147614	Yes[19]	18 Months[5]

TABLE A

GENERIC DATA REQUIREMENTS FOR OXAMYL

Data Requirement	Test Substance	Does EPA Have Data?	Bibliographic Citation	Must Additional Data Be Submitted?	Timeframe for Submission[1]/
§158.125 Residue Chemistry (cont'd)					
171-4 - Magnitude of the Residue (cont'd)					
- Crop field trials					
- Legume Vegetables Group[20]/					
o Soybeans	EP	Partially	00030920	Yes[21]/	24 Months[5]/
- Foliage of the Legume Vegetable Group[22]/					
o Soybean straw		Yes	00030920	No	
- Fruiting Vegetables Group[23]/					
o Eggplant		Yes	00081618	No	
o Peppers		Yes	00081618, 00113387, 00138996, 00145315	No	
o Tomatoes	TEP, EP	Partially	00040603, 00048060, 00084889, 00113419	Yes[24]/	24 Months[5]/
- Cucurbit Vegetables Group[25]/					
o Cantaloupe	EP	Yes	00143312	No	
o Cucumbers	EP	Yes	00143312	No	

TABLE A

GENERIC DATA REQUIREMENTS FOR OXAMYL

Data Requirement	Test Substance	Does EPA Have Data?	Bibliographic Citation	Must Additional Data Be Submitted?	Timeframe for Submission[1]
§158.125 Residue Chemistry (cont'd)					
171-4 - Magnitude of the Residue (cont'd)					
- Crop field trials					
- Cucurbit Vegetables Group[25] (cont'd)					
o Honeydew melon		Yes	00143312	No	
o Pumpkins	EP	No		Yes[26]	6 Months
o Summer squash		Partially	00143312	No[27]	
o Watermelon		Yes.	00143312	No	
o Winter squash		Yes	00143312	No	
- Citrus Fruits Group	EP, TEP	Partially	00113343	Yes[28,29]	18 Months[5,43]
- Pome Fruits Group[30]					
o Apples	EP	Yes	00067234, 00113373	No	
o Pears		Partially	00063016	No[31]	
- Miscellaneous Commodities					
o Bananas	EP	Partially	00113389, 00129354, 00142126	Yes[32]	6 Months

TABLE A

GENERIC DATA REQUIREMENTS FOR OXAMYL

Data Requirement	Test Substance	Does EPA Have Data?	Bibliographic Citation	Must Additional Data Be Submitted?	Timeframe for Submission[1]/
§158.125 Residue Chemistry (cont'd)					
171-4 - Magnitude of the Residue (cont'd)					
- Crop field trials					
- Miscellaneous Commodities (cont'd)					
o Cottonseed	TEP, EP	Partially	00113341	Yes[33,34]/	24 Months[5,43]/
o Mint	EP	Yes	00126690	No	
o Peanuts	TEP	Partially	00083522, 00113357	Yes[35,36]/	24 Months[5,43]/
o Pineapples	TEP, EP	Partially	00113380	Yes[37,38]/	18 Months[5,43]/
o Tobacco	TEP	No		Yes[39,40]/	18 Months[5,43]/
- Nonbearing Fruits	TEP	No		Yes[41]/	24 Months[5]/
- Meat/Milk/Poultry/Eggs		Partially	00039513, 00040592, 00083524, 00113376	Reserved[42]/	

TABLE A

GENERIC DATA REQUIREMENTS FOR OXAMYL

Footnotes:

§158.125 Residue Chemistry

1/ Data must be submitted within the indicated timeframe, based on the date of this Guidance Document.

2/ Refer to Product Chemistry Data Requirement tables.

3/ Studies of the metabolism of [^{14}C]oxamyl in ruminants and poultry. Animals must be dosed for at least 3 days at a level sufficient to make residue identification and quantification possible. Milk and eggs must be collected twice daily during the dosing period, and animals must be sacrificed within 24 hours of the final dose. The distribution and identity of residues must be determined in milk, liver, kidney, muscle, and fat of ruminants, and in eggs, liver, kidney, muscle, and fat of poultry.

4/ Samples from studies requested in footnote 3 must be analyzed using current enforcement methods to determine the usefulness of these methods for analysis of animal commodities.

5/ First Progress Report due 8 months after receipt of this Standard. Interim Reports are due semiannually thereafter.

6/ If the animal metabolism data required in the section entitled, "Nature of the Residue in Animals" reveal additional metabolites of toxicological concern or the Toxicology Branch determines that any plant metabolites must be included in the tolerance definition, additional analytical methods and validation data may be required.

7/ The storage intervals and conditions of samples used to support all established tolerances for residues must be submitted. These data must be accompanied by data depicting the percent decline in residues at the times and under the conditions specified. (No additional stability studies are required for plant commodities stored frozen for up to 12 months.) On receipt of these data, the adequacy of the aforementioned tolerances will be reevaluated.

8/ All residue data requested in this Standard must be accompanied by data depicting the duration and conditions of storage of samples analyzed. These data must be accompanied by data depicting the stability of residues under the conditions and for the time intervals specified, with the exception of plant commodities stored frozen for up to 12 months. For laboratory tests using fortified samples, the pure active ingredient must be used. If field-weathered samples are used, the test substance must be a TEP.

TABLE A

GENERIC DATA REQUIREMENTS FOR OXAMYL

Footnotes:

§158.125 Residue Chemistry (cont'd)

9/ If the registrant wishes to propose a crop group tolerance, use directions must be proposed and residue data submitted for the additional representative crops radish and sugar beet, in addition to the data required to support established tolerances for residues in or on carrot and potato.

10/ Data depicting residues of oxamyl in or on carrots following the maximum seasonal treatment regime: the 2 lb/gal SC/L or 10% G formulation preplant incorporated at 8 lb/ai/A and at-plant in-furrow at 4 lb/ai/A followed by three foliar applications of the 2 lb/gal SC/L made at 2-week intervals at 1 lb/ai/A. Samples must be collected at the 14-day PHI. Tests must be conducted in MI. Alternatively, the registrant may elect to cancel this use permitted under EPA SLN No. MI-820022.

11/ Data depicting residues of oxamyl in or on ginger following separate full-season treatment regimes with the 2 lb/gal SC/L formulation: (i) a 4 lb/ai/A preplant incorporated (PPI) soil treatment followed by two foliar treatments, the first at 4 weeks postplanting and the second 3 weeks later; and (ii) soil applications at 4 lb/ai/A by drip irrigation emitters at 1 week postplanting and repeated at 14-day intervals until 30 days prior to harvest. Tests must be conducted in HI. The registrant must specify a maximum seasonal rate or number of applications for the drip irrigation use which must be reflected in the submitted data.

12/ Data depicting residues of oxamyl in or on potatoes following a full-season treatment regime, including multiple foliar applications and soil applications (in-furrow and preplant, in separate tests). The 2 lb/gal SC/L or 10% G formulation must be applied in-furrow at 4 lb/ai/A and, in separate tests, band/broadcast preplant incorporated at 8 lb/ai/A within 1 week of planting. The SC/L must be applied in a volume of at least 20 gal/A. Foliar applications of the 2 lb/gal SC/L must be made at 1 lb/ai/A and repeated at 5-day intervals. Samples must be collected 7 days after the final application. The registrant must specify a maximum seasonal rate or number of applications for foliar treatments which must be reflected in the submitted data. Tests must be conducted in ID(24%), WI(6%), ND(5.7%), CO(5%), and ME(6%) which collectively represented ca. 77% of 1984 U.S. potato production if ID represents OR(6%) and WA(16%) and WI represents MI(4%) and MN(4.5%) (Agricultural Statistics, 1985, p. 164).

13/ Data depicting residues in wet and in dried potato peels, potato granules, and chips from potatoes bearing measurable weathered residues of oxamyl. Should residues concentrate in any of these commodities, appropriate food or feed additive tolerances must be proposed.

TABLE A

GENERIC DATA REQUIREMENTS FOR OXAMYL

Footnotes:

§158.125 Residue Chemistry (cont'd)

14/ If the registrant wishes to propose a crop group tolerance, data depicting residues of oxamyl in or on the representative group member onion to support the established tolerance must be submitted along with data depicting oxamyl residues in or on garlic following maximum seasonal use regimes with the 2 lb/gal SC/L formulation: (i) four applications in CA tests at 2 lb/ai/A, one at-planting in-furrow and three postemergent treatments via irrigation water (sprinkler or ditch) or as 1- to 2-inch band treatments to the soil surface at the base of the plant; and (ii) an in-furrow band or drench application at 4 lb/ai/A followed by three postemergent bands (6- to 8-inch) or broadcast treatments at the same rate in OR (OR-810033). In OR, samples must be collected at the 14-day PHI. For CA, the registrant must propose a PHI which must be supported by the data (EPA SLN No. CA-820068).

15/ No data are required for garlic because data required for onions (see footnotes 16 and 17) will be translated to garlic. It should be noted, however, that translated data may not be used to support a crop group tolerance.

16/ Data depicting oxamyl residues in or on onions following: (i) four applications in CA tests at 2 lb/ai/A, one at-planting in-furrow and three postemergent treatments via irrigation water (sprinkler or ditch) or as 1- to 2-inch band treatments to the soil surface at the base of the plant (CA-820068); and (ii) an in-furrow band or drench application at 4 lb/ai/A followed by three postemergent band (6-8 inch) or broadcast treatments made at 14-day intervals at the same rate in OR (OR-810033). In OR, samples must be collected at the 14-day PHI. For CA, the registrant must propose a PHI which must be supported by the data (EPA SLN No. CA-820068). If the registrant chooses not to support the OR-810033 or CA-820068 label, the MI-840005 label must be supported (one in-furrow application at 2 lb/ai/A plus multiple postemergent applications at 0.25 lb/ai/A at 14-day intervals until 14 days prior to harvest). If the registrant chooses not to support the MI-840005 label, the ID-830019, OR-830025, TX-810046, and WA-830008 labels must be supported (multiple postemergent applications at 0.25 lb/ai/A at 14-day intervals until 14 days prior to harvest with tests conducted in ID and TX). The registrant must specify a maximum seasonal rate or number of postemergent applications which must be reflected by the data.

17/ The registrant must amend the 24(c) labeling for EPA SLN No. NM-810021 to specify an upper limit for treatment and submit supporting data (unless the registrant supports CA-820068 or OR-810033 or the upper limit is $\leq$ 0.25 lb/ai/A - see data gap above); and EPA SLN Nos. OR-810033 and CA-820068 to include restrictions on harvesting onion tops. (Alternatively, a tolerance must be proposed and appropriate supporting residue data submitted reflecting residues of oxamyl in or on green onions resulting from these uses.)

TABLE A

GENERIC DATA REQUIREMENTS FOR OXAMYL

Footnotes:

§158.125 Residue Chemistry (cont'd)

18/ If the registrant wishes to propose a crop group tolerance, use directions must be proposed, and appropriate supporting residue data submitted for additional representative group members lettuce and spinach. Also, additional required data to support the established tolerance for residues of oxamyl in or on the representative crop group member celery must be submitted.

19/ Data reflecting residues in or on untrimmed celery 14 days after the last of several foliar applications at 5-day intervals of the 2 lb/gal SC/L formulation at 1 lb/ai/A. Tests must be conducted in FL to support SLN No. FL-760019, the registered use most likely to result in the highest residues on celery. The PHI's for trimmed celery must be deleted from the label since Agency policy is to set tolerances on and require data for untrimmed celery. Also, the registrant must specify a maximum number of applications/crop or a maximum seasonal use rate which must be supported by the data requested above. If the registrant of the FL-760019 label chooses not to support the FL use, registered uses in MI (MI-820014 and MI-770010) must be supported with data reflecting residues resulting from a single preplant broadcast application of the 10% G formulation at 6 lb/ai/A. The granules should be soil-incorporated to a depth of 4 to 6 inches. Following this preplant application, three foliar applications of the 2 lb/gal SC/L formulation at 1 lb/ai/A/application must be made at 2-week intervals to transplanted stock. Samples of untrimmed celery should be harvested 14 days after the final application. Tests must be conducted in MI. If the registrant does not wish to support the use permitted under EPA SLN No. MI-820014 but does wish to support use under MI-770010 or PA-800039, the above data are required from either PA or MI with the exception that the preplant application must be made at 4 lb/ai/A with the 2 lb/gal SC/L formulation.

20/ If the registrant wishes to propose a crop group tolerance, use directions must be proposed and appropriate supporting residue data submitted for the representative group members succulent and dry beans and succulent and dry peas.

21/ Data depicting residues in grain dust, meal, hulls, soapstock, and crude and refined oils processed from soybeans bearing measurable, weathered residues. Should residues concentrate in any of these processed commodities, appropriate food/feed additive tolerances must be proposed. It may be necessary to apply exaggerated rates to obtain measurable residues in the raw agricultural commodities.

TABLE A

GENERIC DATA REQUIREMENTS FOR OXAMYL

Footnotes:

§158.125 Residue Chemistry (cont'd)

22/ If the registrant wishes to propose a crop group tolerance, use directions must be proposed and supporting residue data submitted for the representative group members bean and pea vines and hay.

23/ At present, the registered uses on members of this group are sufficiently different that establishment of a crop group tolerance is inappropriate.

24/ Data depicting residues in wet and dry pomace, catsup, and juice processed from tomatoes bearing measurable weathered residues. If residues concentrate in any of these processed commodities, then appropriate food/feed additive tolerances must be proposed.

25/ If the registrant wishes to propose a crop group tolerance, data depicting oxamyl residues in or on summer squash harvested 1 day after the last of the following treatments: application of the 2 lb/gal SC/L or 10% G formulation at 4 lb/ai/A as a preplant incorporated broadcast treatment and multiple foliar applications at 7-day intervals of the 2 lb/gal SC/formulation at 1 lb/ai/A. Tests must be conducted in CA(15%), FL(21%), GA(7%), NJ(6%), and TX(7%) which collectively account for 56% of U.S. acreage in squash and represent the major geographic regions of squash production (1982 Census of Agriculture, Vol. 1, Part 51, p. 353). Tests in CA must include, separately, aerial and ground applications.

26/ There are no registered uses of oxamyl on pumpkins. A registrant must propose a use or the tolerance will be revoked. The proposed use on pumpkins must be identical to the registered use on winter squash as the winter squash data are used to support the tolerance (2 ppm) for pumpkins. Otherwise, the proposed use on pumpkins must be accompanied by appropriate residue data to assess the adequacy of the established tolerance.

27/ Although insufficient data are available for summer squash, no additional data are required because the available data for cucumber may be translated to support the established tolerance for residues in/on summer squash. However, it should be noted that translated data may not be used to support a crop group tolerance.

28/ Data depicting oxamyl residues in or on sweet oranges, lemons, and grapefruits harvested 7 days after the last of three foliar treatments at 4 lb/ai/A. Tests must be conducted in TX to support EPA SLN No. TX-800037. Alternatively, the registrant may elect to cancel EPA SLN No. TX-800037.

TABLE A

GENERIC DATA REQUIREMENTS FOR OXAMYL

Footnotes:

§158.125 Residue Chemistry (cont'd)

29/ Data depicting oxamyl residues in molasses and oil processed from citrus fruits bearing measurable, weathered residues. Should residues concentrate in any processed product, an appropriate food/feed additive tolerance must be proposed.

30/ If the registrant wishes to propose a crop group tolerance, data depicting residues of oxamyl in or on pears harvested 14 days following multiple foliar applications of the 2 lb/gal SC/L formulation at 2 lb/ai/A/ application in 100 to 600 gal/A using ground equipment. The registrant must propose a maximum seasonal rate or number of applications. The required data must reflect this proposal. Tests must be conducted in WA(29%), NY(3%), and CA(43%); these States produced approximately 75% of the total 1984 U.S. pear crop (Agricultural Statistics, 1985, p. 214). (Although there is presently no registered use in CA, for a crop group tolerance data would be needed from all geographic production regions.)

31/ Although insufficient data are available for pears, the available apple data may be translated to support the established tolerance for residues in/on pears. It should be noted, however, that translated data may not be used to support a crop group tolerance.

32/ All labels permitting use of oxamyl on bananas grown in countries that export bananas to the United States must be submitted and accompanied by English translations. On receipt of these labels, the adequacy of the established tolerance will be reevaluated.

33/ Data from aerial application tests using the 2 lb/gal SC/L formulation depicting residues of oxamyl in or on cottonseed harvested (i) 21 days after the last of four treatments of 1 lb/ai/A applied in 3 gal water/A (tests conducted in AZ and CA); and (ii) 14 days after the last application of several at 0.25 lb/ai/A applied, in separate tests, in 2 gal water/A and 0.375 gal refined vegetable oil/A (tests conducted in TX). The registrant must amend EPA SLN Nos. TX-840010 and TX-820005 to specify a maximum seasonal rate or number of applications which must be reflected in the data submitted.

34/ Data from a processing study depicting oxamyl residues in hulls, soapstock, crude oil, and refined oil processed from cottonseed bearing measurable, weathered residues. Processing procedures, including heating temperatures and times, must be clearly representative of those in current use for commercial processing.

TABLE A

GENERIC DATA REQUIREMENTS FOR OXAMYL

Footnotes:

§158.125 Residue Chemistry (cont'd)

35/ Data depicting residues in or on peanut vines and hay harvested after a foliar application of the 2 lb/gal SC/L formulation at 1 lb/ai/A made 6 weeks after emergence and preceded by a foliar application 3 weeks earlier at the same rate, and an at-plant soil application at 3 lb/ai/A. Samples must be collected shortly after the second foliar treatment or at a PHI (hay) and pregrazing interval (vines) to be specified by the registrant. Tests must be conducted in GA(49%), FL(6%), NC(10%), and TX(8.5%) which together in 1984 produced 74% of peanuts grown in the United States and account for all major peanut production areas (Agricultural Statistics, 1985. p. 121). As an alternative to submission of these data, the registrant may restrict grazing and feeding of vines and hay and request revocation of these tolerances.

36/ Data depicting residues of oxamyl in the processed products meal, crude and refined oil, and soapstock from peanuts bearing measurable, weathered residues. Should residues concentrate in any processed product, food/feed additive tolerances must be proposed.

37/ Data depicting oxamyl residues in or on pineapple forage harvested immediately after the last application of the following treatment schedule (using the 2 lb/gal SC/L formulation): 48 lb/ai/A cumulative to the plant crop including 8 lb/ai/A as a broadcast soil application 1 week after planting followed by foliar applications at 4 lb/ai/A made at 2- to 4-week intervals. Tests must be conducted in HI where ca. 100% of 1982 U.S. pineapples were produced (1982 Census of Agriculture, Vol. 1, Part 51, p. 383). Alternatively, the registrant may impose a 14-day pregrazing restriction.

38/ Data depicting residues of oxamyl in juice processed from pineapples bearing measurable, weathered residues. If the data indicate potential for residue concentration, a food additive tolerance must be proposed.

39/ Data depicting residues of oxamyl in or on green, freshly harvested tobacco following preplant incorporated (PPI), transplant water, and two foliar treatments at 6 lb/ai/A, 0.5 lb/ai/A, and 1 lb/ai/A, respectively. Tobacco plants must be transplanted into treated soil within 1 week of PPI application. Two foliar applications of the SC/L formulation at 1 lb/ai/A with a suitable spreader sticker must be made to tobacco, the first within 2 weeks of transplanting and the second 2 to 3 weeks later.

TABLE A

GENERIC DATA REQUIREMENTS FOR OXAMYL

Footnotes:

§158.125 Residue Chemistry (cont'd)

40/ If oxamyl residues of ≥ 0.1 ppm are detected in or on green, freshly harvested tobacco, data depicting residues in or on dried or cured tobacco will be required. If residues in or on dried or cured tobacco are ≥ 0.1 ppm, pyrolysis products derived from the active ingredient must be characterized and the level of the residue in smoke must be quantified. ([^{14}C]Oxamyl must be used for identification of pyrolysis products.)

41/ Data depicting residues of oxamyl in or on fruit from cherry, peach, or plum trees and strawberry plants treated with the 10% G formulation at 20 lb/ai/A postplant and at 2 lb/ai/200 gal/A with a spreader sticker in foliar applications. Fruit must be harvested 1 year following the last treatment. Should residues be detected in or on fruit following oxamyl treatment in a nonbearing year, tolerances must be proposed.

42/ Presently, the nature of the residue in animals is not adequately understood. On receipt of the requested animal metabolism studies, the need for the nature of tolerances for residues in animal commodities will be determined and the need for additional feeding studies evaluated.

43/ The timeframe for the submission of processing studies is 24 months.

TABLE B
PRODUCT SPECIFIC DATA REQUIREMENTS FOR MANUFACTURING-USE PRODUCTS CONTAINING OXAMYL

Data Requirement	Test Substance	Does EPA Have Data?1/	Bibliographic Citation 1/	Must Additional Data be Submitted?	Timeframe for Submission2/
58.120 Product Chemistry					
Product Identity and Composition					
61-1 - Product Identity and Disclosure of Ingredients	MP			Yes	6 months
61-2 - Description of Beginning Materials and Manufacturing Process	MP			Yes	6 Months
61-3 - Discussion of Formation of Impurities	MP			Yes	6 Months
Analysis and Certification of Product Ingredients					
62-1 - Preliminary Analysis	MP			Yes	12 Months
62-2 - Certification of Limits	MP			Yes	12 Months
62-3 - Analytical Methods to Verify Certified Limit	MP			Yes	12 Months
Physical and Chemical Characteristics					
63-2 - Color	MP			Yes	6 Months
63-3 - Physical State	MP			Yes	6 Months
63-4 - Odor	MP			Yes	6 Months

TABLE B
PRODUCT SPECIFIC DATA REQUIREMENTS FOR MANUFACTURING-USE PRODUCTS CONTAINING OXAMYL

Data Requirement	Test Substance	Does EPA Have Data?1/	Bibliographic Citation 1/	Must Additional Data be Submitted?	Timeframe for Submission2/
158.120 Product Chemistry(continued)					
Physical and Chemical Characteristics (continued)					
63-7 - Density, Bulk Density, or Specific Gravity	MP			Yes	6 Months
63-12 - pH	MP			Yes	6 Months
63-14 - Oxidizing or Reducing Action	MP			Yes	6 Months
63-15 - Flammability	MP			Yes	6 Months
63-16 - Explodability	MP			Yes	6 Months
63-17 - Storage Stability	MP			Yes	15 Months
63-18 - Viscosity	MP			Yes	6 Months
63-19 - Miscibility	MP			Yes	6 Months
63-20 - Corrosion Characteristics	MP			Yes	15 Months

1/ Although product chemistry data may have been submitted in the past, the Agency has determined that these data must be resubmitted for each manufacturing-use product. New requirements have been introduced and previously submitted data must be updated. Therefore, bibliographic citations for the old data are not applicable.
2/ Due dates refer to the number of months following receipt of this Registration Standard by the registrant, unless otherwise indicated.
3/ Formulation intermediates are also included in the category of manufacturing-use products.

TABLE B
PRODUCT SPECIFIC DATA REQUIREMENTS FOR MANUFACTURING-USE PRODUCTS CONTAINING OXAMYL

Data Requirement	Test Substance	Use Patterns	Does EPA Have Data?	Bibliographic Citation	Must Additional Data be Submitted?	Timeframe for Submission1
158.135 Toxicology						
ACUTE TESTING:						
81-1 - Acute Oral Toxicity - Rat	MP	ABEF	No		Yes	9 Months
81-2 - Acute Dermal Toxicity - Rabbit	MP	ABEF	No		Yes	9 Months
81-3 - Acute Inhalation Toxicity - Rat	MP	ABEF	No		Yes	9 Months
81-4 - Eye Irritation-Rabbit	MP	ABEF	No		Yes	9 Months
81-5 - Dermal Irritation-Rabbit	MP	ABEF	No		Yes	9 Months
81-6 - Dermal Sensitization-Guinea Pig	MP	ABEF	No		Yes	9 Months

1/ Due dates refer to the number of months following receipt of this Registration Standard by the registrant, unless otherwise indicated.

TABLE C
PRODUCT SPECIFIC DATA REQUIREMENTS FOR END-USE PRODUCTS CONTAINING OXAMYL

Guideline Citation and Name of Test	Test Substance	Use Patterns	Does EPA Have Data?1/	Bibliographic Citation1/	Must Additional Data be Submitted?	Timeframe for Submission2/
158.120 - Product Chemistry						
Product Identity:						
61-1 - Product Identity and Disclosure of Ingredients	EP	ALL			Yes	6 Months
61-2 - Description of Beginning Materials and Manufacturing Process	EP	ALL			Yes	6 Months
61-3 - Discussion of Formation of Impurities	EP	ALL			Yes	6 Months
Analysis and Certification of Product Ingredients						
62-1 - Preliminary Analysis	EP	ALL			Yes	12 Months
62-1 - Certification of Limits	EP	ALL			Yes	6 Months
62-3 - Analytical Methods to Verify Certified Limit	EP	ALL			Yes	6 Months
Physical and Chemical Characteristics						
63-2 - Color	EP	ALL			Yes	6 Months
63-3 - Physical State	EP	ALL			Yes	6 Months
63-4 - Odor	EP	ALL			Yes	6 Months
63-7 - Density, Bulk Density, or Specific Gravity	EP	ALL			Yes	6 Months

TABLE C
PRODUCT SPECIFIC DATA REQUIREMENTS FOR END-USE PRODUCTS CONTAINING OXAMYL

Guideline Citation and Name of Test	Test Substance	Use Patterns	Does EPA Have Data?1/	Bibliographic Citation1/	Must Additional Data be Submitted?	Timeframe for Submission2/
158.120 - Product Chemistry(continued)						
Physical and Chemical Characteristics(continued)						
63-12 - pH	EP	ALL			Yes	6 Months
63-14 - Oxidizing or Reducing Action	EP	ALL			Yes	6 Months
63-15 - Flammability	EP	ALL			Yes	6 Months
63-16 - Explodability	EP	ALL			Yes	6 Months
63-17 - Storage Stability	EP	ALL			Yes	12 Months
63-18 - Viscosity	EP	ALL			Yes	6 Months
63-19 - Miscibility	EP	ALL			Yes	6 Months
63-20 - Corrosion Characteristics	EP	ALL			Yes	6 Months
63-21 - Dielectric Breakdown Voltage	EP	ALL			Yes	6 Months
Other Requirements:						
64-1 Submittal of Samples	EP,TGAI,PAI	ALL			Reserved3/	

1/ Although product chemistry data may have been submitted in the past, the Agency has determined that these data must be resubmitted for each pesticide. New requirements have been introduced and previously submitted data must be updated. Therefore, bibliographic citations for the old data are not applicable.
2/ Due dates refer to the number of months following receipt of this Registration Standard by the registrant, unless otherwise indicated.
3/ If samples are needed, the Agency will request them.

TABLE C
GENERIC DATA REQUIREMENTS FOR OXAMYL

Data Requirement	Test Substance	Use Patterns	Does EPA Have Data?	Bibliographic Citation	Must Additional Data be Submitted?	Timeframe for Submission
158.135 Toxicology						
ACUTE TESTING:						
81-1 - Acute Oral Toxicity - Rat	10G	ABEFHI	No		Yes[1]	9 Months
81-2 - Acute Dermal Toxicity - Rabbit	10G	ABEFHI	No		Yes[1]	9 Months
81-3 - Acute Inhalation Toxicity - Rat	10G	ABEFHI	No		Yes[1]	9 Months

1/ These data are required only if the Toxicity Category I and Restricted Use Classification are challenged by the registrant. These data will be waived if the registrant elects to restrict the product and utilize Toxicity Category I labeling.

APPENDIX II

LABELING APPENDICES

LABEL CONTENTS

40 CFR 162.10 requires that certain specific labeling statements appear at certain locations on the label. This is referred to as format labeling. Specific label items listed below are keyed to the table at the end of this Appendix.

Item 1. PRODUCT NAME - The name, brand or trademark is required to be located on the front panel, preferably centered in the upper part of the panel. The name of a product will not be accepted if it is false or misleading.

Item 2. COMPANY NAME AND ADDRESS - The name and address of the registrant or distributor is required on the label. The name and address should preferably be located at the bottom of the front panel or at the end of the label text.

Item 3. NET CONTENTS - A net contents statement is required on all labels or on the container of the pesticide. The preferred location is the bottom of the front panel immediately above the company name and address, or at the end of the label text. The net contents must be expressed in the largest suitable unit, e.g., "1 pound 10 ounces" rather than "26 ounces." In addition to English units, net contents may be expressed in metric units. [40 CFR 162.10(d)]

Item 4. EPA REGISTRATION NUMBER - The registration number assigned to the pesticide product must appear on the label, preceded by the phrase "EPA Registration No.," or "EPA Reg. No." The registration number must be set in type of a size and style similar to other print on that part of the label on which it appears and must run parallel to it. The registration number and the required identifying phrase must not appear in such a manner as to suggest or imply recommendation or endorsement of the product by the Agency. [40 CFR 162.10(e)]

Item 5. EPA ESTABLISHMENT NUMBER - The EPA establishment number, preceded by the phrase "EPA Est." is the final establishment at which the product was produced, and may appear in any suitable location on the label or immediate container. It must also appear on the wrapper or outside container of the package if the EPA establishment number on the immediate container cannot be clearly read through such wrapper or container. [40 CFR 162.10(f)]

Item 6A. INGREDIENTS STATEMENT - An ingredients statement is required on the front panel. The ingredients statement must contain the name and percentage by weight of each active ingredient and the total percentage by weight of all inert ingredients. The preferred location is immediately below the product name. The ingredients statement must run parallel with, and be clearly distinguished from, other text on the panel. It must not be placed in the body of other text. [40 CFR 162.10(g)]

Item 6B. POUNDS PER GALLON STATEMENT - For liquid agricultural formulations, the pounds per gallon of active ingredient must be indicated on the label.

Item 7. FRONT LABEL PRECAUTIONARY STATEMENTS - Front panel precautionary statements must be grouped together, preferably within a block outline. The table below shows the minimum type size requirements for various size labels.

Size of Label on Front Panel in Square Inches	Signal Word Minimum Type Size All Capitals	"Keep Out of Reach of Children" Minimum Type Size
5 and under	6 point	6 point
above 5 to 10	10 point	6 point
above 10 to 15	12 point	8 point
above 15 to 30	14 point	10 point
over 30	18 point	12 point

Item 7A. CHILD HAZARD WARNING STATEMENT - The statement KEEP OUT OF REACH OF CHILDREN must be located on the front panel above the signal word except where contact with children during distribution or use is unlikely. [40 CFR 162.10(h)(1)(ii)]

Item 7B. SIGNAL WORD - The signal word (DANGER, WARNING, or CAUTION) is required on the front panel immediately below the child hazard warning statement. [40 CFR 162.10 (h)(1)(i)]

Item 7C. SKULL & CROSSBONES AND WORD "POISON" - On products assigned a toxicity Category I on the basis of oral, dermal, or inhalation toxicity, the word "Poison" shall appear on the label in red on a background of distinctly contrasting color and the skull and crossbones shall appear in immediate proximity to the word POISON. [40 CFR 162.10(h)(1)(i)]

Item 7D. STATEMENT OF PRACTICAL TREATMENT - A statement of practical treatment (first aid or other) shall appear on the label of pesticide products in toxicity Categories I, II, and III. [40 CFR 162.10(h)(1)(iii)]

Item 7E. REFERRAL STATEMENT - The statement "See Side(or Back) Panel for Additional Precautionary Statements" is required on the front panel for all products, unless all required precautionary statements appear on the front panel. [40 CFR 162.10(h)(1)(iii)]

Item 8. SIDE/BACK PANEL PRECAUTIONARY LABELING - The precautionary statements listed below must appear together on the label under the heading "PRECAUTIONARY STATEMENTS." The preferred location is at the top of the side or back panel preceding the directions for use, and it is preferred that these statements be surrounded by a block outline. Each of the three hazard warning statements must be headed by the appropriate hazard title. [40 CFR 162.10(h)(2)].

Item 8A. HAZARD TO HUMANS AND DOMESTIC ANIMALS - Where a hazard exists to humans or domestic animals, precautionary statements are required indicating the particular hazard, the route(s) of exposure and the precautions to be taken to avoid accident, injury or damage. [40 CFR 162.10(h)(2)(i)]

Item 8B. ENVIRONMENTAL HAZARD - Where a hazard exists to non-target organisms excluding humans and domestic animals, precautionary statements are required stating the nature of the hazard and the appropriate precautions to avoid potential accident, injury, or damage. [40 CFR 162.10(h)(2)(ii)]

Item 8C. PHYSICAL OR CHEMICAL HAZARD - FLAMMABILITY - Precautionary statements relating to flammability of a product are required to appear on the label if it meets the criteria in the PHYS/CHEM Labeling Appendix. The requirement is based on the results of the flashpoint determinations and flame extension tests required to be submitted for all products. These statements are to be located in the side/back panel precautionary statements section, preceded by the heading "Physical/Chemical Hazards." Note that no signal word is used in conjunction with the flammability statements.

Item 9A. RESTRICTED USE CLASSIFICATION - FIFRA sec. 3(d) requires that all pesticide formulations/uses be classified for either general or restricted use. Products classified for restricted use may be limited to use by certified applicators or persons under their direct supervision (or may be subject to other restrictions that may be imposed by regulation).

In the Registration Standard, the Agency has (1) indicated certain formulations/uses are to be restricted (Section IV indicates why the product has been classified for restricted use); or (2) reserved any classification decision until appropriate data are submitted.

The Regulatory Position and Rationale states whether products containing this active ingredient are classified for restricted use. If they are restricted the draft label(s) submitted to the Agency as part of your application must reflect this determination (see below).

If you do not believe that your product should be classified for restricted use, you must submit any information and rationale with your application for reregistration. During the Agency's review of your application, your proposed classification determination will be evaluated in accordance with the provisions of 40 CFR 162.11(c). You will be notified of the Agency's classification decision.

Classification Labeling Requirements

If your product has been classified for restricted use, the following label requirements apply:

1. All uses restricted.

a. The statement "Restricted Use Pesticide" must appear at the top of the front panel of the label. The statement must be set in type of the same minimum size as required for human hazard signal word (see table in 40 CFR 162.10(h)(1)(iv)

b. Directly below this statement on the front panel, a summary statement of the terms of restriction must appear (including the reasons for restriction if specified in Section I). If use is restricted to certified applicators, the following statement is required: "For retail sale to and use only by Certified Applicators or persons under their direct supervision and only for those uses covered by the Certified Applicator's Certification."

2. Some but not all uses restricted. If the Regulatory Position and Rationale states that some uses are classified for restricted use, and some are unclassified, several courses of action are available:

a. You may label the product for Restricted use. If you do so, you may include on the label uses that are unrestricted, but you may not distinguish them on the label as being unrestricted.

b. You may delete all restricted uses from your label and submit draft labeling bearing only unrestricted uses.

c. You may "split" your registration, i.e., register two separate products with identical formulations, one bearing only unrestricted uses, and the other bearing restricted uses. To do so, submit two applications for reregistration, each containing all forms and necessary labels. Both applications should be submitted simultaneously. Note that the products will be assigned separate registration numbers.

Item 9B. MISUSE STATEMENT - All products must bear the misuse statement, "It is a violation of Federal law to use this product in a manner inconsistent with its labeling." This statement appears at the beginning of the directions for use, directly beneath the heading of that section.

Item 10A. REENTRY STATEMENT - If a reentry interval has been established by the Agency, it must be included on the label. Additional worker protection statements may be required in accordance with PR Notice 83-2, March 29, 1983.

Item 10B. STORAGE AND DISPOSAL BLOCK - All labels are required to bear storage and disposal statements. These statements are developed for specific containers, sizes, and chemical content. These instructions must be grouped and appear under the heading "Storage and Disposal" in the directions for use. This heading must be set in the same type sizes as required for the child hazard warning. Refer to Appendix II, STOR, PEST/DIS, and CONT/DIS to determine the storage and disposal instructions appropriate for your products.

Item 10C. DIRECTIONS FOR USE - Directions for use must be stated in terms which can be easily read and understood by the average person likely to use or to supervise the use of the pesticide. When followed, directions must be adequate to protect the public from fraud and from personal injury and to prevent unreasonable adverse effects on the environment. [40 CFR 162.10]

COLLATERAL LABELING

Bulletins, leaflets, circulars, brochures, data sheets, flyers, or other written or graphic printed matter which is referred to on the label or which is to accompany the product are termed collateral labeling. Such labeling may not bear claims or representations that differ in substance from those accepted in connection with registration of the product. It should be made part of the response to this notice and submitted for review.

SUMMARY-6

LABELING REQUIREMENTS OF THE FIFRA, AS AMENDED

ITEM	LABEL ELEMENT	APPLICABILITY OF REQUIREMENT	PLACEMENT ON LABEL		COMMENTS
			REQUIRED	PREFERRED	
1	Product name	All products	Front panel	Center front panel	
2	Company name and address	All products	None	Bottom front panel or end of label text	If registrant is not the producer, must be qualified by "Packed for . . .," "Distributed by. . .," etc.
3	Net contents	All products	None	Bottom front panel or end of label text	May be in metric units in addition to U.S. units
4	EPA Reg. No.	All products	None	Front panel	Must be in similar type size and run parallel to other type.
5	EPA Est. No.	All products	None	Front panel, immediately before or following Reg. No.	May appear on the container instead of the label.
6A	Ingredients statement	All products	Front panel	Immediately following product name	Text must run parallel with other text on the panel.
6B	Pounds/gallon statement	Liquid products where dosage given as lbs. ai/unit area	Front panel	Directly below the main ingredients statement	
7	Front panel precautionary statements	All products	Front panel		All front panel precautionary statements must be grouped together, preferably blocked.
7A	Keep Out of Reach of Children (Child hazard warning)	All products	Front panel	Above signal word	Note type size requirements.
7B	Signal word	All products	Front panel	Immediately below child hazard warning	Note type size requirements.

EM	LABEL ELEMENT	APPLICABILITY OF REQUIREMENT	PLACEMENT ON LABEL REQUIRED	PREFERRED	COMMENTS
C	Skull & cross-bones and word POISON (in red)	All products which are Category I based on oral, dermal, or inhalation toxicity	Front panel	Both in close proximity to signal word	
J	Statement of Practical Treatment or First Aid	All products in Categories I, II, and III	Category I: Front panel unless referral statement is used. Others: Grouped with side panel precautionary statements.	Front panel for all.	
	Referral statement	All products where precautionary labeling appears on other than front panel.	Front panel		
J	Side/back panel precautionary statements	All products	None	Top or side of back panel preceding directions for use	Must be grouped under the headings in 8A, 8B, and 8C; preferably blocked.
	Hazards to humans and domestic animals	All products in Categories I, II, and III	None	Same as above	Must be preceded by appropriate signal word.
	Environmental hazards	All products	None	Same as above	Environmental hazards include bee caution where applicable.

ITEM	LABEL ELEMENT	APPLICABILITY OF REQUIREMENT	PLACEMENT ON LABEL REQUIRED	PLACEMENT ON LABEL PREFERRED	COMMENTS
9C	Physical or chemical hazards	All pressurized products, others with flash points under 150°F	None	Same as above	Refer to Appendix II guide PHYS/CHEM
9A	Restricted block	All restricted products	Top center of front panel	Preferably blocked	Includes a statement of the terms of restriction. The words "RESTRICTED USE PESTICIDE" must be same type size as signal word.
9B	Misuse statement	All products	Immediately following heading of directions for use		Required statement is: "It is a violation of Federal law to use this product in a manner inconsistent with its labeling."
10A	Reentry statement	PR Notice 83-2 or as determined by the Agency	In the directions for use	Immediately after misuse statement	
10B	Storage and disposal block	All products	In the directions for use	Immediately before specific directions for use or at the end of directions for use	Must be set apart and clearly distinguishable from from other directions for use. Refer to Appendix II guides STOR, CONT/DIS, and PEST/DIS for further information and required statements.
10C	Directions for use	All products	None	None	May be in metric as well as U.S. units

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS
(& DOMESTIC ANIMALS)

DANGER

ENVIRONMENTAL HAZARDS

PHYSICAL OR CHEMICAL
HAZARDS

DIRECTIONS FOR USE

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

RE-ENTRY STATEMENT
(If Applicable)

STORAGE AND
DISPOSAL

STORAGE

DISPOSAL

CROP:

RESTRICTED USE PESTICIDE

(reason for classifying)

FOR RETAIL SALE TO AND USE ONLY BY CERTIFIED APPLICATORS OR PERSONS UNDER THEIR DIRECT SUPERVISION AND ONLY FOR THOSE USES COVERED BY THE CERTIFIED APPLICATOR'S CERTIFICATION

PRODUCT NAME

ACTIVE INGREDIENT: _____ %

INERT INGREDIENTS: _____ %

TOTAL: 100.00 %

THIS PRODUCT CONTAINS LBS OF PER GALLON

KEEP OUT OF REACH OF CHILDREN

DANGER —POISON

STATEMENT OF PRACTICAL TREATMENT

IF SWALLOWED

IF INHALED

IF ON SKIN

IF IN EYES

SEE SIDE PANEL FOR ADDITIONAL PRECAUTIONARY STATEMENTS

MFG BY

TOWN, STATE

ESTABLISHMENT NO.

EPA REGISTRATION NO.

NET CONTENTS

CROP:

CROP:

CROP:

CROP:

CROP:

WARRANTY STATEMENT

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS & DOMESTIC ANIMALS

CAUTION

ENVIRONMENTAL HAZARDS

PHYSICAL OR CHEMICAL HAZARDS

DIRECTIONS FOR USE

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

RE-ENTRY STATEMENT
(If Applicable)

CROP:

CROP:

CROP:

PRODUCT NAME

ACTIVE INGREDIENT: _____ %
INERT INGREDIENTS: _____ %

TOTAL: 100.00 %

THIS PRODUCT CONTAINS LBS OF PER GALLON

KEEP OUT OF REACH OF CHILDREN

CAUTION

STATEMENT OF PRACTICAL TREATMENT

IF SWALLOWED
IF INHALED
IF ON SKIN
IF IN EYES

SEE SIDE PANEL FOR ADDITIONAL PRECAUTIONARY STATEMENTS

MFG BY
TOWN, STATE
ESTABLISHMENT NO.
EPA REGISTRATION NO.

NET CONTENTS

CROP:

CROP:

CROP:

CROP:

STORAGE AND DISPOSAL

STORAGE

DISPOSAL

WARRANTY STATEMENT

cant obtained the data from another firm (identify); applicant copied data from a publication; applicant obtained a copy of the data from EPA).

(d) The applicant shall submit with his application a statement that EPA, in its evaluation of the properties, efficacy, and safety of the formulated end-use product, may not consider any data as supporting the application, except the following data:

(1) The data the applicant has submitted to EPA under paragraph (b) of this section;

(2) Other data pertaining to the safety of the product's active ingredients, rather than to the safety of the end-use product; and

(3) Existing tolerances, food additive regulations, exemptions, and other clearances issued under the Federal Food, Drug, and Cosmetic Act.

(e) If the applicant knows that any item of data he submitted under this section was generated by (or at the expense of) another person who originally submitted the data to EPA (or its predecessor, USDA) on or after January 1, 1970, to support an application for registration, experimental use permit, or amendment adding a new use to an existing registration, or for reregistration (unless the applicant and the original data submitter have reached written agreement on the amount and the terms of payment of any compensation that may be payable under FIFRA section 3(c)(1)(D)(ii) with regard to approval of the application), the applicant shall submit to EPA a statement that he has furnished to each such identified original data submitter:

(1) A notification of the applicant's intent to apply for registration, including the proposed product name;

(2) An offer to pay the person compensation, with regard to the approval of the application, to the extent required by FIFRA sections 3(c)(1)(D) and 3(c)(2)(D);

(3) An identification of the item(s) of data to which the offer applies;

(4) An offer to commence negotiations to ascertain the amount and terms of compensation to be paid; and

(5) The applicant's name, address and telephone number.

(f) If the applicant's product contains any active ingredient other than those that are present solely because of the incorporation into the product, during formulation, of one or more other registered pesticide products purchased from another producer, then the applicant shall also comply with § 162.9-5 as to such active ingredient, and the application shall contain an acknowledgment that for purposes of FIFRA section 3(c)(1)(D) the application relies on (and any resulting registration should be regarded as if it were based on the Administrator's consideration of) the following data:

(1) All data submitted or specifically cited by the applicant in support of the registration; and

(2) Each other item of data in the Agency's files which:

(i) Concerns the properties or effects of any such active ingredient; and

(ii) Is one of the types of data that EPA would require to be submitted for scientific review by EPA if the applicant sought the initial registration under FIFRA Section 3(c)(5) of a product with composition and intended uses identical to those proposed for the applicant's product, under the data requirements in effect on the date EPA approves the applicant's present application.

Secs. 3, 6, and 25 of FIFRA, as amended, 7 U.S.C. 136 *et seq.*)

[44 FR 27952, May 11, 1979]

§ 162.10 Labeling requirements.

(a) *General*—(1) *Contents of the label.* Every pesticide products shall bear a label containing the information specified by the Act and the regulations in this Part. The contents of a label must show clearly and prominently the following:

(i) The name, brand, or trademark under which the product is sold as prescribed in paragraph (b) of this section;

(ii) The name and address of the producer, registrant, or person for whom produced as prescribed in paragraph (c) of this section;

(iii) The net contents as prescribed in paragraph (d) of this section;

(iv) The product registration number as prescribed in paragraph (e) of this section;

(v) The producing establishment number as prescribed in paragraph (f) of this section;

(vi) An ingredient statement as prescribed in paragraph (g) of this section;

(vii) Warning or precautionary statements as prescribed in paragraph (h) of this section;

(viii) The directions for use as prescribed in paragraph (i) of this section; and

(ix) The use classification(s) as prescribed in paragraph (j) of this section.

(2) *Prominence and legibility.* (i) All words, statements, graphic representations, designs or other information required on the labeling by the Act or the regulations in this part must be clearly legible to a person with normal vision, and must be placed with such conspicuousness (as compared with other words, statements, designs, or graphic matter on the labeling) and expressed in such term. . to render it likely to be read and understood by the ordinary individual under customary conditions of purchase and use.

(ii) All required label text must:

(A) Be set in 6-point or larger type;

(B) Appear on a clear contrasting background; and

(C) Not be obscured or crowded.

(3) *Language to be used.* All required label or labeling text shall appear in the English language. However, the Agency may require or the applicant may propose additional text in other languages as is considered necessary to protect the public. When additional text in another language is necessary, all labeling requirements will be applied equally to both the English and other-language versions of the labeling.

(4) *Placement of Label*—(i) *General.* The label shall appear on or be securely attached to the immediate container of the pesticide product. For purposes of this Section, and the misbranding provisions of the Act, "securely attached" shall mean that a label can reasonably be expected to remain affixed during the forreseable wrapper or outside container through which the label cannot be clearly read, the label must also be securely attached to such outside wrapper or container, if it is a part of the package as customarily distributed or sold.

(ii) *Tank cars and other bulk containers*—(A) *Transportation.* While a pesticide product is in transit, the appropriate provisions of 49 CFR Parts 170-189, concerning the transportation of hazardous materials, and specifically those provisions concerning the labeling, marking and placarding of hazardous materials and the vehicles carrying them, define the basic Federal requirements. In addition, when any registered pesticide product is transported in a tank car, tank truck or other mobile or portable bulk container, a copy of the accepted label must be attached to the shipping papers, and left with the consignee at the time of delivery.

(B) *Storage.* When pesticide products are stored in bulk containers, whether mobile or stationary, which remain in the custody of the user, a copy of the label of labeling, including all appropriate directions for use, shall be securely attached to the container in the immediate vicinity of the discharge control valve.

(5) *False or misleading statements.* Pursuant to section 2(q)(1)(A) of the Act, a pesticide or a device declared subject to the Act pursuant to § 162.19, is misbranded if its labeling is false or misleading in any particular including both pesticidal and non-pesticidal claims. Examples of statements or representations in the labeling which constitute misbranding include:

(i) A false or misleading statement concerning the composition of the product;

(ii) A false or misleading statement concerning the effectiveness of the product as a pesticide or device;

(iii) A false or misleading statement about the value of the product for purposes other than as a pesticide or device;

(iv) A false or misleading comparison with other pesticides or devices;

(v) Any statement directly or indi- [illegible] that the pesticide or any agency of the Federal Government;

(vi) The name of a pesticide which contains two or more principal active ingredients if the name suggests one or more but not all such principal active ingredients even though the names of the other ingredients are stated elsewhere in the labeling;

(vii) A true statement used in such a way as to give a false or misleading impression to the purchaser;

(viii) Label disclaimers which negate or detract from labeling statements required under the Act and these regulations;

(ix) Claims as to the safety of the pesticide or its ingredients, including statements such as "safe," "nonpoisonous," "noninjurious," "harmless" or "nontoxic to humans and pets" with or without such a qualifying phrase as "when used as directed"; and

(x) Non numerical and/or comparative statements on the safety of the product, including but not limited to:

(A) "Contains all natural ingredients";

(B) "Among the least toxic chemicals known"

(C) "Pollution approved"

(6) *Final printed labeling.* (i) Except as provided in paragraph (a)(6)(ii) of this section, final printed labeling must be submitted and accepted prior to registration. However, final printed labeling need not be submitted until draft label texts have been provisionally accepted by the Agency.

(ii) Clearly legible reproductions or photo reductions will be accepted for unusual labels such as those silk-screened directly onto glass or metal containers or large bag or drum labels. Such reproductions must be of microfilm reproduction quality.

(b) *Name, brand, or trademark.* (1) The name, brand, or trademark under which the pesticide product is sold shall appear on the front panel of the label.

(2) No name, brand, or trademark may appear on the label which:

(i) Is false or misleading, or

(ii) Has not been approved by the Administrator through registration or supplemental registration as an addi- [illegible]

(c) Name and address of producer, registrant, or person for whom produced. An unqualified name and address given on the label shall be considered as the name and address of the producer. If the registrant's name appears on the label and the registrant is not the producer, or if the name of the person for whom the pesticide was produced appears on the label, it must be qualified by appropriate wording such as "Packed for * * *," "Distributed by * * *," or "Sold by * * *" to show that the name is not that of the producer.

(d) *Net weight or measure of contents.* (1) The net weight or measure of content shall be exclusive of wrappers or other materials and shall be the average content unless explicitly stated as a minimum quantity.

(2) If the pesticide is a liquid, the net content statement shall be in terms of liquid measure at 68 °F (20°C) and shall be expressed in conventional American units of fluid ounces, pints, quarts, and gallons.

(3) If the pesticide is solid or semisolid, viscous or pressurized, or is a mixture of liquid and solid, the net content statement shall be in terms of weight expressed as avoirdupois pounds and ounces

(4) In all cases, net content shall be stated in terms of the largest suitable units, i.e., "1 pound 10 ounces" rather than "26 ounces."

(5) In addition to the required units specified, net content may be expressed in metric units.

(6) Variation above minimum content or around an average is permissible only to the extent that it represents deviation unavoidable in good manufacturing practice. Variation below a stated minimum is not permitted. In no case shall the average content of the packages in a shipment fall below the stated average content.

(e) *Product registration number.* The registration number assigned to the pesticide product at the time of registration shall appear on the label, preceded by the phrase "EPA Registration No.," or the phrase "EPA Reg. No." The registration number shall be set in type of a size and style similar to other print on that part of the label [illegible]

alled to it. The registration number and the required identifying phrase shall not appear in such a manner as to suggest or imply recommendation or endorsement of the product by the Agency.

(f) *Producing establishments registration number.* The producing establishment registration number preceded by the phrase "EPA Est.", of the final establishment at which the product was produced may appear in any suitable location on the label or immediate container. It must appear on the wrapper or outside container of the package if the EPA establishment registration number on the immediate container cannot be clearly read through such wrapper or container.

(g) *Ingredient statement.*—(1) *General.* The label of each pesticide product must bear a statement which contains the name and percentage by weight of each active ingredient, the total percentage by weight of all inert ingredients; and if the pesticide contains arsenic in any form, a statement of the percentages of total and water-soluble arsenic calculated as elemental arsenic. The active ingredients must be designated by the term "active ingredients" and the inert ingredients by the term "inert ingredients," or the singular forms of these terms when appropriate. Both terms shall be in the same type size, be aligned to the same margin and be equally prominent. The statement "Inert ingredients, none" is not required for pesticides which contain 100 percent active ingredients. Unless the ingredient statement is a complete analysis of the pesticide, the term "analysis" shall not be used as a heading for the ingredient statement.

(2) *Position of ingredient statement.* (i) The ingredient statement is normally required on the front panel of the label. If there is an outside container or wrapper through which the ingredient statement cannot be clearly read, the ingredient statement must also appear on such outside container or wrapper. If the size or form of the package makes it impracticable to place the ingredient statement on the front panel of the label, permission may be granted for the ingredient statement to appear elsewhere.

(ii) The text of the ingredient statement must run parallel with other text on the panel on which it appears, and must be clearly distinguishable from and must not be placed in the body of other text.

(3) *Names to be used in ingredient statement.* The name used for each ingredient shall be the accepted common name, if there is one, followed by the chemical name. The common name may be used alone only if it is well known. If no common name has been established, the chemical name alone shall be used. In no case will the use of a trademark or proprietary name be permitted unless such name has been accepted as a common name by the Administrator under the authority of Section 25(c)(6).

(4) *Statements of percentages.* The percentages of ingredients shall be stated in terms of weight-to-weight. The sum of percentages of the active and the inert ingredients shall be 100. Percentages shall not be expressed by a range of values such as "22-25%." If the uses of the pesticide product are expressed as weight of active ingredient per unit area, a statement of the weight of active ingredient per unit volume of the pesticide formulation shall also appear in the ingredient statement.

(5) *Accuracy of stated percentages.* The percentages given shall be as precise as possible reflecting good manufacturing practice. If there may be unavoidable variation between manufacturing batches, the value stated for each active ingredient shall be the lowest percentage which may be present.

(6) *Deterioration.* Pesticides which change in chemical composition significantly must meet the following labeling requirements:

(i) In cases where it is determined that a pesticide formulation changes chemical composition significantly, the product must bear the following statement in a prominent position on the label: "Not for sale or use after [date]."

(ii) The product must meet all label claims up to the expiration time indicated on the label.

(7) *Inert ingredients.* The Administrator may require the name of any inert ingredient(s) to be listed in the ingredient statement if he determines that such ingredient(s) may pose a hazard to man or the environment.

(h) *Warnings and precautionary statements.* Required warnings and precautionary statements concerning the general areas of toxicological hazard including hazard to children, environmental hazard, and physical or chemical hazard fall into two groups; those required on the front panel of the labeling and those which may appear elsewhere. Specific requirements concerning content, placement, type size, and prominence are given below.

(1) *Required front panel statements.* With the exception of the child hazard warning statement, the text required on the front panel of the label is determined by the Toxicity Category of the pesticide. The category is assigned on the basis of the highest hazard shown by any of the indicators in the table below:

Hazard indicators	Toxicity categories			
	I	II	III	IV
Oral LD$_{50}$	Up to and including 50 mg/kg	From 50 thru 500 mg/kg	From 500 thru 5000 mg/kg	Greater than 5000 mg/kg
Inhalation LC$_{50}$	Up to and including 2 mg/liter	From 2 thru 2 mg/liter	From 2 thru 20 mg/liter	Greater than 20 mg/liter
Dermal LD$_{50}$	Up to and including 200 mg/kg	From 200 thru 2000	From 2,000 thru 20,000	Greater than 20,000
Eye effects	Corrosive; corneal opacity not reversible within 7 days.	Corneal opacity reversible within 7 days; irritation persisting for 7 days.	No corneal opacity; irritation reversible within 7 days.	No irritation.
Skin effects	Corrosive	Severe irritation at 72 hours.	Moderate irritation at 72 hours.	Mild or slight irritation at 72 hours.

(i) *Human hazard signal word.*—(A) *Toxicity Category I.* All pesticide products meeting the criteria of Toxicity Category I shall bear on the front panel the signal word "Danger." In addition if the product was assigned to Toxicity Category I on the basis of its oral, inhalation or dermal toxicity (as distinct from skin and eye local effects) the word "Poison" shall appear in red on a background of distinctly contrasting color and the skull and crossbones shall appear in immediate proximity to the word "poison."

(B) *Toxicity Category II.* All pesticide products meeting the criteria of Toxicity Category II shall bear on the front panel the signal word "Warning."

(C) *Toxicity Category III.* All pesticide products meeting the criteria of Toxicity Category III shall bear on the front panel the signal word "Caution."

(D) *Toxicity Category IV.* All pesticide products meeting the criteria of Toxicity Category IV shall bear on the front panel the signal word "Caution."

(E) *Use of signal words.* Use of any signal word(s) associated with a higher Toxicity Category is not permitted except when the Agency determines that such labeling is necessary to prevent unreasonable adverse effects on man or the environment. In no case shall more than one human hazard signal word appear on the front panel of a label.

(ii) *Child hazard warning.* Every pesticide product label shall bear on the front panel the statement "Keep out of reach of children." Only in cases where the likelihood of contact with children during distribution, marketing, storage or use is demonstrated by the applicant to be extremely remote, or if the nature of the pesticide is such that it is approved for use on infants or small children, may the Administrator waive this requirement.

(iii) *Statement of practical treatment.*—(A) *Toxicity Category I.* A statement of practical treatment (first aid or other) shall appear on the front panel of the label of all pesticides falling into Toxicity Category I on the basis of oral, inhalation or dermal toxicity. The Agency may, however, permit reasonable variations in the placement of the statement of practi

cal treatment is some reference such as "See statement of practical treatment on back panel" appears on the front panel near the word "Poison" and the skull and crossbones.

(B) *Other toxicity categories.* The statement of practical treatment is not required on the front panel except as described in paragraph (h)(1)(iii)(A) of this section. The applicant may, however, include such a front panel statement at his option. Statements of practical treatment are, however, required elsewhere on the label in accord with paragraph (h)(2) of this section if they do not appear on the front panel.

(iv) *Placement and prominence.* All the require front panel warning statements shall be grouped together on the label, and shall appear with sufficient prominence relative to other front panel text and graphic material to make them unlikely to be overlooked under customary conditions of purchase and use. The following table shows the minimum type size requirements for the front panel warning statements on various sizes of labels:

Size of label front panel in square inches	Points	
	Required signal word, all capitals	"Keep out of reach of Children"
5 and under	8	8
Above 5 to 10	10	8
Above 10 to 15	12	8
Above 15 to 30	14	10
Over 30	16	12

(2) *Other required warnings and precautionary statements.* The warnings and precautionary statements as required below shall appear together on the label under the general heading "Precautionary Statements" and under appropriate subheadings of "Hazard to Humans and Domestic Animals," "Environmental Hazard" and "Physical or Chemical Hazard."

(i) *Hazard to humans and domestic animals.* (A) Where a hazard exists to humans or domestic animals, precautionary statements are required indicating the particular hazard, the route(s) of exposure and the precautions to be taken to avoid accident, injury or damage. The precautionary paragraph shall be immediately preceded by the appropriate hazard signal word.

(B) The following table depicts typical precautionary statements. These statements must be modified or expanded to reflect specific hazards.

Toxicity category	Precautionary statements by toxicity category	
	Oral, inhalation, or dermal toxicity	Skin and eye local effects
I	Fatal (poisonous) if swallowed. [Inhaled or absorbed through skin]. Do not breathe vapor (dust or spray mist). Do not get in eyes, on skin, or on clothing. [Front panel statement of practical treatment required.]	Corrosive, causes eye and skin damage (or skin irritation). Do not get in eyes, on skin, or on clothing. Wear goggles or face shield and rubber gloves when handling. Harmful or fatal if swallowed. [Appropriate first aid statement required.]
II	May be fatal if swallowed. [Inhaled or absorbed through the skin]. Do not breathe vapors (dust or spray mist). Do not get in eyes, on skin, or on clothing. [Appropriate first aid statements required.]	Causes eye (and skin) irritation. Do not get in eyes, on skin, or on clothing. Harmful if swallowed. [Appropriate first aid statement required.]
III	Harmful if swallowed. [Inhaled or absorbed through the skin]. Avoid breathing vapors (dust or spray mist). Avoid contact with skin (eyes or clothing). [Appropriate first aid statement required.]	Avoid contact with skin, eyes or clothing. In case of contact immediately flush eyes or skin with plenty of water. Get medical attention if irritation persists.
IV	[No precautionary statements required.]	[No precautionary statements required.]

(ii) *Environmental hazards.* Where a hazard exists to non target organisms excluding humans and domestic animals, precautionary statements are required stating the nature of the hazard and the appropriate precautions to avoid potential accident, injury or damage. Examples of the hazard statements and the circumstances under which they are required follow:

(A) If a pesticide intended for outdoor use contains an active ingredient with a mammalian acute oral LD_{50} of

100 or less, the statement "This Pesticide is Toxic to Wildlife" is required.

(B) If a pesticide intended for outdoor use contains an active ingredient with a fish acute LC_{50} of 1 ppm or less, the statement "This Pesticide is Toxic to Fish" is required.

(C) If a pesticide intended for outdoor use contains an active ingredient with an avian acute oral LD_{50} of 100 mg/kg or less, or a subacute dietary LC_{50} of 500 ppm or less, the statement "This Pesticide is Toxic to Wildlife" is required.

(D) If either accident history or field studies demonstrate that use of the pesticide may result in fatality to birds, fish or mammals, the statement "This pesticide is extremely toxic to wildlife (fish)" is required.

(E) For uses involving foliar application to agricultural crops, forests, or shade trees, or for mosquito abatement treatments, pesticides toxic to pollinating insects must bear appropriate label cautions.

(F) For all outdoor uses other than aquatic applications the label must bear the caution "Keep out of lakes, ponds or streams. Do not contaminate water by cleaning of equipment or disposal of wastes."

(iii) *Physical or chemical hazards.* Warning statements on the flammability or explosive characteristics of the pesticide are required as follows:

Flash point	Required text
(A) Pressurized Containers	
Flash point at or below 20° F, if there is a flashback at any valve opening	Extremely flammable. Contents under pressure. Keep away from fire, sparks, and heated surfaces. Do not puncture or incinerate container. Exposure to temperatures above 130° F may cause bursting.
Flash point above 20° F and not over 80° F, or if the flame extension is more than 18 in long at a distance of 6 in from the flame	Flammable. Contents under pressure. Keep away from heat, sparks, and open flame. Do not puncture or incinerate container. Exposure to temperatures above 130° F may cause bursting.
All other pressurized containers	Contents under pressure. Do not use or store near heat or open flame. Do not puncture or incinerate container. Exposure to temperatures above 130° F may cause bursting.
(B) Nonpressurized Containers	
At or below 20° F	Extremely flammable. Keep away from fire, sparks, and heated surfaces.
Above 20° F and not over 80° F	Flammable. Keep away from heat and open flame.
Above 80° F and not over 150° F	Do not use or store near heat or open flame.

(i) *Directions for Use*—(1) *General requirements*—(i) *Adequacy and clarity of directions.* Directions for use must be stated in terms which can be easily read and understood by the average person likely to use or to supervise the use of the pesticide. When followed, directions must be adequate to protect the public from fraud and from personal injury and to prevent unreasonable adverse effects on the environment.

(ii) *Placement of directions for use.* Directions may appear on any portion of the label provided that they are conspicuous enough to be easily read by the user of the pesticide product. Directions for use may appear on printed or graphic matter which accompanies the pesticide provided that:

(A) If required by the Agency, such printed or graphic matter is securely attached to each package of the pesticide, or placed within the outside wrapper or bag;

(B) The label bears a reference to the directions for use in accompanying leaflets or circulars, such as "See directions in the enclosed circular;" and

(C) The Administrator determines that it is not necessary for such directions to appear on the label.

(iii) *Exceptions to requirement for direction for use*—(A) Detailed directions for use may be omitted from labeling of pesticides which are intended for use only by manufacturers of products other than pesticide products in their regular manufacturing processes, provided that:

(*i*) The label clearly shows that the product is intended for use only in manufacturing processes and specifies the type(s) of products involved.

(*2*) Adequate information such as technical data sheets or bulletins, is available to the trade specifying the type of product involved and its proper use in manufacturing processes;

(*3*) The product will not come into the hands of the general public except after incorporation into finished products; and

(*4*) The Administrator determines that such directions are not necessary to prevent unreasonable adverse effects on man or the environment.

(B) Detailed directions for use may be omitted from the labeling of pesticide products for which sale is limited to physicians, veterinarians, or druggists, provided that:

(*1*) The label clearly states that the product is for use only by physicians or veterinarians;

(*2*) The Administrator determines that such directions are not necessary to prevent unreasonable adverse effects on man or the environment; and

(*3*) The product is also a drug and regulated under the provisions of the Federal Food, Drug and Cosmetic Act.

(C) Detailed directions for use may be omitted from the labeling of pesticide products which are intended for use only by formulators in preparing pesticides for sale to the public, provided that:

(*1*) There is information readily available to the formulators on the composition, toxicity, methods of use, applicable restrictions or limitations, and effectiveness of the product for pesticide purposes;

(*2*) The label clearly states that the product is intended for use only in manufacturing, formulating, mixing, or repacking for use as a pesticide and specifies the type(s) of pesticide products involved;

(*3*) The product as finally manufactured, formulated, mixed, or repackaged is registered; and

(*4*) The Administrator determines that such directions are not necessary to prevent unreasonable adverse effects on man or the environment.

(2) *Contents of Directions for Use.* The directions for use shall include the following, under the headings "Directions for Use":

(i) The statement of use classification as prescribed in 162.10(j) immediately under the heading "Directions for Use."

(ii) Immediately below the statement of use classification, the statement "It is a violation of Federal law to use this product in a manner inconsistent with its labeling."

(iii) The site(s) of application, as for example the crops, animals, areas, or objects to be treated.

(iv) The target pest(s) associated with each site.

(v) The dosage rate associated with each site and pest.

(vi) The method of application, including instructions for dilution, if required, and type(s) of application apparatus or equipment required.

(vii) The frequency and timing of applications necessary to obtain effective results without causing unreasonable adverse effects on the environment.

(viii) Specific limitations on reentry to areas where the pesticide has been applied, meeting the requirements concerning reentry provided by 40 CFR Part 170.

(ix) Specific directions concerning the storage and disposal of the pesticide and its container, meeting the requirements of 40 CFR Part 165. These instructions shall be grouped and appear under the heading "Storage and Disposal." This heading must be set in type of the same minimum sizes as required for the child hazard warning (See Table in § 162.10(h)(1)(iv).)

(x) Any limitations or restrictions on use required to prevent unreasonable adverse effects, such as:

(A) Required intervals between application and harvest of food or feed crops.

(B) Rotational crop restrictions.

(C) Warnings as required against use on certain crops, animals, objects, or in or adjacent to certain areas.

(D) [Reserved]

(E) For restricted use pesticides, a statement that the pesticide may be applied under the direct supervision of a certified applicator who is not physically present at the site of application but nonetheless available to the person applying the pesticide, unless the Agency has determined that the pesticide may only be applied under the direct supervision of a certified applicator who is physically present.

(F) Other pertinent information which the Administrator determines to be necessary for the protection of man and the environment.

(*j*) *Statement of Use Classification.* By October 22, 1976, all pesticide products must bear on their labels a statement of use classification as described in paragraphs (j)(1) and (2) of this section. Any pesticide product for which some uses are classified for general use and others for restricted use shall be separately labeled according to the labeling standards set forth in this subsection, and shall be marketed as separate products with different registration numbers, one bearing directions only for general use(s) and the other bearing directions for restricted use(s) except that, if a product has both restricted use(s) and general use(s), both of these uses may appear on a product labeled for restricted use. Such products shall be subject to the provisions of § 162.10(j)(2).

(1) *General Use Classification.* Pesticide products bearing directions for use(s) classified general shall be labeled with the exact words "General Classification" immediately below the heading "Directions for Use." And reference to the general classification that suggests or implies that the general utility of the pesticide extends beyond those purposes and uses contained in the Directions for Use will be considered a false or misleading statement under the statutory definitions of misbranding.

(2) *Restricted Use Classification.* Pesticide products bearing direction for use(s) classified restricted shall bear statements of restricted use classification on the front panel as described below:

(i) *Front panel statement of restricted use classification.* (A) At the top of the front panel of the label, set in type of the same minimum sizes as required for human hazard signal words (see table in § 162.10(h)(1)(iv)), and appearing with sufficient prominence relative to other text and graphic material on the front panel to make it unlik[illegible] be overlooked under customary [illegible] tions of purchase and use, the [illegible] ment "Restricted Use Pesticide" appear.

(B) Directly below this statem[illegible] the front panel, a summary stat[illegible] of the terms of restriction impos[illegible] a precondition to registration [illegible] appear. If use is restricted to cer[illegible] applicators, the following statem[illegible] required: "For retail sale to an[illegible] only by Certified Applicators or [illegible] sons under their direct supervisio[illegible] only for those uses covered by the [illegible] tified Applicator's certification." [illegible] however, other regulatory restrictio[illegible] are imposed, the Administrator w[illegible] define the appropriate wording for th[illegible] terms of restriction by regulation.

(k) Advertising. [Reserved]

[40 FR 28268, July 3, 1975; 40 FR 3212[illegible] Aug. 1, 1975; 40 FR 36871, Aug. 21, 1975, [illegible] amended at 43 FR 6786, Feb. 9, 1978]

§ 162.11 Criteria for determinations of [illegible] reasonable adverse effects.

(a) *Criteria for Issuance of Notice o[illegible] Intent to Deny Registration, Cance[illegible] Registration, or to Hold a Hearing.* (1) *Presumption.* (i) A rebuttable pre[illegible] sumption shall arise that a notice o[illegible] intent to deny registration pursuant t[illegible] section 3(c)(6) of the Act, a notice o[illegible] intent to cancel registration pursuan[illegible] to section 6(b)(1) of the Act, or a[illegible] notice of intent to hold a hearing to determine whether the registration should be cancelled or denied, as appropriate, shall be issued, upon a determination by the Administrator that the pesticide meets or exceeds any of the criteria for risk set forth in paragraph (a)(3) of this section. Upon such determination, the Administrator shall issue notice by certified mail to the applicant or registrant, as the case may be, stating that the applicant or registrant has the opportunity to submit evidence in rebuttal of such presumption in accordance with paragraph (a)(4) of this section. The applicant or registrant shall have forty five (45) days from the date such notice is sent to submit evidence in rebuttal of the presumption; provided, however, that for good cause shown the Administrator may grant an additional sixty

PESTICIDE DISPOSAL INSTRUCTIONS

The label of all products, except those intended solely for domestic use, must bear explicit instructions about pesticide disposal. The statements listed below contain the exact wording that must appear on the label of these products:

1. The labels of all products, except domestic use, must contain the statement, "Do not contaminate water, food, or feed by storage or disposal."

2. Except those products intended solely for domestic use, the labels of all products that contain active ingredients that are Acute Hazardous Wastes or are assigned to Toxicity Category I on the basis of oral or dermal toxicity, or Toxicity Category I or II on the basis of acute inhalation toxicity must bear the following pesticide disposal statement:

> "Pesticide wastes are acutely hazardous. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal Law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance."

3. The labels of all products, except those intended for domestic use, containing active or inert ingredients that are Toxic Hazardous Wastes or meet any of the criteria in 40 CFR 261, Subpart C for a hazardous waste must bear the following pesticide disposal statement:

> "Pesticide wastes are toxic. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal Law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance."

4. Labels for all other products, except those intended for domestic use, must bear the following pesticide disposal statement:

> "Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility."

5. Products intended for domestic use only must bear the following disposal statement: "Securely wrap original container in several layers of newspaper and discard in trash."

PESTICIDE ACTIVE INGREDIENTS THAT ARE ACUTE HAZARDOUS WASTES

I. PESTICIDES ON THE "E" LIST (with RCRA # and CAS
[40 CFR 261.33(e)]

Acrolein	P003	107-13-1
Aldicarb	P070	116-06-3
Aldrin	P004	309-00-2
Allyl alcohol	P005	107-18-6
Aluminum phosphide	P006	1302-45-0
4-Aminopyridine (Avitrol)	P008	504-24-5
Arsenic acid	P010	7778-39-4
Arsenic pentoxide	P011	1303-28-2
Arsenic trioxide	P012	1327-53-3
Calcium cyanide	P021	592-01-8
Carbon disulfide	P022	75-15-0
p-Chloroaniline	P024	106-47-8
Cyanides (soluble cyanide salts not otherwise specified)	P030	
Cyanogen chloride	P031	506-77-4
Dieldrin	P037	60-57-1
O,O-Diethyl S-[2-ethylthio)ethyl] phosphorodithioate (disulfoton)	P039	298-04-4
O,O-Diethyl O-pyrazinyl phosphorothioate (Zinophos®)	P040	297-97-2
Dimethoate	P044	60-51-5
O,O-Dimethyl O-p-nitrophenyl phosphorothioate (methyl parathion)	P071	298-00-0
4,6-Dinitro-o-cresol and salts	P047	534-52-1
4,6-Dinitro-o-cyclohexylphenol	P034	131-89-5
Dinoseb	P020	88-85-7
Endosulfan	P050	115-29-7
Endothall	P088	129-67-9
Endrin	P051	72-20-8
Famphur	P097	52-85-7
Fluoroacetamide	P057	640-19-7
Heptachlor	P059	76-48-8
Hexachlorohexahydro-exo,exo-dimethanonaphthalene (Isodrin)	P069	465-73-6
Hydrocyanic acid	P063	74-90-8
Methomyl	P066	16752-77-5
alpha-Naphthylthiourea (ANTU)	P072	86-88-41
Nicotine and salts	P075	54-11-5
Octamethylpyrophosphoramide (OMPA, schradan)	P085	152-16-9
Parathion	P089	56-38-2
Phenylmer ric acetate (PMA)	P092	62-38-4
Phorate	P094	298-02-2
Potassium cyanide	P098	151-50-8
Propargyl alcohol	P102	107-19-7
Sodium azide	P105	26628-22-8
Sodium cyanide	P106	143-33-9
Sodium fluoroacetate	P058	62-74-8

Strychnine and salts	P108	57-24-9 60-41-3
O,O,O,O-Tetraethyl dithiopyrophosphate (sulfotepp)	P109	3689-24-5
Tetraethyl pyrophosphate	P111	107-49-3
Thallium sulfate	P115	7446-18-6
Thiofanox	P045	39196-18-4
Toxaphene	P123	8001-35-2
Warfarin (>0.3%)	P001	81-81-2
Zinc phosphide (>10%)	P122	1314-84-7

50 ACTIVES

II. PESTICIDES DERIVED FROM TRI-, TETRA-, AND PENTACHLOROPHENOLS [40 CFR 261.31]

2-Chloroethyl 2-(2,4,6-trichlorophenoxy) ethyl ether	F027	5324-22-1
Dehydroabietylammonium pentachlorophenoxide	F027	35109-57-0
Erbon	F027	136-25-4
O-ethyl O-(2,4,5-trichlorophenyl) ethylphosphonothioate	F027	327-98-0
2,2'-Methylenebis (3,4,6-trichlorophenol) (Hexachlorophene)	F027	70-30-4
--Potassium salt of	F027	67923-62-0
--Sodium salt of	F027	3247-34-5
--Disodium salt of	F027	5736-15-2
Pentachlorophenol	F027	87-86-5
--Potassium salt of	F027	7778-73-6
--Sodium salt of	F027	131-52-2
--Zinc salt of	F027	2917-32-0
--Zinc salt of N-alkyl (C_{16}-C_{18})-1,3-propanediamine	F027	
--Pentachlorophenyl laurate	F027	3772-94-9
Potassium trichlorophenate (2,4,6)	F027	2591-21-1
Potassium trichlorophenate (2,4,5)	F027	35471-43-3
Silvex	F027	93-72-1
--2-Butoxyethyl ester	F027	19398-13-1
--Butoxypolypropoxypropyl ester	F027	53404-07-2
--Butoxypropyl ester	F027	25537-26-2
--Triethanolamine salt	F027	51170-59-3
--Triisopropanolamine salt	F027	53404-09-4
--Dimethylamine salt	F027	55617-85-1
--Dipropylene glycol isobutyl ether ester	F027	53535-26-5
--Ethanolamine salt	F027	7374-47-2
--2-Ethylhexyl ester	F027	53404-76-5
--Isooctyl ester	F027	53404-14-1

--Isopropanolamine salt	F027	53404-13-0
--Monohydroxylaluminum salt	F027	69622-82-8
--Polypropoxypropyl ester	F027	83562-66-7
--Potassium salt	F027	2818-16-8
--Propylene glycol isobutyl ether ester	F027	53466-84-5
--Sodium salt	F027	37913-89-6
--Triethanolamine salt	F027	17369-89-0
--Triethylamine salt	F027	53404-74-3
--Triisopropanolamine salt	F027	53404-75-4
--Tripropylene glycol isobutyl ether ester	F027	53535-30-1
Sodium 2-(2,4,5-trichlorophenoxy) ethyl sulfate	F027	3570-61-4
Tetrachlorophenols	F027	25167-83-3
--Alkylamine*amine salt (as in fatty acids of coconut oil)	F027	
--Potassium salt	F027	53535-27-6
--Sodium salt	F027	25567-55-9
2,4,5-Trichlorophenol	F027	95-95-4
2,4,6-Trichlorophenol	F027	88-06-2
2,4,5-Trichlorophenol salt of 2,6-bis[(dimethylamino)methyl] cyclohexanone	F027	53404-83-4
2,4,5-Trichlorophenol, sodium salt	F027	136-32-3
2,4,6-Trichlorophenol, sodium salt	F027	3784-03-0
2,4,5-Trichlorophenoxyacetic acid	F027	93-79-8
--Alkyl C-12 amine salt	F027	53404-84-5
--Alkyl C-13 amine salt	F027	53404-85-6
--Alkyl C-14 amine salt	F027	53535-37-8
--N,N-diethylethanolamine salt	F027	53404-86-7
--Dimethylamine salt	F027	6369-97-7
--N,N-dimethyllinoleylamine salt	F027	53404-88-9
--N,N-dimethyloleylamine salt	F027	53404-89-0
--N-oleyl-1,3-propylene diamine salt	F027	53404-87-8
--Sodium salt	F027	13560-99-1
--Triethanolamine salt	F027	3813-14-7
--Triethylamine salt	F027	2008-46-0
--Alkyl (C3H7 - C7H9) ester	F027	
--Amyl ester	F027	120-39-8
--Butoxyethoxypropyl ester	F027	1928-58-1
--2-Butoxyethyl ester	F027	2545-59-7
--Butoxypropyl ester	F027	1928-48-9
--Butyl ester	F027	93-79-8
--Dipropylene glycol isobutyl ether ester	F027	53535-31-2
--2-Ethylhexyl ester	F027	1928-47-8
--Isobutyl ester	F027	4938-72-1

--Isopropyl ester	F027	93-78-7
--Propylene glycol isobutyl ether ester	F027	53466-86-7
--Tripropylene glycol isobutyl ether ester	F027	53535-32-3
4-(2,4,5-Trichlorophenoxy)butyric acid [2,4,5-TB]	F027	93-80-1
2-(2,4,5-Trichlorophenoxy)ethyl hydrogen sulfate [2,4,5-TES]	F027	69633-04-1
1,4',5'-Trichloro-2'-(2,4,5-trichlorophenoxy) methanesulfonanilide [Edolan U]	F027	69462-14-2

PESTICIDES THAT ARE TOXIC HAZARDOUS WASTES

PESTICIDES ON THE "F" LIST [40 CFR 261.33(f)]	(with RCRA #,	and CAS #
Acetone	U002	67-64-1
Acrylonitrile*	U009	107-13-1
Amitrole	U011	61-82-5
Benzene*	U019	71-43-2
Bis(2-ethylhexyl)phthalate	U028	117-81-7
Cacodylic acid	U136	75-60-5
Carbon tetrachloride*	U211	56-23-5
Chloral (hydrate) (chloroacetaldehyde)	U034	302-17-0
Chlordane, technical*	U036	57-74-9
Chlorobenzene*	U037	108-90-7
4-Chloro-m-cresol	U039	59-50-7
Chloroform*	U044	67-66-3
o-Chlorophenol	U048	95-57-8
Creosote	U051	8021-39-4
Cresylic acid (cresols)*	U052	1319-77-3
Cyclohexane	U056	110-82-7
Cyclohexanone	U057	108-94-1
Decachlorooctahydro-1,3,4-metheno-2H-cyclobuta[c,d]-pentalen-2-one (Kepone, chlordecone)	U142	143-50-0
1,2-Dibromo-3-chloropropane (DBCP)	U066	96-12-8
Dibutyl phthalate	U069	84-74-2
S-2,3-(Dichloroallyl diisopropyl-thiocarbamate) (diallate,Avadex)	U062	2303-16-4
o-Dichlorobenzene*	U070	95-50-1
p-Dichlorobenzene*	U072	106-46-7
Dichlorodifluoromethane (Freon 12®)	U075	75-71-8
3,5-Dichloro-N-(1,1-dimethyl-2-propynyl) benzamide (pronamide, Kerb®)	U192	23950-58-5
Dichloro diphenyl dichloroethane (DDD)	U060	72-54-8
Dichloro diphenyl trichloroethane (DDT)	U061	50-29-3
Dichloroethyl ether	U025	1191-17-9
2,4-Dichlorophenoxyacetic, salts and esters (2,4-D)*	U240	94-75-7
1,2-Dichloropropane	U083	8003-19-8
1,3-Dichloropropene (Telone)	U084	542-75-6
Dimethyl phthalate	U102	131-1-3
Epichlorohydrin (1-chloro-2,3-epoxypropane)	U041	106-89-8
Ethyl acetate	U112	141-78-6
Ethyl 4,4'-dichlorobenzilate (chlorobenzilate)	U038	510-15-6

*Proposed for deletion by TCLP proposal

Ethylene dibromide (EDB)	U067	106-93-4
Ethylene dichloride*	U077	107-06-2
Ethylene oxide	U115	75-21-8
Formaldehyde	U122	50-00-0
Furfural	U125	98-01-1
Hexachlorobenzene*	U127	118-74-1
Hexachlorocyclopentadiene	U130	77-47-4
Hexachloroethane*	U131	67-72-1
Hydrofluoric acid	U134	7664-39-3
Isobutyl alcohol*	U140	78-83-1
Lead acetate	U144	301-04-2
Lindane*	U129	58-89-9
Maleic hydrazide	U148	123-33-1
Mercury	U151	7439-97-6
Methoxychlor*	U247	72-43-5
Methyl alcohol (methanol)	U154	67-56-1
Methyl bromide	U029	74-83-9
Methyl chloride	U045	74-87-3
2,2'-Methylenebis (3,4,6-trichlorophenol) (hexachlorophene) [acute waste per 261.31]	U132	70-30-4
Methylene chloride*	U080	75-09-2
Methyl ethyl ketone*	U159	78-93-3
4-Methyl-2-pentanone (methyl isobutyl ketone)	U161	108-10-1
Naphthalene	U165	91-20-3
Nitrobenzene*	U169	98-95-3
p-Nitrophenol	U170	100-02-7
Pentachloroethane	U184	76-01-7
Pentachloronitrobenzene (PCNB)	U185	82-68-8
Pentachlorophenol* [acute waste per 261.31]	U242	87-86-5
Phenol*	U188	108-95-2
Pyridine*	U196	110-86-1
Resorcinol	U201	108-46-3
Safrole	U203	94-59-7
Selenium disulfide	U205	7488-56-4
Silvex [acute waste per 261.31]	U233	93-72-1
1,1,2,2-Tetrachloroethane*	U209	79-34-5
Tetrachloroethylene*	U210	127-18-4
2,3,4,6-Tetrachlorophenol* [acute waste per 261.31]	U212	
Thiram	U244	137-26-8
Toluene*	U220	108-88-3
1,1,1-Trichloroethane* (methyl chloroform)	U226	71-55-6
Trichloroethylene*	U228	79-01-6
Trichloromonofluoromethane (Freon 11®)	U121	75-69-4
2,4,5-Trichlorophenol* [acute waste per 261.31]	U230	95-95-4
2,4,6-Trichlorophenol* [acute waste per 261.31]	U231	88-06-2

2,4,5-Trichlorophenoxyacetic acid (2,4,5-T)* [acute waste per 261.31]	U232	93-76-5
Warfarin (<0.3%)	U248	81-81-2
Xylene	U239	1330-20-7
Zinc phosphide (<10%)	U249	1314-84-7

83 ACTIVES

CONTAINER DISPOSAL INSTRUCTIONS

The label of each product must bear container disposal instructions appropriate to the type of container.

1. Domestic use products must bear one of the following container disposal statements:

Container Type	Statement
Non-aerosol products (bottles, cans, jars)	Do not reuse container (bottle, can, jar). Rinse thoroughly before discarding in trash.
Non-aerosol products (bags)	Do not reuse bag. Discard bag in trash.
Aerosol products	Replace cap and discard containers in trash. Do not incinerate or puncture.

2. All other products must bear container disposal instructions, based on container type, listed below:

Container Type	Statement
Metal containers (non-aerosol)	Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or by other procedures approved by state and local authorities.
Plastic containers	Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.
Glass containers	Triple rinse (or equivalent). Then dispose of in a sanitary landfill or by other approved state and local procedures.
Fiber drums with liners	Completely empty liner by shaking and tapping sides and bottom to loosen clinging particles. Empty residue into application equipment. Then dispose of liner in a sanitary landfill or by incineration if allowed by state and local authorities. If drum is contaminated and cannot be reused[1], dispose of in the same manner.
Paper and plastic bags	Completely empty bag into application equipment. Then dispose of empty bag in a sanitary landfill or by incineration, or, if allowed by State and local authorities, by burning. If burned, stay out of smoke.
Compressed gas cylinders	Return empty cylinder for reuse (or similar wording)

1/ Manufacturer may replace this phrase with one indicating whether and how fiber drum may be reused.

PHYSICAL/CHEMICAL HAZARDS

Criteria	Required Label Statement
I. Pressurized Containers	
A. Flashpoint at or below 20°F; or if there is a flashback at any valve opening.	Extremely flammable. Contents under pressure. Keep away from fire, sparks, and heated surfaces. Do not puncture or incinerate container. Exposure to temperatures above 130°F may cause bursting.
B. Flashpoint above 20°F and not over 80°F; or if the flame extension is more than 18 inches long at a distance of 6 inches from the valve opening.	Flammable. Contents under pressure. Keep away from heat, sparks, and flame. Do not puncture or incinerate container. Exposure to temperatures above 130°F may cause bursting.
C. All Other Pressurized Containers	Contents under pressure. Do not use or store near heat or open flame. Do not puncture or incinerate container. Exposure to temperatures above 130°F may cause bursting.
II. Non-Pressurized Containers	
A. Flashpoint at or below 20°F.	Extremely flammable. Keep away from fire, sparks, and heated surfaces.
B. Flashpoint above 20°F and not over 80°F.	Flammable. Keep away from heat and open flame.
C. Flashpoint over 80°F and not over 150°F.	Do not use or store near heat and open flame.
D. Flashpoint above 150°F.	None required.

STORAGE INSTRUCTIONS FOR PESTICIDES

Heading:

All products are required to bear specific label instructions about storage and disposal. Storage and disposal instructions must be grouped together in the directions for use portion of the label under the heading STORAGE AND DISPOSAL. Products intended solely for domestic use need not include the heading "STORAGE AND DISPOSAL."

Storage Instructions:

All product labels are required to have appropriate storage instructions. Specific storage instructions are not prescribed. Each registrant must develop his own storage instructions, considering, when applicable, the following factors:

1. Conditions of storage that might alter the composition or usefulness of the pesticide. Examples could be temperature extremes, excessive moisture or humidity, heat, sunlight, friction, or contaminating substances or media.

2. Physical requirements of storage which might adversely affect the container of the product and its ability to continue to function properly. Requirements might include positioning of the container in storage, storage or damage due to stacking, penetration of moisture, and ability to withstand shock or friction.

3. Specifications for handling the pesticide container, including movement of container within the storage area, proper opening and closing procedures (particularly for opened containers), and measures to minimize exposure while opening or closing container.

4. Instructions on what to do if the container is damaged in any way, or if the pesticide is leaking or has been spilled, and precautions to minimize exposure if damage occurs.

5. General precautions concerning locked storage, storage in original container only, and separation of pesticides during storage to prevent cross-contamination of other pesticides, fertilizer, food, and feed.

6. General storage instructions for household products should emphasize storage in original container and placement in locked storage areas.

APPENDIX III

USE INDEX APPENDIX

TABLE OF CONTENTS

Site Name	Page
TERRESTRIAL FOOD CROP	2
(Agricultural Crops)	2
TERRESTRIAL NONFOOD CROP	23
(Agricultural Crops)	23
GREENHOUSE FOOD CROP	27
(Agricultural Crops)	27
GREENHOUSE NONFOOD DROP	28
(Ornamental Plants and Forest Trees)	28
Apple	2, 27
Apple (nonbearing)	3
Cantaloupe	4
Carrots	4
Celery	5
Cherry	27
Cherry (nonbearing)	6
Citrus Fruits	7, 27
Citrus Fruits (nonbearing)	8
Cotton	8
Cucumber	4
Eggplant	9
Garlic	10
Ginger	11
Honeydew Melons	4
Onion	11
Ornamental Plants	24, 28
Ornamental Plants (interior plantscapes)	30
Peach	27
Peach (nonbearing)	13
Peanuts	13
Pear	14, 27
Pear (nonbearing)	15
Pepper (bell peppers)	15
Peppermint	16
Pineapple	17
Plum	27
Plum (nonbearing)	17
Potato	18
Soybeans	19
Spearmint	16
Squash	4
Strawberry	20, 27
Sweet Potato	20
Tobacco	23
Tomato	21
Watermelons	4

103801

OXAMYL

TYPE PESTICIDE: Nematicide, Insecticide, Acaricide

FORMULATIONS:
FI (42%)
G (10%)
SC/L (2 lb/gal)

GENERAL WARNINGS AND LIMITATIONS: Oxamyl is a RESTRICTED USE PESTICIDE due to acute toxicity and toxicity to birds and mammals. Apply either formulation only in commercial and farm plantings; do not use in home plantings. Do not apply in Suffolk and Nassau Counties, Long Island, NY, except (Reg. No. 904-415, 10% G) for container grown nursery stock, greenhouse, and interior plantscapes. Do not enter treated areas for 24 hours after application unless appropriate protective clothing is worn.
When mixing spray, loading, applying, or otherwise handling, wear protective clothing, goggles, and an approved mask or respirator.
The use of the 2 pound per gallon formulation in greenhouses is limited to SLN-FL770044 and SLN-OH780001. The operator must wear a suitable full-faced mask and the greenhouse must be ventilated for 1 hour after treatment.
Oxamyl is toxic to wildlife. Cover, collect, or incorporate granules spilled on soil surfaces.
Do not plan crops other than those with registered oxamyl uses within 6 months after the last application.
During aerial application, human flaggers are prohibited unless in totally enclosed vehicle.
Bee Caution:
The 2 pound per gallon formulation is highly toxic to bees exposed to direct treatment or residues on blooming crops or weeds. Do not apply oxamyl or allow to drift to blooming crops or weeds if bees are visiting the treatment area.
Ground Water Advisory: Residues of oxamyl can seep or leach through soil and can contaminate ground water which may be used for drinking. Users are advised not to apply oxamyl where the water table is close to the surface and where soils are very permeable, i.e., well-drained soils such as loamy sands. Your local Agricultural Soil Conservation Service can provide information on the soil types in your area and the location of the ground water.
Dosage rates are given in active ingredient.
Agricultural Crop Tolerances (other than those listed in the text):
Banana 0.3 ppm
Pumpkin 2.0 ppm
Definition of Terms:
SLN - Special Local Needs
Claims for pest control limited to suppression of population are indicated by an entirely parenthesized pest name.

OXAMYL

	Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
TERRESTRIAL FOOD CROP			
Agricultural Crops)			
104001AA	Apple		2 ppm 14 day preharvest interval through 2.0 pounds per acre. Do not graze livestock in treated orchards. Do not apply at bloom or within 30 days after bloom, or fruit thinning may occur. Do not apply more than 400 gallons of per acre.
ILAVASA ILAVBSA	European red mite Twospotted spider mite	0.25-0.5 lb/100 gal or 0.0625-0.125 lb/100 gal (2 lb/gal SC/L)	Foliar application. For established populations of mites, apply at higher range as needed. For low populations (preventive control) apply at lower range before mites reach damaging numbers and repeat at 10 to 14 day intervals to maintain control.
ILAVASA	(European red mite)	[SLN] 0.75 lb/A (2 lb/gal SC/L)	SLN - Use limited to VT. Foliar application. Apply by aircraft in sufficient water to obtain adequate coverage when mites first appear. Repeat in 1 to 2 weeks if needed.
IRACALA IRACBSA	Apple aphid Rosy apple aphid	[SLN] 0.25-0.5 lb/100 gal (2 lb/gal SC/L)	SLN - Use limited to NV, VA, and WV. Delayed dormant and foliar applications. For rosy apple aphid, apply at pink (no petals opened) when aphids are present in significant numbers. For apple aphid, apply when 50 percent or more of the terminals are infested with aphids.

	Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
	Apple (continued)		
TAPPAH TAPPAC	Spotted tentiform leafminer (adults and larvae) Spotted tentiform leafminer (larvae)	0.25-0.5 lb/100 gal (2 lb/gal SC/L)	Delayed dormant and foliar applications. For first brood leafminer (adults and larvae), apply at pink (no petals opened). For second brood leafminer (larvae), apply when there are an average of 2 or more larvae per leaf in the sap-feeding stage. Application should be made before the larvae enter into the tissue-feeding stage.
		[SLN] 0.25-0.5 lb/100 gal (2 lb/gal SC/L)	SLN - Use limited to CT. Delayed dormant and foliar applications. For first brood leafminer (adults and larvae), apply at pink (before bloom). For second brood leafminer (larvae), apply 30 days after bloom if infestation is 2 mines per leaf and the majority of larvae are sap-feeders. Repeat in 3 to 4 weeks if needed.
		[SLN] 0.25-0.5 lb/100 gal (2 lb/gal SC/L)	SLN - Use limited to NY and VT. Delayed dormant and foliar applications. For first brood leafminer (adults and larvae), apply once before bloom. For second brood leafminer (larvae), apply 30 days after bloom if infestation is 1 mine per leaf. Repeat in 3 to 4 weeks if needed.
IRAFBAA	White apple leafhopper	0.25-0.5 lb/100 gal (2 lb/gal SC/L)	Foliar application. Apply when significant numbers of leafhoppers are present. Repeat at 10 to 14 day intervals as needed.
[illegible]	Apple (nonbearing)		Apply to trees that will not bear fruit within 12 months after application. Do not treat planting stock by root dip.
		Refer to TERRESTRIAL NONFOOD CROP, (Ornamental Plants and Forest Trees), Ornamental Plants, for use and limitation information.	

OXAMYL

	Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
[illegible]	Cantaloupe		2.0 ppm
[illegible]	Cucumber		1 day preharvest interval through
[illegible]	Honeydew Melons		1.0 pound per acre for foliar ap-
[illegible]	Squash (summer and winter)		plication.
[illegible]	Watermelons		Preplant soil application through 4.0 pounds per acre.
NEJBBAA	Lesion nematodes	2.0-4.0 lb/A (2 lb/gal SC/L)	Preplant soil application. Broadcast; or, for band treatment, use proportionately less formulation. Following application and before planting, incorporate formulation 2 to 4 inches into the soil.
NECABAA	Ring nematodes [SLN--I, IN]	(10% G)	
NEDBCAA	Root-knot nematodes (except Javanese)	0.5-1.0 lb/A (2 lb/gal SC/L)	
NEBBAAA	Sting nematodes		Foliar application. Apply 2 to 4 weeks after planting and repeat 2 to 3 weeks later. Preferably, applications should be used in conjunction with preplant soil application. SLN-IN: If soil application is not used, apply 10 to 14 days after planting and repeat 10 to 21 days later.
NELBAAA	Stunt nematodes		
IRACAAA	Aphids [SLN-FL]	0.5-1.0 lb/A (2 lb/gal SC/L)	Foliar application. Apply when insects first appear and repeat 3 weekly or as needed. Where leaf miner infestations occur annually, apply 2 to 4 weeks after planting and repeat weekly or as needed. SLN-CA: May also be applied by aircraft.
IOABAVA	Liriomyza leafminers		
[illegible]	Carrots		0.1 ppm At-planting soil application through 4.0 pounds per acre. Preplant soil application through 8.0 pounds per acre. SLN-MI: 14 day preharvest interval through 1.0 pound per acre for foliar application. Do not apply in CA.
[illegible]	Carrot weevil	[SLN] 0.5-1.0 lb/A (2 lb/gal SC/L)	SLN - Use limited to MI. Foliar application. Apply as a directed spray in a minimum of [illegible] gallons per acre. Apply up to [illegible] treatments at 2 to 3 week intervals beginning when insects appear in sufficient numbers to cause injury.

	Site and Pest	Dosages and Formulation(s)	Tolerance, use, limitations
	Carrots (continued)		
NLJ28HA	Lesion nematodes	4.0-8.0 lb/A	Preplant soil application. Broadcast. Apply to the soil in a minimum of 20 gallons per acre within 1 week of planting. Incorporate to a depth of 4 to 6 inches.
NJJ8 AA	Root-knot nematodes (except Javanese)	(2 lb/gal SC/L) (10% G)	
NEGABHA	Spiral nematodes	2.0-4.0 lb/A	At-planting soil application. In-furrow. Apply in the seed furrow during the planting operation. Apply the soluble concentrate formulation in a minimum of 20 gallons per acre.
NEBBAAA	Sting nematodes	(2 lb/gal SC/L) (10% G)	
NELBAAA	Stunt nematodes		
		[SLN] 1.1-1.5 oz/ 1,000 ft of row [6 in. band width] (10% G)	SLN - Use limited to MI. At-planting soil application. Apply over the planting area and incorporate thoroughly.
128003AA	Celery		3.0 ppm 14 day preharvest interval through 1.0 pound per acre for foliar application in FL, MI, or PA. SLN-FL (trimmed celery): 5 day preharvest interval through 0.5 pound per acre or 7 day preharvest interval through 1.0 pound per acre for foliar application. SLN-MI: Preplant soil application through 6.0 pounds per acre.
IAASCDA	Carrot weevil	[SLN] 1.0 lb/A (2 lb/gal SC/L)	SLN - Use limited to MI. Foliar application. Apply 3 times at 2 to 3 week intervals when insects appear in significant numbers to cause injury. May be applied alone or following the preplant application.

	Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
	Celery (continued)		
NEIBBAA NEIBBAA NEOBCBC	Lesion nematodes Pin nematodes Root-knot nematode, northern	[SLN] 2.0-6.0 lb/A (10% G)	SLN - Use limited to MI. Preplant soil application. For pin and northern root-knot nematodes, apply 2.0 to 3.0 pounds per acre as a band or broadcast spot treatment of infested areas. For lesion and northern root-knot nematodes, apply 4.0 to 6.0 pounds per acre on a broadcast basis. Incorporate to a depth of 4 to 6 inches.
NEIBBAA NEOBCAA	Pin nematodes Root-knot nematodes	[SLN] 4.0 lb/30 gal/A (2 lb/gal SC/L)	SLN - Use limited to MI and PA. Preplant soil application. Band treatment. Apply to a band 8 to 16 inches wide on the row. Incorporate to a depth of 4 inches.
		[SLN] 1.0 lb/A (2 lb/gal SC/L)	SLN - Use limited to MI and PA. Foliar application. Following the preplant soil application, apply 3 times at 2 to 3 week intervals beginning 2 to 3 weeks after transplanting; or, if no preplant application is made, begin as soon as new growth shows after transplanting.
IOABADA	Serpentine leafminer complex (except *Liriomyza trofolii*)	[SLN] 0.5-1.0 lb/A (2 lb/gal SC/L)	SLN - Use limited to FL. Foliar application. Apply when first insect appears. Repeat at 5 to 7 day intervals or as needed. Apply in a minimum of 100 gallons per acre. Rate will depend upon the degree of infestation. May be applied by aircraft.
[illegible]	Cherry (nonbearing)		Apply to trees that will not bear fruit within 12 months after application. Do not treat planting stock by root dip.
		Refer to TERRESTRIAL NONFOOD CROP, (Ornamental Plants and Forest Trees), Ornamental Plants, for use and limitation information.	

OXAMYL

	Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
[illegible]	Citrus fruits		3.0 ppm 7 day preharvest interval through 1.0 pound per acre for foliar application with a maximum [illegible] applications per year. SLN-TX: 7 day preharvest interval through 18.0 pounds per acre per season for foliar application. SLN-AZ and CA: 7 day preharvest interval through 8.0 pounds per acre for irrigation water application; and do not apply more than 8.0 pounds per acre in a 30 day period. Do not graze livestock in treated orchards.
NEMBABH	Citrus nematode	[SLN] 8.0-4.0 lb/A (8 lb/gal SC/L)	SLN - Use limited to TX. Foliar application. Apply 3 to 6 times between the new flush of growth in the spring and the fall.
NEMBABA	(Citrus nematode)	[SLN] 0.5-2.0 lb/A (8 lb/gal SC/L)	SLN - Use limited to AZ and CA. Irrigation water application. Apply be metering into flood irrigation water or into drip irrigation systems. Apply in the spring when soil temperature at a depth of 18 inches has reached 50 F (10.0 C). Repeat until soil temperature drops below 50 F (10.0 C) using 0.5 to 1.0 pounds per acre rate at 2 week intervals, or 1.0 to 2.0 pounds per acre at 4 week intervals. Treatments in April, May and June, and continued through August, September and October are recommended. Do not allow treated water to leave the field when irrigation is by furrow or basin flooding

	Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
	Citrus Fruits (continued)		
ILAEBA	Citrus rust mite	0.0625-0.25 lb/100 gal (up to 400 gal/A) (2 lb/gal SC/L)	Foliar application. Apply as soon as significant infestations are found and repeat as needed. Apply at 4 to 6 six week intervals or as needed under light to moderate pressure: under moderate to heavy pressure, apply at 2 to 3 week intervals as long as infestation continues.
IMOCADA	Citrus thrips	0.5-1.0 lb/A (100-500 gal/A) (2 lb/gal SC/L)	Foliar application. Apply in the early spring before bloom when the new growth is about 3 to 4 inches long. Repeat as needed. Applications at petal fall may be critical to prevent fruit scarring. Applications are also recommended during mid-summer to protect new growth on young trees. May be applied by aircraft in AZ and CA (SLN).
/02000DA	Citrus Fruits (nonbearing)		Apply to trees that will not bear fruit within 12 months after application.
		Refer to TERRESTRIAL NONFOOD CROP, (Ornamental Plants and Forest Trees), Ornamental Plants, for use and limitation information.	
/28007AA	Cotton		0.2 ppm (cottonseed) 21 day preharvest interval through 1.0 pound per acre for foliar application. Do not graze or feed treated cotton to livestock.
IMASAHA IACMAVA IDAMATA	Boll weevil Cotton fleahopper Tarnished plant bug	0.125-0.25 lb/A (2 lb/gal SC/L)	Foliar application. Apply when damaging populations appear and repeat as needed to maintain control. SLN-TX: May be applied by aircraft in a minimum of 2 gallons of water or in a minimum of 1.5 quarts of refined vegetable oil per acre.

	Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
	Cotton (continued)		
[illegible]	Cotton leaf-perforator	0.25-1.0 lb/A (2 lb/gal SC/L)	Foliar application. Apply when damaging populations begin to build. Repeat at 5 to 5 day intervals for up to 4 applications. SLN-AZ and CA: May be applied by aircraft.
	Cucumber		See Cantaloupe cluster.
[illegible]	Eggplant		2.0 ppm 7 day preharvest interval through 1.0 pound per acre when using soil application with foliar application; or 1 day preharvest interval through 1.0 pound per acre for foliar application only.
IRACAAA INAMCFA IMAAAGA ILAAABA	Aphids Colorado potato beetle Leafminers Mites	0.5-1.0 lb/A (2 lb/gal SC/L)	Foliar application. Apply by ground equipment when insects first appear. Repeat at 1 to 3 intervals as needed.
NABAAAA	Plant-parasitic nematodes	soil: 2.0 lb/A or foliar: 0.5 lb/A (2 lb/gal SC/L)	Use limited to areas other than CA. Soil and foliar applications. Apply to the soil as a band treatment 2 to 3 weeks after transplanting. Repeat 4 weeks later. Two to 4 weeks after the soil treatments, make 3 foliar applications by ground equipment at 1 to 2 week intervals.

OXAMYL

	Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
[illegible]	Garlic		0.1 ppm SLN-OR: 14 day preharvest interval through 4.0 oz ai per acre for soil application.
NEMBBBB NCAABAA	Bulb and stem nematode Stubby-root nematodes	[SLN] 1.5-4.0 lb/A (2 lb/gal SC/L)	SLN - Use limited to OR. At-planting and postemergence soil applications. Apply 3.0 to 4.0 pounds per acre at planting as an in-furrow band spray in 1 to 50 gallons, or as an in-furrow drench using 1.5 to 2.0 pounds per acre in 100 to 150 gallons. Apply 3.0 to 4.0 pounds per acre in 20 to 50 gallons (band or broadcast) as postemergence treatments). Apply at flag leaf (2 to 3 leaf) stage and repeat at 14 to 21 day intervals. Band width should be 4 to 8 inches. Gallons per acre given are on a broadcast basis; for band application use proportionately less. Applications should be followed by overhead irrigation or rainfall within 3 days of treatment (0.25 to 1 acre inch).
		[SLN] 1.0-2.0 lb/surface A (2 lb/gal SC/L)	SLN - Use limited to CA. At-planting and post-plant soil applications. Apply at planting as an in-furrow spray followed by irrigation. Apply 2 to 3 additional times, at 14 to 21 day intervals, by injection into sprinkler lines or furrow irrigation, or by banded application (1 to 2 inches wide) placed on the soil surface at the base of the plants followed within 48 hours after sprinkler or furrow irrigation.

	Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
[illegible]	Bean		0.1 ppm SLN--MI: 30 day preharvest interval through 4.0 pounds per acre for soil application. And, up to 7 weeks after planting through 1.0 pound per acre for foliar application.
NEJBCBA NEJBBAA NEOBCAA NEBBAAA	Burrowing nematode Lesion nematodes Root-knot nematodes Sting nematodes	(SLN) soil: 2.0-4.0 lb/A or foliar: 0.5-1.0 lb/A (2 lb/gal SC/L)	SLN - Use limited to MI. Preplant soil and/or foliar applications. Apply as a broadcast or band treatment (using proportionately less formulation) before planting. Incorporate 2 to 4 inches into the soil. Apply foliar sprays 2 to 4 weeks after planting and repeat 14 to 21 days later. Foliar sprays should be used preferably as a follow-up to the soil application. OR, apply 2.0 to 4.0 pounds per acre directly to the soil by drip irrigation emitters. Apply 1 week after planting and repeat at 14 day intervals as needed.
	Honeydew Melon		See Cantaloupe cluster.
[illegible]	Onion		0.1 ppm SLN-ID, MI, OR, TX, and WA: 14 day preharvest interval through 0.5 pound per acre for foliar application. Do not harvest tops of treated onions where foliar applications have been made. SLN-OR: 14 day preharvest interval through 4.0 pounds per acre.
NEBBBB NIAABB	Bulb and stem nematode Stubby-root nematodes	(SLN) 1.5-4.0 lb/A (2 lb/gal SC/L)	SLN - Use limited to MI. At-planting soil application. Apply 1.5 to 2.0 pounds per acre at planting as an in-furrow dribbler in 100 to 150 gallons. Or 3.0 to 4.0 pounds per acre as an post-furrow band spray in 20 to 50 gallons.

Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
Corn (continued)		
	[SLN] 1.1-1.5 oz/ 1,000 ft of row (10% G)	SLN - Use limited to MI. Preplant soil application. Apply in a 6 inch path over planting area. Incorporate thoroughly.
	[SLN] 1.5-4.0 lb/A (2 lb/gal SC/L)	SLN - Use limited to IA. At-planting and postemergence soil applications. Apply 3.0 to 4.0 pounds per acre at planting as an in-furrow band spray in 2 to 50 gallons, or as an in-furrow drench using 1.5 to 2.0 pounds per acre in 100 to 150 gallons. Apply 3.0 to 4.0 pounds per acre in 20 to 50 gallons (band or broadcast) as postemergence treatments. Apply at flag leaf (2 to 3 leaf stage) and repeat at 14 to 21 day intervals. Band width should be 4 to 8 inches. Gallons per acre given are on a broadcast basis; for band application use proportionately less. Applications should be followed by overhead irrigation or rainfall within 3 days of treatment (0.25 to 1 acre inch).
	[SLN] 1.0-2.0 lb/ surface A (2 lb/gal SC/L)	SLN - Use limited to CA. At-planting and post-plant soil applications. Apply at-planting as an in-furrow spray followed by irrigation. Apply 2 to 3 additional times, at 14 to 21 day intervals, by injection into sprinkler lines or furrow irrigation,, or by banded application (1 to 2 inches wide) placed on the soil surface at the base of the plants followed within 48 hours with sprinkler or furrow irrigation.

OXAMYL

	Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
	Grain (continued)		
IM000AA IM000AB	Grain thrips western flower thrips	(SLN) 0.25-0.5 lb/A (2 lb/gal SC/L)	SLN - use limited to ID, MI, CA, TX, and WA. Foliar application. Apply when insects first appear in significant numbers and repeat at 14 day intervals if needed. Apply in sufficient water to obtain uniform coverage by ground equipment or aircraft.
705004DA	Peach (nonbearing)		Apply to trees that will not bear fruit within 18 months after application. Do not treat planting stock by root dip.
		Refer to TERRESTRIAL NONFOOD CROP, (Ornamental Plants and Forest Trees), Ornamental Plants, for use and limitation information.	
128015AA	Peanuts		0.2 ppm (peanuts, peanut hulls) 2.0 ppm (peanut forage, peanut hay) Apply 6 weeks after emergence through 1.0 pound per acre for foliar application. At-planting soil application through 3.0 pounds per acre. Do not allow granules to come in contact with seed. Do not apply in CA.
NE000AA NE000AB NE000AC IM000AA	Lance nematodes Lesion nematodes Root-knot nematodes (except Javanese) (Thrips)	0.5-2.0 lb/A (10% G)	At-planting and at-pegging soil applications. Apply in a 7 inch band or in-furrow at planting. If needed, repeat at pegging and irrigate thoroughly to wash granules off foliage and into the soil.

	Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
	Peanuts (continued)		
NEJBBAA NECABAA NEJBCAA NEBBAAA IMOAAAA	Lesion nematodes Ring nematodes Root-knot nematodes (except Javanese) Sting nematodes Thrips	1.0-3.0 lb/A (2 lb/gal SC/L)	Preplant or at-planting soil application. Apply in a 7 to 12 inch band in a minimum of 10 gallons per acre. Thoroughly incorporate to a depth of 3 to 5 inches immediately after application. Use the higher rate and wider band for severe infestations. Peanuts should be planted within 24 hours after application. Or, apply in 7 inch band immediately behind planting.
		0.5-1.0 lb/A (2 lb/gal SC/L)	Foliar application. Apply only following soil fumigation, or following preplant or at-planting soil application of oxamyl or other contact nematicides. Apply 2 sprays in 20 to 40 gallons per acre. Apply first spray 3 weeks after emergence and the second spray 6 weeks after emergence. Concentrating the spray on the row using 3 cone-type nozzles positioned over and to each side of the row is recommended.
704003AA	Pear		2.0 ppm 14 day preharvest interval through 2.0 pounds per acre. Do not graze livestock in treated orchards. Do not apply in CA. Do not apply at bloom or within 30 days after full bloom, or fruit thinning may occur. Varieties other than Bartlett and d'Anjou should be tested for the possibility of russeting.
ILAJSA ILAVAYA ILAJAOA ILAVBEA	European red mite McDaniel spider mite Pear rust mite Twospotted spider mite	1.5-2.0 lb/A (2 lb/gal SC/L)	Foliar application. Apply by ground equipment in 100 to 600 gallons per acre when mites first appear. Repeat as needed. A dilute application is recommended.

OXAMYL

	Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
70400BDA	Pear (nonbearing)		Apply to trees that will not bear fruit within 18 months after application. Do not treat planting stock by foliar dip.
		Refer to TERRESTRIAL NONFOOD CALF, (Ornamental Plants and Forest Trees), Ornamental Plants, for use and limitation information.	
71100BAA	Pepper (bell peppers)		3.0 ppm 7 day preharvest interval through 1.0 pound per acre for foliar application. Do not apply as a transplant water treatment during periods of slow plant growth such as when temperatures fall below 45 F (7.2 C), or crop injury may result. Do not apply in CA.
IRACCUA INASAGA IOSBAFA	Green peach aphid Pepper weevil Vegetable leaf-miner	0.5-1.0 lb/A (2 lb/gal SC/L)	Foliar application. Apply in a minimum of 100 gallons per acre when insects first appear. Repeat at 1 to 2 week intervals or as needed.
NECABAA NEOBCAA NEBBAAA NCAABAA NELBAAA	Ring nematodes Root-knot nematodes (except Javanese) Sting nematodes Stubby-root nematodes Stunt nematodes	transplant water: 0.5 lb/A and foliar: 0.5-1.0 lb/A (2 lb/gal. SC/L)	Transplant water application and foliar application. Apply in a minimum of 200 gallons of transplant water per acre. Under very high nematode populations, follow transplant water application with a foliar application 14 days after transplanting and continue as described in above use pattern.

OXAMYL

	Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
738080AA 738081AA	Peppermint Spearmint		10 ppm (may) SLN-MI and OR: 31 day preharvest interval through 3.0 pints per acre.
NEJBBAA NCBBAE	Lesion nematodes Mint nematode (Longidorus elongatus)	[SLN] 1.0-3.0 lb/A (2 lb/gal SC/L)	SLN - Use limited to MI and OR. Soil/foliar application. Apply as mint breaks winter dormancy and active root growth begins in a minimum of 10 gallons per acre. Apply the lower rate on coarse textured (sandy) soils and muck soils for lesion or mint nematodes. Apply the higher rate on fine textured (clay) soils for mint nematode. [Applications to heavy soils for lesion nematodes have not proven effective.] Rain fall or sprinkler irrigation (0.5 to 1 inch) is needed within 7 days of treatment to move the active ingredient into the root zone.

OXAMYL

	Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
706-1088	Pineapple		1.0 ppm (pineapples) 6.0 ppm (pineapple bran) 10.0 ppm (pineapple forage) 30 day preharvest interval with a maximum of 48.0 pounds per acre on the plant crop; or a maximum of 24.0 pounds per acre on the ratoon crop. Do not apply in CA.
IRAWAAA NEHBBBA NEOBOAA	Meadowgs (SLN) Reniform nematode Root-knot nematode	soil: 1.0-8.0 lb/A or foliar: 0.5-4.0 lb/A (2 lb/gal SC/L)	Preplant or postplant soil application and foliar application. Apply 4.0 to 8.0 pounds per acre broadcast 1 week prior to planting and incorporate 4 to 6 inches into the soil. Alternatively, apply 2.0 to 8.0 pounds per acre broadcast within 1 week after planting, or apply 1.0 to 8.0 pounds per acre directly to the soil by drip irrigation injection within 1 week after planting. Subsequently, apply 1 to 4.0 pounds per acre by ground equipment as a foliar spray at 2 to 4 week intervals. Apply when roots begin to grow following planting. For the ratoon crop apply 1 to 3 weeks after harvest of plant crop (SLN-PR). Alternatively, apply 0.5 to 4.0 pounds per acre directly to the soil by drip irrigation injection at 2, 4, or 8 week intervals. It is recommended that these subsequent applications follow the above preplant or postplant application, or a standard fumigant.
105-0504	Plum (nonbearing)		Apply to trees that will not bear fruit within 12 months after application.
		Refer to TERRESTRIAL NONFOOD CROP, (Ornamental Plants and Forest Trees), Ornamental Plants, for use and limitation information.	

OXAMYL

	Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
7.4013AA	Potato		0.1 ppm 7 day preharvest interval through 1.0 pound per acre for foliar application. In-furrow soil application, through 4.0 pounds per acre; or preplant soil application through 8.0 pounds per acre. Do not apply in CA.
IRACAAA INAMCFA INAMADA NEFBBBA NEJBBAA IRAFAJA NECABAA NEOBCAA NEBBAAA IGAMATA	Aphids Colorado potato beetle Flea beetles Golden nematode [SLN-NY] Lesion nematodes Potato leafhopper Ring nematodes (except west of the Rockies) Root-knot nematodes (except Javanese) String nematodes Tarnished plant bug	2.0-8.0 lb/A (2 lb/gal SC/L) (10% G) 0.25-1.0 lb/A (2 lb/gal SC/L)	Preplant or at-planting soil application. For nematodes and early season control of insects, apply 2.0 to 4.0 pounds per acre in the seed furrow during the planting operation; or, apply 4.0 to 8.0 pounds per acre as a band or broadcast treatment (use broadcast for golden nematode) within 1 week of planting. Incorporate to a depth of 4 to 6 inches. Apply 2 pound per gallon formulation in a minimum of 20 gallons per acre. Foliar application. For insects, apply 0.5 to 1.0 pound per acre, except in the Midwest and Northeast where 0.25 to 1.0 pound per acre may be used for Colorado potato beetle. Apply when insects first appear and repeat at 5 to 7 day intervals or as needed. May be applied by aircraft in a minimum of 4 gallons per acre.

OXAMYL

	Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
028001AA	Soybeans		0.2 ppm (soybeans, and soybeans straw) At-planting or preplant soil application through 4.0 pounds per acre (broadcast) or 2. pounds per acre (band). Do not cut for hay, or feed treated forage to livestock. Do not allow granules to come in contact with seed. Do not apply in CA.
IRACAAA	(Aphids)	0.5-2.0 lb/A (10% G)	Preplant or at-planting soil application. Band treatment. Apply in a 7 to 14 inch band incorporated or in-furrow. Treatment will control only moderate infestations of cyst nematodes.
NEFBAAA	Cyst nematodes		
NEJBBAA	Lesion nematodes		
NEOBCAA	Root-knot nematodes (except Javanese)		
NEBBAAA	Sting nematodes		
IMOAAAA	(Thrips)		
NEFBAAA	Cyst nematodes	band: 0.5-1.0 lb/A [36 in. row spacing] or broadcast: 2.0-4.0 lb/A (2 lb/gal SC/L)	Preplant or at-planting soil application. Apply in 10 to 30 gallons per acre. As an in-furrow band treatment, apply over open drill row at the juncture where the seed is covered with soil to assure mixing of the formulation with the soil around the seed. Or, apply to a 7 to 10 inch band in the drill areas up to 1 week before planting or at planting and incorporate 2 to 4 inches into the soil. Or, apply as a broadcast treatment up to 1 week before planting or at planting and incorporate 2 to 4 inches into the soil. Do not apply to areas with severe nematode infestations.
NEGBAAA	Lance nematodes		
NEJBBAA	Lesion nematodes		
NECABAA	Ring nematodes		
NEOBCAA	Root-knot nematodes (except Javanese)		
NELBAAA	Stunt nematodes		
	Spearmint		See Peppermint cluster.
	Squash		See Cantaloupe cluster.

OXAMYL

	Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
701016DA	Strawberry (nonbearing/nursery stock)		Apply to plants that will not bear fruit within 12 months after application. Certain varieties of strawberries are sensitive to oxamyl exhibiting severe phytotoxic symptoms. Known sensitive varieties that should not be treated with oxamyl include Bounty, Canoga (NY1332), Cavalier, Darrow, Durloo, Earlidawn, Earliglow, Empire, Holiday, Marlate, Midway, Mic Mac, NY1409, Ogallalla, Redglow, Redstar, Sequoia, Stark Red, Sunrise, and Viestar. Other varieties may be sensitive. Test on a small scale to determine sensitivity prior to large-scale application.
		Refer to TERRESTRIAL NONFOOD CROP, (Ornamental Plants and Forest Trees), Ornamental Plants, for use and limitation information.	
714018AA	Sweet Potato		0.1 ppm Preplant soil application through 6.0 pounds per acre; or, at-planting (in-furrow) soil application through 4.0 pounds per acre. Do not apply as a transplant water treatment during periods of slow plant growth such as when temperatures fall below 45 F (7.2 C), or crop injury may result. Do not apply in CA.
NEJ8CAA NEGA8AA	Root-knot nematodes (except Javanese) Spiral nematodes	preplant: 4.0-6.0 lb/A (2 lb/gal SC/L) (10% G) or in-furrow: 2.0-4.0 lb/A (2 lb/gal SC/L)	Preplant or at-planting soil application. Apply as a preplant broadcast or band treatment (using proportionately less formulation) in a minimum of 20 gallons per acre. Apply within 1 week of planting and incorporate to a depth of 4 to 6 inches. Or, apply in-furrow in a minimum of 200 gallons per acre of transplant water during the planting of slips.

OXAMYL

	Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
[illegible]	[illegible]		2.0 ppm 1 day preharvest interval tree nut 12.0 pounds per acre per season for foliar application. Preplant soil application through 8.0 pounds per acre. SLN-HI: 1 day preharvest interval through 8.0 pounds per acre by drip irrigation.
IRACAAA INAMCFA	Aphids [SLN] Colorado potato beetle [SLN]	0.5-1.0 lb/A (2 lb/gal SC/L)	Foliar application. Apply in a minimum of 100 gallons. [SLN - May be applied by aircraft in a minimum of 4 to 10 gallons per acre.] Apply when insect first appears and repeat at 5 to 7 day intervals or as needed. [SLN - Repeat at 3 to 7 days or as needed.]
INAMADA	Flea beetles [SLN]		
IRACCUA	Green peach aphid [SLN]		
IMAAAGA	Leafminers [SLN]		
NEHBBBA	Reniform nematode [SLN]		
NEOBCAA	Root-knot nematodes [SLN]		
IOABADA	Serpentine leafminer complex		
NEBBAAA	String nematodes [SLN]		
NCAABAA	Stubby-root nematodes [SLN]		
NELBAAA	Stunt nematodes [SLN]		
IOABAFA	Vegetable leafminer [SLN]		
IRACAAA	(Aphids)	4.0-6.0 lb/A [18-24 in. band width] or 6.0-8.0 lb/A [broadcast] (10% G)	Preplant soil application. Thoroughly incorporate to a depth of 4 to 6 inches immediately after application.
INAMADA	(Fleabeetles)		
IMAAAGA	(Leafminers)		
NEJBBBA	Reniform nematodes (except Javanese)		
NEBBAAA	String nematodes		
NCAABAA	Stubby-root nematodes		
NELBAAA	Stunt nematodes		
IRAEAAA	(whiteflies)		

	Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
	Tomato (continued)		
IRACAAA	Aphids [SLN]	[SLN]	SLN - Use limited to CA.
IMAAAGA	Leafminers [SLN]	0.5-2.0 lb/A (2 lb/gal SC/L)	Soil application. Apply directly to the soil by drip irrigation. Apply with first irrigation of the field at 7 to 10 days.
NEORCAA	Root-knot nematodes		
NEJBCBA	Burrowing nematodes [SLN]	[SLN] 4.0-8.0 lb/A (2 lb/gal SC/L)	SLN - Use limited to HI. Soil application. Apply directly to the soil by drip irrigation. Apply within 1 week after planting and repeat at 14 to 30 day intervals as needed.
IMAAAGA	Leafminers [SLN]		
NEJBBAA	Lesion nematodes [SLN]		
NEOBCAA	Root-knot nematodes [SLN]		
NEBBAAA	Sting nematodes		
NEOBCAA	Root-knot nematodes [SLN]	[SLN] 0.75-1.25 lb/A (2 lb/gal SC/L)	SLN - Use limited to CA. Soil application. Apply 0.75 pound per acre using an injection shank immediately adjacent to the planter furrow. Apply to moist soil and follow as soon as possible with either sprinkler or furrow irrigation water. Apply 1.25 pounds per acre as a side dress 3 to 4 weeks after the initial application. Follow with sprinkler or furrow irrigation water. Apply 1.0 pound per acre 4 to 5 weeks after the second treatment. If "shanking-in" a second and third treatment would be mechanically damaging to a well established early stand, apply in-furrow irrigation water at 1.0 pound per acre.
	Watermelon		See Cantaloupe cluster.

	Site and Pest	Dosages and Formulations	Tolerance, Use, Limitations
	GENERAL NONFOOD CROP		
	Agricultural Crops		
72601-3AA	Tobacco		N.F. Foliar application 5 weeks after transplanting through 1.0 pound per acre; and transplant water application through 0.5 pound per acre or preplant soil application through 6.0 pounds per acre. Over-application may cause stunting of tobacco.
INAMADA NEJBEAA NEOBCAA	Fleabeetles Lesion nematodes (except Javanese) Root-knot nematodes (except Javanese)	preplant: 2.0-6.0 lb/A (2 lb/gal SC/L) (10% G) or transplant water: 0.31-0.5 lb/A or 0.125 oz/10 gal or foliar: 1.0 lb/A (2 lb/gal SC/L)	Preplant soil application, transplant water application, and foliar application. Transplant water application may be applied alone or following preplant soil application. Foliar applications can follow transplant water or preplant soil applications. Apply as a preplant row treatment in an 18 to 24 inch band in a minimum of 20 gallons per acre (12,000 row feet), or as a broadcast and bed spray treatment a minimum of 40 gallons per acre. Incorporate to a depth of 4 to 6 inches by rotary tiller for row treatment or by discing for broadcast and bedding. Transplant within 24 hours after soil treatment. (SLN-NC: May be tank mixed with 1.0 pound active ingredient diazinon in broadcast spray to control wireworms.) As a transplant water application, apply in a minimum of 100 gallons of transplant water per acre using the low rate for 5,600 plants per acre or the high rate for 9,000 plants per acre. Add 0.5 pint solution per plant for small volume dilution. Transplant within 1 week after treatment. For foliar application, add a suitable spreader sticker and apply twice. First, apply a directed spray in 2 gallons 2 weeks after transplanting. Add.

	Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
	Tobacco (continued)		
			a second directed spray in 20 to 40 gallons depending on plant size 4 to 5 weeks after transplanting. The use of 3 nozzles positioned over and to each side of the row is recommended.
	(Ornamental Plants and Forest Trees)		
/32000AA /32000DA /04001DA /05003DA /02000DA /05004DA /04003DA /05005DA /01016DA	Ornamental Plants		For use only in commercial greenhouses and nurseries. Do not apply the soluble/liquid concentrate formulation to interior plantscapes or potted plants in or around domestic areas such as homes, shopping malls, or commercial buildings. Treat and observe a few plants prior to large-scale application to a single variety. Do not apply foliar treatment to plants under water stress or plants not actively growing.
IRACAAA	Aphids (including apple aphid and green peach aphid)	0.5-1.0 lb/100 gal [max 200 gal/A] or	Foliar application. Apply as needed to maintain control.
INASCSA	Black vine weevil	1.0-2.0 lb/A [max 600 gal/A] or	
IDBFAAA	Fungus gnats		
INBPAZA	Japanese beetle		
IRAFAAA	Leafhoppers	0.375-0.75 oz/5-14 gal/1,000 sq.ft (2 lb/gal SC/L)	
IMAAAGA	Leafminers		
IRAWAAA	Mealybugs		
ILAAABA	Mites		
IDAWABA	Royal palm bug		
IRAAABA	Scales		
IMDAAAA	Thrips		
IRABAAA	Whiteflies		

	Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
	Ornamental Plants (continued)		
		preplant: 6.0-20.0 lb/A or soil mix: 0.3-0.6 oz/cu.yd or postplant: 6.0-20.0 lb/A or 0.6-2.1 g/10 sq.ft (10% G)	Soil application. Apply as a preplant soil application and incorporate to a depth of 4 to 8 inches. If applied in a band, use proportionately less formulation. Or, apply as a soil mix while tumbling in a soil mixer. The rate given is equivalent to 6.0 to 20.0 pounds per acre. Or, apply as a postplant soil application. Immediately after application, apply 1 inch of overhead irrigation to thoroughly wash granules off foliage and into the soil.
NEJB1BA NEJB3AA NEOB0AA NEBBAAA NELBAAA	Burrowing nematodes Lesion nematodes Root-knot nematodes (except Javanese) Sting nematodes Stunt nematodes	preplant: 6.0-8.8 lb/A [min 30 gal/A] (2 lb/gal SC/L) or 6.0-20.0 lb/A (10% G) or soil mix: 0.69 oz/10 gal or 0.17-0.23 oz/cu.yd (2 lb/gal SC/L) or 0.3-0.6 oz/cu.yd (10% G) or foliar: 0.5-1.0 lb/100 gal [max 2.0 lb/A] (2 lb/gal SC/L) or	May be applied as a pretransplant soil application, postplant soil application, as a drench, or as root, corm, or bulb dip. Foliar application may be used alone or a supplement to the aforementioned applications or other nematicide treatments. When transplanting, set plants into soil within 24 hours after application. Apply as a preplant soil application and incorporate to a depth of 4 to 8 inches. If applied in a band, use proportionately less formulation. Apply as a soil mix while tumbling in a soil mixer. The rates given are equivalent to 6.0 to 20.0 pounds per acre depending upon formulation. For foliar application, apply 4 times as a dilute spray at 2 to 3 week intervals. Apply first spray at first full leaf or when plant is in active growth phase. Add a suitable spreader sticker. Apply as a postplant soil application followed immediately by 1 inch of overhead irrigation to thoroughly wash granules off foliage and into the soil. Apply as a liquid drench using 4 to 8 fluid ounces

Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
Ornamental Plants (continued)		
	postplant soil: 6.0-20.0 lb/A or 0.6-2.1 g/10 sq.ft (10% G) or dimecron: 0.25 lb/100 gal. or 0.13 oz/5 gal or 0.0125-0.025 oz/6 in. pot or 0.00625-0.0125 oz/4 in. pot (2 lb/gal SC/L) or dip: 0.5-1.0 lb/100 gal or 0.375-0.75 oz/5 gal (2 lb/gal SC/L)	of solution per 6 inch pot or 2 to 4 fluid ounces per 4 inch pot. As a dip, place roots, corms, or bulbs in the solution for 1 to 30 minutes. Use the higher rate and longer soaking time for more severe nematode infestation.

OXAMYL

[illegible]	Dosages and Formulations	Tolerance, Use, Limitations
[illegible]		
[illegible]		
[illegible]		
[illegible]	Citrus Fruits	
[illegible]	Pear	
[illegible]	Plum	
[illegible]	Peach	
[illegible]	Strawberry	Apply to trees and strawberries that will not bear fruit within 18 months after application. The following strawberries are known to be sensitive to oxamyl and might exhibit phytotoxic symptoms: Bounty, Canoga (NY1368), Cavalier, Darrow, Dunlap, Earlidawn, Earliglow, Empire, Holiday, Midland, Midway, Mic Mac, NY 1409, Ogallala, Redglow, Redstar, Sequoia, Stark Rec, Sunrise, and Viestar.

Refer to GREENHOUSE NONFOOD CROP. (Ornamental Plants and Forest Trees), Ornamental Plants, for use and limitation information.

OXAMYL

Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
GREENHOUSE INTERIOR USE		
(Ornamentals, Plants and Forest Trees)		
/[illegible]CA 4[illegible]CA /[illegible] [illegible] [illegible] [illegible] /0400[illegible]CA /[illegible]1016CA /32000AA	Ornamental Plants	For use only in commercial greenhouses and nurseries. Do not apply the soluble concentrate/liquid formulation to interior plantscapes or potted plants in or around domestic areas such as homes, shopping malls, or commercial buildings. Treat and observe a few plants prior to large-scale application to a single variety.
IRACAAA	Aphids (including apple aphid and green peach aphid)	[SLN] 0.5-1.0 lb/100 gal [max 200 gal/A] or 1.0-2.0 lb/A [max 600 gal/A] or 0.375-0.75 oz/5-14 gal/1,000 sq.ft (2 lb/gal SC/L)
INASCSA	Black vine weevil	
IDBFAAA	Fungus gnats	
INBPAZA	Japanese beetle	
IRAFAAA	Leafhoppers	
IMAAAGA	Leafminers	
IRAWAAA	Mealybugs	
ILAAAEA	Mites	
IDAWAEA	Royal palm bug	
IRAAAEA	Scales	
IMDAAAA	Thrips	
IAEBAGA	Whiteflies	

SLN - Use limited to FL.
Foliar application to greenhouse grown plants. For insects, apply as needed to maintain control. Greenhouse must be completely closed for at least 2 hours following treatment.

	Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
	Ornamental Plants (continued)		
NEC[illegible]	Burrow nematodes	preplant: 6.0-8.0 lb/A or 0.14-0.19 lb/1,000 sq.ft or soil mix: 0.2-0.3 oz/cu.yd or postplant: 6.0-8.0 lb/A or 0.14-0.19 lb/1,000 sq.ft or 0.6-0.8 g/10 sq.ft (10% G) 000304-00415	Soil application to greenhouse grown plants. Apply for insects and nematodes. Apply as a preplant soil application and incorporate to a depth of 4 to 6 inches. If applied in a band, use proportionately less formulation. Or, apply as a soil mix while tumbling in a soil mixer. The rate given is equivalent to 6.0 to 9.0 pounds per acre. Or, apply as a postplant soil application. Immediately after application, apply 1 inch of overhead irrigation to thoroughly wash granules off foliage and into the soil.
NEB[illegible]	Lance nematodes		
NEC[illegible]	Root-knot nematodes (except Javanese)		
NEB[illegible]	Sting nematodes		
NEB[illegible]	Spring crane nematode (SLN)	[SLN] 0.19-0.375 oz/5-14 gal/100 sq.ft (2 lb/gal SC/L)	SLN - Use limited to OH. Foliar application to greenhouse grown Rieger Begonias. Apply to foliage as a directed spray. Apply at 3 to 4 week intervals as needed to maintain control. Greenhouse must be completely closed for at least 2 hours following treatment.

Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
[illegible]		
[illegible] Plants		
[illegible]	**Ornamental [illegible]** (interior plantscapes)	
IAPCAAA Aphids (including apple aphid and green peach aphid)	preplant: 6.0-8.0 lb/A or 0.14-0.19 lb/1,000 sq.ft or soil mix: 0.2-0.3 oz/cu.yd or	Soil application to greenhouse grown plants. Apply for insects and nematodes. Apply as a preplant soil application and incorporate to a depth of 4 to [illegible] inches. If applied in a band, use proportionately less formulation. Or, apply as a soil mix while tumbling in a soil mixer. The rate given is equivalent to 6.0 to 9.0 pounds per acre. Or, apply as a postplant soil application. Immediately after application, apply 1 inch of overhead irrigation to thoroughly wash granules off foliage and into the soil.
INASCBA Black vine weevil	postplant: 6.0-8.0 lb/A or 0.14-0.19 lb/1,000 sq.ft or	
NEJBCBA Burrowing nematodes	0.2-0.3 oz/cu.yd or	
IDBFAAA Fungus gnats	postplant: 6.0-8.0 lb/A or 0.14-0.19 lb/1,000 sq.ft or	
INBPAJA Japanese beetle		
IAFCAAA Leafhoppers		
IMAHAGA Leafminers		
NEJBBAA Lesion nematodes		
IRAWAAA Mealybugs		
ILAAAFA Mites	0.6-0.8 g/100 sq.ft (10% G) 000904-00415	
NEDBCAA Root-knot nematodes (except Javanese)		
IDAWAEA Royal palm bug		
IRAAAFA Scales		
NEBAAFA String nematodes		
IMDAAAA Thrips		
IAAEAAA Whiteflies		
AERIAL A.O. TANK MIX APPLICATIONS		
[illegible] **Aerial Application**		
--	Refer to TERRESTRIAL FOOD CROP (Agricultural Crops)	Cantaloupe [SLN], Celery [SLN], Citrus Fruits [SLN], Cotton [SLN], Cucumber [SLN], Honeydew Melons [SLN], Onion [SLN], Potato [SLN], Squash (summer and winter) [SLN], Tomato [SLN], Watermelons [SLN]

OXAMYL

Site and Pest	Dosages and Formulations	Tolerance, Use, Limitations
[illegible]	[illegible]	
--		Refer to TERRESTRIAL NONFOOD CROP (Non-Food Crops) Tobacco [SLN]

CXAMYL

Listing of Registered Pesticide Products by Formulation

&L4C.[illegible] E 43% formulation intermediate
Examyl (103801)
[illegible] 0358-0[illegible]*
*Currently unavailable for review

&[illegible] [illegible] % crystalline
Examyl (103801)
000352-00371 000769-00524 000904-00415 000904-00417
009779-00253#
#suspended

&[illegible].0015 E [illegible]b/gal. (24%) soluble concentrate/liquid
Examyl (103801)
000352-00372

AZ800031	AZ810025	AZ830008	AZ830014
CA790017	CA800062	CA800063	CA800167
CA820037	CA820051	CA820053	CA820068
CO800001	CT780002	CT790001	DE810011
FL760019	FL770033	FL770044	FL780047
FL810002	FL810042	HI790008	HI810009
HI810013	HI820001	ID830019	IL800006
MI770010	MI820022	MI840005	MI850003
NC810005	ND790023*	NJ840018	NM810021
NY780016	NY780018	NY800003	NY800005
OH780001	OH780010*	OR810033	OR820018
OR830025	OR840020	PA780011	PA780018
PA800024	PA800039	PR780003	PR800005
TX840010	VA780018	VA800021	VA800027
VT790005	VT820003	WA810072	WA830008
WA840023*	WV800001		

*Currently unavailable for review

Listing of Active Ingredient(s) which May Be Included in Tank Mixes

Chemical Abstracts	Common Name (source)	EPA Acceptable Common/Chemical Name
05780-1	oxamyl (ISO)	O,O-dimethyl O-[2-(dimethylamino)-1-methyl-2-oxoethyl] phosphorothioate

-- Use Common Name

APPENDIX IV

BIBLIOGRAPHY APPENDICES

GUIDE TO USE OF THIS BIBLIOGRAPHY

1. CONTENT OF BIBLIOGRAPHY. This bibliography contains citations of all studies considered relevant by EPA in arriving at the positions and conclusions stated elsewhere in the Standard. Primary sources for studies in this bibliography have been the body of data submitted to EPA and its predecessor agencies in support of past regulatory decisions. Selections from other sources including the published literature, in those instances where they have been considered, will be included.

2. UNITS OF ENTRY. The unit of entry in this bibliography is called a "study." In the case of published materials, this corresponds closely to an article. In the case of unpublished materials submitted to the Agency, the Agency has sought to identify documents at a level parallel to the published article from within the typically larger volumes in which they were submitted. The resulting "studies" generally have a distinct title (or at least a single subject), can stand alone for purposes of review, and can be described with a conventional bibliographic citation. The Agency has attempted also to unite basic documents and commentaries upon them, treating them as a single study.

3. IDENTIFICATION OF ENTRIES. The entries in this bibliography are sorted numerically by "Master Record Identifier," or MRID, number. This number is unique to the citation, and should be used at any time specific reference is required. It is not related to the six- digit "Accession Number" which has been used to identify volumes of submitted studies; see paragraph 4(d)(4) below for a further explanation. In a few cases, entries added to the bibliography late in the review may be preceded by a nine- character temporary identifier. These entries are listed after all MRID entries. This temporary identifier number is also to be used whenever specific reference is needed.

4. FORM OF ENTRY. In addition to the Master Record Identifier (MRID), each entry consists of a citation containing standard elements followed, in the case of material submitted to EPA, by a description of the earliest known submission. Bibliographic conventions used reflect the standards o the American National Standards Institute (ANSI), expanded to provide for certain special needs.

a. Author. Whenever the Agency could confidently identify one, the Agency has chosen to show a personal author. When no individual was identified, the Agency has shown an identifiable laboratory or testing facility as author. As a last resort, the Agency has shown the first submitter as author.

b. Document Date. When the date appears as four digits with no question marks, the Agency took it directly from the document. When a four- digit date is followed by a question mark, the bibliographer deduced the date from evidence in the document. When the date appears as (19??), the Agency was unable to determine or estimate the date of the document.

c. Title. In some cases, it has been necessary for Agency bibliographers to create or enhance a document title. Any such editorial insertions are contained between square brackets.

d. Trailing Parentheses. For studies submitted to the Agency in the past, the trailing parentheses include (in addition to any self- explanatory text) the following elements describing the earliest known submission:

(1) Submission Date. The date of the earliest known submission appears immediately following the word "received."

(2) Administrative Number. The next element, immediately following the word "under," is the registration number, experimental use permit number, petition number, or other administrative number associated with the earliest known submission.

(3) Submitter. The third element is the submitter, following the phrase "submitted by." When authorship is defaulted to the submitter, this element is omitted.

(4) Volume Identification (Accession Numbers). The final element in the trailing parentheses identifies the EPA accession number of the volume in which the original submission of the study appears. The six- digit accession number follows the symbol "CDL," standing for "Company Data Library." This accession number is in turn followed by an alphabetic suffix which shows the relative position of the study within the volume. For example, within accession number 123456, the first study would be 123456- A; the second, 123456- B; the 26th, 123456- Z; and the 27th, 123456- AA.

OFFICE OF PESTICIDE PROGRAMS

REGISTRATION STANDARD BIBLIOGRAPHY

Citations Considered to be Part of the Data Base Supporting Registrations Under the Oxamyl Standard

MRID	CITATION
00028728	E.I. du Pont de Nemours & Company (1974) Metabolism of Oxamyl. Summary of studies 097651-B through 097651-F. (Unpublished study received Jun 14, 1976 under 352-372; CDL:097651-A)
00028732	Harvey, J., Jr. (1975?) Metabolism of 14C-Oxamyl in the Lactating Goat. (Unpublished study received Jun 14, 1976 under 352-372; submitted by E.I. du Pont de Nemours & Co., Wilmington, Del.; CDL:097651-F)
00030920	E.I. du Pont de Nemours & Company (1977) Residue Data: Soybeans. (Unpublished study received May 30, 1980 under 352-372; CDL: 099443-F)
00036935	Atkins, E.L.; Greywood, E.A.; Macdonald, R.L. (1975) Toxicity of Pesticides and Other Agricultural Chemicals to Honey Bees: Laboratory Studies. By University of California, Dept. of Entomology. ?: UC, Cooperative Extension. (Leaflet 2287; published study.)
00037130	Holt, R.F.; Pease, H.L. (1974) Results of Tests on the Amount of Residue Remaining on Treated Crops: "Oxamyl". Includes undated method entitled: Determination of Oxamyl residues using flame photometric gas chromatography. (Unpublished study received Jun 25, 1975 under 5F1650; submitted by E.I. du Pont de Nemours &
00039511	Harvey, J., Jr.; Gerike, P. (19??) Biodegradation of 14C-Oxamyl in Peanuts. Interim rept. (Unpublished study received on unknown date under 3G1349; submitted by E.I. du Pont de Nemours & Co., Wilmington, Del.; CDL:093610-J)
00039513	Manlove, L. (1973) Oxamyl Livestock Feeding Studies: Milk and Meat. Unpublished study received on unknown date under 3G1349; submitted by E.I. du Pont de Nemours & Co., Inc., Wilmington, Del.; CDL:093610-L)
00040494	Harvey, J., Jr.; Han, J.C. (1977) Decomposition of Oxamyl in Soil and Water. (Unpublished study received Jul 21, 1977 under 352-372; submitted by E.I. du Pont de Nemours & Co., Wilmington, Del.; CDL:096301-A)

OFFICE OF PESTICIDE PROGRAMS

REGISTRATION STANDARD BIBLIOGRAPHY

Citations Considered to be Part of the Data Base Supporting Registrations Under the Oxamyl Standard

MRID CITATION

00040496 Harvey, J., Jr.; Bellina, R.; Morales, R.; et al. (1970) Metabolism and Biodegradation of Oxamyl. (Unpublished study received Jul 21, 1977 under 352-372; submitted by E.I. du Pont de Nemours & Co., Wilmington, Del.; CDL:096301-C)

00040592 E.I. du Pont de Nemours & Company, Incorporated (1976) Livestock Feeding Study. (Unpublished study received Oct 21, 1976 under 6F1696; CDL:095326-A)

00040594 Shirasu, Y.; Moritani, M.; Watanabe, K. (1976) Oxamyl Mutagenicity Study Using Bacteria. (Unpublished study received Oct 21, 1976 under 6F1696; prepared by Institu4te of Environmental Toxicology Toxicity Dept., submitted by E.I. du Pont de Nemours & Co., Inc., Wilmington, Del.; CDL:095326-C)

00040597 Harvey, J., Jr. (1975) Metabolism of Oxamyl in Tomato Fruit. (Unpublished study received Oct 21, 1976 under 6F1696; submitted by E.I. du Pont de Nemours & Co., Inc., Wilmington, Del.; CDL: 095326-F)

00040603 E.I. du Pont de Nemours & Company, Incorporated (1976) Results of Tests on the Amount of Residue Remaining on Treated Crops. (Unpublished study received Oct 21, 1976 under 6F1696; CDL:-095326-N)

00040605 Han, J.C.Y.; Harvey, J., Jr. (1975) Characterization of 14C-Harvest Residues in Potato Tubers. (Unpublished study received Oct 30, 1975 under 6F1695; submitted by E.I. du Pont de Nemours & Co., Inc., Wilmington, Del.; CDL:095227-B)

00040607 E.I. du Pont de Nemours & Company, Incorporated (1975) Oxamyl Residue Data--Potatoes (Tubers). (Unpublished study received Oct 30, 1975 under 6F1695; CDL:095227-D)

00048060 E.I. du Pont de Nemours & Company, Incorporated (1975) Results of Tests on the Amount of Residue Remaining on Treated Crops: ^Oxamyl|. (Unpublished study received Oct 30, 1975 under 6F1696; CDL:095228-B)

OFFICE OF PESTICIDE PROGRAMS

REGISTRATION STANDARD BIBLIOGRAPHY

Citations Considered to be Part of the Data Base Supporting Registrations Under the Oxamyl Standard

MRID CITATION

00061648 E.I. du Pont de Nemours and Company, Incorporated (1976) Data Supporting the Use of Vydate-(R)\ L Oxamyl Insecticide/Nematicide on Celery. (Unpublished study received Oct 27, 1976 under 352-372; CDL:226801-A)

00063009 Hoberman, A.M.; Mossburg, P.A.; Wolfe, G.W.; et al. (1980) Teratology Study in Rabbits: Oxamyl: Project No. 201-545; HLO-0801-80. Final rept. (Unpublished study received Nov 21, 1980 under 352-371; prepared by Hazleton Laboratories America, Inc., submitted by E.I. du Pont de Nemours & Co., Wilmington, Del.; CDL: 099754-B)

00063011 Dashiell, O.L.; Hinckle, L. (1980) Oral LD50 Test in Rats--EPA Proposed Guidelines: Haskell Laboratory Report No. 775-80. (Unpublished study received Nov 21, 1980 under 352-371; submitted by E.I. du Pont de Nemours & Co., Wilmington, Del.; CDL:099754-D)

00063012 Dulka, J.J.; Julius, A.J. (1978) Microbial Degradation of 1--14\C-Oxamyl in Soil. (Unpublished study received Nov 21, 1980 under 352-371; submitted by E.I. du Pont de Nemours & Co., Wilmington, Del.; CDL:099754-E)

00063016 E.I. du Pont de Nemours & Company (1980) Residue Summary: Oxamyl--Pears. (Unpublished study received Nov 21, 1980 under 352-371; CDL:099754-L)

00066902 Tayfun, F.O. (1969) Acute Dust Inhalation Toxicity: Haskell Laboratory Report No. 280-69. (Unpublished study received Nov 29, 1972 under 3G1316; submitted by E.I. du Pont de Nemours & Co., Inc., Wilmington, Del.; CDL:092249-N)

00066903 Tayfun, F.O. (1969) One-hour Inhalation Toxicity: Haskell Laboratory Report No. 281-69. (Unpublished study received Nov 29, 1972 under 3G1316; submitted by E.I. du Pont de Nemours & Co., Inc., Wilmington, Del.; CDL:092249-O)

OFFICE OF PESTICIDE PROGRAMS

REGISTRATION STANDARD BIBLIOGRAPHY

Citations Considered to be Part of the Data Base Supporting Registrations Under the Oxamyl Standard

MRID	CITATION
00066914	Knott, W.B.; Johnston, C.D. (1969) Insecticide 1410: Evaluation of Acute LC\50~ for Bluegill Sunfish. (Unpublished study received Nov 29, 1972 under 3G1316; prepared by Woodard Research Corp., submitted by E.I. du Pont de Nemours & Co., Inc., Wilmington, Del.; CDL:092249-AA)
00066916	Knott, W.B.; Johnston, C.D. (1969) Insecticide 1410: Evaluation of Acute LC\50~ for Rainbow Trout. (Unpublished study received Nov 29, 1972 under 3G1316; prepared by Woodard Research Corp., submitted by E.I. du Pont de Nemours & Co., Inc., Wilmington, Del.; CDL:092249-AC)
00067234	E.I. du Pont de Nemours & Company (1980) Data Supporting Special Local Need Labeling for Use of Vydate~(R)\ L Insecticide/Nematicide on Apples in the State of Illinois. (Unpublished study received Jul 24, 1980 under IL 80/6; submitted by state of Illinois for du Pont; CDL:243033-A)
00076813	Adamik, E.R.; Criswell, M.K.; Mahler, S.C.; et al. (1981) Long Ter Feeding Study in Mice with Oxamyl: Project No. WIL-77033; HLO-252-81. (Unpublished study received May 29, 1981 under 352-372 prepared by WIL Research Laboratories, Inc., submitted by E.I. du Pont de Nemours & Co., Wilmington, Del.; CDL:070136-A; 070137; 070138; 070139; 070140; 070141; 070142; 070143)
00081618	Interregional Research Project Number 4 (1981) Summary of Residue Data: ^Oxamyl/Eggplant Field Trials|. (Compilation; unpublishe study received Sep 4, 1981 under 1E2566; CDL:070295-A)
00083522	E.I. du Pont de Nemours & Company (1978) Results of Tests on the Amount of Residue Remaining on Treated Crops: ^Oxamyl|. (Unpub lished study received Jul 30, 1979 under 352-371; CDL:098845-G)
00083524	Zahnow, E.W. (1978) Oxamyl-chicken and Egg Study. (Unpublished study received Jul 30, 1978 under 352-371; submitted by E.I. du Pont de Nemours & Co., Wilmington, Del.; CDL:09^845-K)

OFFICE OF PESTICIDE PROGRAMS

REGISTRATION STANDARD BIBLIOGRAPHY

Citations Considered to be Part of the Data Base Supporting Registrations Under the Oxamyl Standard

MRID CITATION

00083525 Harvey, J., Jr.; Han, J.C.Y.; Reiser, R.W. (1978) Metabolism of oxamyl in plants. Journal of Agricultural and Food Chemistry 26(3):529-536. (Also-In-unpublished submission received Jul 30, 1979 under 352-371; submitted by E.I. du Pont de Nemours & Co., Wilmington, Del.; CDL:098845-L)

00084889 E.I. du Pont de Nemours & Company (1980) ^Residues of Oxamyl on Tomatoes|. (Compilation; unpublished study received Oct 15, 1981 under 352-372; CDL:2346106-A)

00094660 Dudeck, S.; Bristol, K.L. (1981) Final Report: Single-dose Oral Toxicity Study in Mallard Ducks: Project No. 201-543. (Unpublished study received Jan 29, 1982 under 352-372; prepared by Hazleton Laboratories America, Inc., submitted by E.I. du Pont de Nemours & Co., Inc., Wilmington, Del.; CDL:246726-A)

00094664 Muska, C.F.; Brittelli, M.R.; Hall, C.L. (1981) Chronic Toxicity of Oxamyl to-Daphnia magna-:: Haskell Laboratory Report No. 580-81. (Unpublished study received Jan 29, 1982 under 352-372; submitted by E.I. du Pont de Nemours & Co., Inc., Wilmington, Del.; CDL:246726-E)

00113339 E.I. du Pont de Nemours & Co., Inc. (1977) ^Determination of Oxamyl Residues on Treated Crops|. (Compilation; unpublished study received Mar 17, 1977 under 352-372; CDL:096042-A)

00113341 E.I. du Pont de Nemours & Co., Inc. (1976). Results of Tests on the Amount of Residue Remaining on Treated Crops: ^Oxamyl|. (Compilation; unpublished study received Jan 17, 1977 under 352-372; CDL:095720-A)

00113343 E.I. du Pont de Nemours & Co., Inc. (1976) Results of Tests on the Amount of Residue Remaining on Treated Crops: ^Oxamyl|. (Compilation; unpublished study received Jan 18, 1977 under 352-372; CDL:095719-A)

00113357 E.I. du Pont de Nemours & Co., Inc. (1974) ^Residues of DPX 1410 in Peanuts and Various Other Crops|. (Compilation; unpublished study received Aug 1, 1974 under 3G1316; CDL:094669-B)

00113370 E.I. du Pont de Nemours & Co., Inc. (1974) Residue Data: ^Oxamyl|. (Compilation; unpublished study received Oct 31, 1974 under 3G1316; CDL:095009-C)

OFFICE OF PESTICIDE PROGRAMS

REGISTRATION STANDARD BIBLIOGRAPHY

Citations Considered to be Part of the Data Base Supporting Registrations Under the Oxamyl Standard

MRID CITATION

00113373 E.I. du Pont de Nemours & Co., Inc. (1972) Results of Tests on the Amount of Residue Remaining on Treated Crops: ^Oxamyl|. (Compilation; unpublished study received Dec 1, 1972 under 3G1316; CDL:095011-L)

00113376 E.I. du Pont de Nemours & Co., Inc. (1973) Vydate Oxamyl Insecticide/Nematicide: Fish Residue Study. (Compilation; unpublished study received Aug 1, 1973 under 352-371; CDL:009019-A)

00113380 E.I. du Pont de Nemours & Co., Inc. (1977) Results of Tests on the Amount of Residue Remaining on Treated Crops: ^Oxamyl|. (Compilation; unpublished study received Aug 17, 1977 under 352-372; CDL:096320-C)

00113387 E.I. du Pont de Nemours & Co., Inc. (1979) Results of Tests on the Amount of Residue Remaining on Treated Crops: ^Oxamyl|. (Compilation; unpublished study received Sep 14, 1979 under 352-372; CDL:098958-A)

00113389 E.I. du Pont de Nemours & Co., Inc. (1978) Results of Tests on the Amount of Residue Remaining on Treated Crops: ^Oxamyl|. (Compilation; unpublished study received Nov 17, 1978 under 9E2148; CDL:097629-A; 098399)

00113410 E.I. du Pont de Nemours & Co., Inc. (1976) ^Study: Vydate L Residue on Celery|. (Compilation; unpublished study received Jul 28, 1978 under 352-372; CDL:234575-A)

00113412 Heitmuller, T. (1978) Acute Toxicity of H-11738 to Grass Shrimp ...: Report No. BP-78-4-066. (Unpublished study received Sep 13, 1978 under 352-EX-89; prepared by EG & G, Bionomics, submitted by E.I. du Pont de Nemours & Co., Inc., Wilmington, DE; CDL: 235326-A)

00113414 Hollister, T. (1978) Acute Toxicity of H-11738 to Embryos of Eastern Oysters ...: Report No. BP-78-4-067. (Unpublished study received Sep 13, 1978 under 352-EX-89; prepared by EG & G, Bionomics, submitted by E.I. du Pont de Nemours & Co., Inc., Wilmington, DE; CDL:235326-C)

OFFICE OF PESTICIDE PROGRAMS

REGISTRATION STANDARD BIBLIOGRAPHY

Citations Considered to be Part of the Data Base Supporting Registrations Under the Oxamyl Standard

MRID CITATION

00113419 Hawaii (1978) ^Study: Vydate Residues on Tomatoes|. (Unpublished study received Oct 29, 1979 under HI 79/8; CDL:241281-B)

00116609 Roberts, N.; Phillips, C.; Chanter, D.; et al. (1982) The Effects of Dietary Inclusion of Oxamyl on Reproduction in the Mallard Duck: Report No. DPT 106WL/81992. (Unpublished study received Oct 3, 1982 under 352-372; prepared by Huntingdon Research Centre, Eng., submitted by E.I. du Pont de Nemours & Co., Inc., Wilmington, DE; CDL:248464-A)

00116610 Roberts, N.; Phillips, c.; Chanter, D.; et al. (1982) The Effects of Dietary Inclusion of Oxamyl on Reproduction in the Bobwhite Quail: DPT 107 WL/8261. (Unpublished study received Oct 3, 1982 under 352-372; prepared by Huntingdon Research Centre, Eng., submitted by E.I. du Pont de Nemours & Co., Inc., Wilmington, DE; CDL:248465-A)

00126690 Interregional Research Project No. 4 (1983) Results of Tests on the Amount of Residue Remaining on Treated Crops: ^Oxamyl|. (Compilation; unpublished study received Mar 28, 1983 under 352-372; CDL:071504-A)

00129354 E.I. du Pont de Nemours & Co., Inc. (1983) Du Pont Vydate L Insecticide/Nematicide: Bananas: Residue Data. (Compilation; unpublished study received May 23, 1983 under 3F2833; CDL:071622-A)

00134709 Harvey, J. (1973) Additional Studies on the Metabolism and Biodegradation of Oxamyl in Plants. (Unpublished study received 1973 under 3G1316; submitted by E.I. du Pont de Nemours & Co., Inc., Wilmington, DE; CDL:092126-B)

00138996 Interregional Research Project No. 4 (1983) The Results of Tests on the Amount of Oxamyl Residues Remaining in or on Peppers, Including a Description of the Analytical Method Used. (Compilation; unpublished study received Feb 16, 1984 under 352-372; CDL:072368-A)

00141395 Chrzanowski, R. (1984) Soil Column Adsorption Studies with Vydate Oxamyl Insecticide/Nematicide. Unpublished study prepared by E.I. du Pont de Nemours & Co., Inc. 11 p.

OFFICE OF PESTICIDE PROGRAMS

REGISTRATION STANDARD BIBLIOGRAPHY

Citations Considered to be Part of the Data Base Supporting Registrations Under the Oxamyl Standard

MRID	CITATION
00142126	E.I.du Pont de Nemours and Co., Inc. (1984) Du Pont Vydate L Insecticide/Nematicide [Use on Bananas]. Unpublished compilation. 90 p.
00143312	E.I. du Pont de Nemours & Co., Inc. (19??) Oxamyl/DMCF Residue Analyses - Cucurbits. Unpublished study. 79 p.
00143315	Dickhaus, S.; Heisler, E. (1980) Irritant Effects of Molinate on Rabbit Eye: 1-3-258-80. Unpublished study prepared by Pharmatox. 10 p.
00147614	E. I. Du Pont De Nemours and Company (1980) Residue Data Supporting the use of Vydate L Insecticide/Nematicide on Celery. Unpublished study. 10 p.
00149231	McIntosh, C.; Jenkins, J.: Burgoyne, D.; et al. (1984) A Two- Year Field Study to Determine the Fate of Oxamyl in Soil during Flood Irrigation. Unpublished study prepared by E.I. DuPont de Nemours and Co. Inc. 14 p.
00154748	Rao, P.; Wheeler, W.; Dickson, D. (1983) Sorption, Leaching, and Degradation of Nematicides (Oxamyl and Phenamiphos) in Three Southeastern U.S. Soils: 1982 Short-term PIAP Project: Final Report (Report # 2). Unpublished study prepared by University of Florida. 12 p.
00163605	E. I.du Pont de Nemours & Co., Inc. (1986?) Du Pont "Vydate" L Insecticide/Nematicide: [Foliar Dissipation Study]. Unpublished compilation. 99 p.
00163606	Du Pont Canada Inc. (1982) Vydate Oxamyl Insecticide/ Nematicide: Applicator Exposure Study. Unpublished study. 5 p.
05001991	Stevenson, J.H. (1978) The acute toxicity of unformulated pesticides to worker honey bees (:Apis mellifera L.). Plant Pathology 27(1):38-40.

APPENDIX V

FORMS APPENDICES

OMB Approval No. 2000-0468 (Expires 12-31-83)

FIFRA SECTION 3(C)(2)(B) SUMMARY SHEET	EPA REGISTRATION NO.
PRODUCT NAME	
APPLICANT'S NAME	DATE GUIDANCE DOCUMENT ISSUED

With respect to the requirement to submit "generic" data imposed by the FIFRA section 3(C)(2)(B) notice contained in the referenced Guidance Document, I am responding in the following manner:

☐ 1. I will submit data in a timely answer to satisfy the following requirements. If the test procedures I will use deviate from (or are not specified in) the Registration Guidelines or the Protocols contained in the Reports of Expert Groups to the Chemicals Group, OECD Chemicals Testing Programme, I enclose the protocols that I will use:

Attach separate page with a list of the data requirements your company agrees to satisfy.

☐ 2. I have entered into an agreement with one or more other registrants under FIFRA section 3(C)(2)(B)(iii) to satisfy the following data requirements. The tests, and any required protocols, will be submitted to EPA by:

NAME OF OTHER REGISTRANT

Attach list of data requirements

☐ 3. I enclose a completed "Certification of Attempt to Enter Into an Agreement with Other Registrants for Development of Data" with respect to the following data requirements:

☐ 4. I request that you amend my registration by deleting the following uses (this option is not available to applicants for new products):

☐ 5. I request voluntary cancellation of the registration of this product. (This option is not available to applicants for new products.)

REGISTRANT'S AUTHORIZED REPRESENTATIVE	SIGNATURE	DATE

EPA Form 8580-1 (10-82)

OMB Approval No. 2000-0468 (Expires: 12-31-83)

CERTIFICATION OF ATTEMPT TO ENTER INTO AN AGREEMENT WITH OTHER REGISTRANTS FOR DEVELOPMENT OF DATA

(To qualify, certify ALL four items)

1. I am duly authorized to represent the following firm(s) who are subject to the requirements of a Notice under FIFRA Section 3(c)(2)(B) contained in a Guidance Document to submit data concerning the active ingredient:

GUIDANCE DOCUMENT DATE

ACTIVE INGREDIENT

NAME OF FIRM	EPA COMPANY NUMBER

(This firm or group of firms is referred to below as "my firm".)

2. My firm is willing to develop and submit the data as required by that Notice, if necessary. However, my firm would prefer to enter into an agreement with one or more other registrants to develop jointly, or to share in the cost of developing, the following required items or data:

3. My firm has offered in writing to enter into such an agreement. Copies of the offers are attached. That offer was irrevocable and included an offer to be bound by an arbitration decision under FIFRA Section 3(c)(2)(B)(iii) if final agreement on all terms could not be reached otherwise. This offer was made to the following firm(s) on the following date(s):

NAME OF FIRM	DATE OF OFFER

However, none of those firm(s) accepted my offer.

4. My firm requests that EPA not suspend the registration(s) of my firm's product(s) if any of the firms named in paragraph (3) above have agreed to submit the data listed in paragraph (2) above in accordance with the Notice. I understand EPA will promptly inform me whether my firm must submit data to avoid suspension of its registration(s) under FIFRA Section 3(c)(2)(B). (This statement does not apply to applicants for new products.) I give EPA permission to disclose this statement upon request.

TYPED NAME	SIGNATURE	DATE

EPA Form 8580-6 (10-82)

PRODUCT SPECIFIC DATA REPORT

EPA Reg. No. _____ Date _____

Guidance Document for _____

Registration Guideline No.	Name of Test	Test not required for my product listed above (check below)	I am complying with data requirements by: Citing MRID Number or EPA Accession Number	Submitting Data (Attached)	(For EPA Use Only) Accession Number Assigned
§158.120 PRODUCT CHEMISTRY					
61-1	Identity of ingredients				
61-2	Statement of composition				
61-3	Discussion of formation of ingredients				
62-1	Preliminary analysis				
62-2	Certification of limits				
62-3	Analytical methods for enforcement limits				
63-2	Color				
63-3	Physical state				
63-4	Odor				
63-5	Melting point				
63-6	Boiling point				
63-7	Density, bulk-density, or specific gravity				
63-8	Solubility				
63-9	Vapor pressure				
63-10	Dissociation constant				
63-11	Octanol/water partition coefficient				
63-12	pH				

OMB Approval No. 2070-0057
Expiration Date 11/30/89

GENERIC DATA EXEMPTION STATEMENT

EPA Product Registration Number: _____

Registrant's Name and Address: _____

_____

As an authorized representative of the registrant of the product identified above, I certify that:

(1) I have read and am familiar with the terms of the Notice from EPA dated _____ concerning a requirement for submission of "generic" data on the active ingredient _____ named under FIFRA Section 3(c)(2)(B).

(2) My firm requests that EPA not suspend the registration of our product, despite our lack of intent to submit the generic data in question, on the grounds that the product contains the active ingredient solely as the result of the incorporation into the product of another product which contains that active ingredient, which is registered under FIFRA Section 3, and which is purchased by us from another producer.

(3) An accurate Confidental Statement of Formula(CSF) for the above-identified product is attached to this statement. That formula statement indicates, by company name, registration number, and product name, the source of the subject active ingredient in my firm's product, or

The CSF dated _____ on file with EPA is complete, current and accurate and contains the information requested on the current CSF Form No. 8570-4. The registered source(s) of the above named active ingredient in my product(s) is/are _____ and their registration number(s) is/are _____ .

My firm will apply for an amendment to the registration prior to changing the source of the active ingredient in our product.

(4) I understand, and agree on behalf of my firm, that if at any time any portion of this Statement is no longer true, or if my firm fails to comply with the undertakings made in this Statement, my firm's product's registration may be suspended under FIFRA Section 3(c)(2)(B).

(5) I further understand that if my firm is granted a generic data exemption for the product, my firm relies on the efforts of other persons to provide the Agency with the required generic data. If the registrant(s) who have committed to generate and submit the required data fail to take appropriate steps to meet requirements or are no longer in compliance with this Notice's data requirements, the Agency will consider that both they and my firm are not in compliance and will normally initiate proceedings to suspend the registrations of my firm's product(s) and their product(s), unless my firm commits to submit and submits the required data in the specified time frame. I understand that, in such cases, the Agency generally will not grant a time extension for submitting the data.

Registrant's authorized representative: _____
(Signature)

Dated: _____ _____
(Typed)

EPA Form 8570-27

United States
Environmental Protection
Agency

Office of
Pesticides and Toxic Substances
Washington DC 20460

June 1987

Pesticides

EPA

Guidance for the Reregistration of Pesticide Products Containing Oxamyl as the Active Ingredient