

GUIDANCE FOR THE
REREGISTRATION OF PESTICIDE PRODUCTS
(REGISTRATION STANDARD)

CONTAINING
AS THE ACTIVE INGREDIENT

ORYZALIN
Case number: GS-0186

ENVIRONMENTAL PROTECTION AGENCY
OFFICE OF PESTICIDE PROGRAMS
WASHINGTON, D.C. 20460

TABLE OF CONTENTS

	<u>Page</u>
INTRODUCTION	1
PART I. REGULATORY ASSESSMENT	3
A. Description of Chemical	
B. Summary of Assessment	
C. Agency Assessment	
D. Regulatory Position and Rationale	
PART II. REQUIREMENTS FOR REGISTRATION	17
A. Criteria for Registration	
B. Acceptable Ranges and Limits	
C. Required Labeling	
D. Submission of Generic Data	
E. Instructions for Submission	
APPENDICES	
A - EPA Index to Pesticide Chemicals - Oryzalin . .	45
B - Labeling Requirements	121
1. Submission of Revised Labeling	
2. 40 CFR 162.10 Labeling Requirements	
3. Table of Labeling Requirements	
4. Physical/Chemical Hazards	
Labeling Statement	
C - Container Disposal Instructions	143
D - Farmworker Safety Label Requirements	145
E - FIFRA §3(c)(2)(B) Summary Sheet	
(EPA Form 8580-1).	154
F - Certification of Attempt to Enter Into	
an Agreement with Other Registrants for	
Development of Data (EPA Form 8580-6)	156
G - Formulator's Exemption Statement.	158
BIBLIOGRAPHY	160

INTRODUCTION

The Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), Section 3(g), directs EPA to reregister all pesticides as expeditiously as possible.

To carry out this task, EPA has established the Registration Standards program, which reviews all pesticide products containing active ingredients first registered before January 1, 1977. Pesticides are reviewed in use clusters which have been ranked to give earliest review to pesticides used on food and feed crops.

The Registration Standards program involves a thorough review of the scientific data base underlying pesticide registrations and an identification of essential but missing studies which may not have been required when the product was initially registered or studies that are now considered insufficient. EPA's reassessment results in the development of a regulatory position, contained in a Registration Standard, on each pesticide and its uses. The Agency may require the registrant to modify product labels to provide additional precautionary statements, restrict the use of the pesticide to certified applicators, provide reentry intervals, modify uses or formulation types, specify certain packaging limitations, or other requirements to assure that proper use of the pesticide will not result in unreasonable adverse effects on the environment.

The scientific review, which is not contained in the Registration Standard, but is available from the National Technical Information Service, concentrates on the technical grade of the active ingredient and identifies missing generic data. However, during the review of these data, the Agency is also looking for potential hazards that may be associated with the end-use (formulated) products that contain the active ingredient. If the Agency has serious concerns, the end-use products will be addressed as part of the Registration Standards program and regulatory actions, to the extent necessary to protect the public, will be proposed.

This Registration Standard contains the results of the Agency's review of all registered manufacturing-use products (MPs) containing oryzalin as the sole active ingredient. During this review, the Agency evaluated all MPs and Section 3 and 24(c) uses registered for oryzalin.

Part I, Regulatory Assessment, of this Standard contains a description of oryzalin and a summary of the Agency's assessment of the chemical. This is followed by a more thorough discussion of the data base and the resulting regulatory position.

Part II, Requirements for Registration, of the Registration Standard addresses the necessary requirements for maintaining registrations of products containing oryzalin, along with the instructions for submission of the data and information to the Agency.

PART I. REGULATORY ASSESSMENT

The Agency has conducted a thorough review of the scientific data base on orzyalin. This Part of the Standard sets forth the results of that review beginning with a description of the chemical and its uses, followed by a discussion of the data base and the resultant regulatory position. A summary of the Agency's review and position precedes the discussion.

A. DESCRIPTION OF CHEMICAL

1. Description

Common Name : Orzyalin
Chemical Name : 3,5-dinitro-N⁴,N⁴-dipropylsulfan-
11amide
Empirical Formula : C₁₂H₁₈N₄O₆S
Trade Names : Ryzelan, SURFLAN, FL-119
Chemical Abstracts
Service (CAS) No. : 19044-88-3
OPP (Shaughnessy) No. : 104201

2. Use Profile

Type of Pesticide : Preemergence Herbicide
Pest Controlled : Annual Grasses; Broadleaf Weeds
Registered Uses : Croplands; Noncroplands; Forestry
Predominant Use : Soybeans (86.1 percent)
Method of Application: Broadcast; Banded Around; Aerial;
Irrigation Systems
Mode of Activity : Inhibition of root and shoot
growth of germinating weed
seedlings
Formulations -
Technical : 95 percent active ingredient
End Use : Emulsifiable Concentrate;
Wettable Powder; Flowable
Liquid

3. History. Oryzalin was patented by Eli Lilly Company (U.S. Patent No. 3,367,949) in 1969 and was first registered for use in 1974. Technical oryzalin is being produced in the United States by Elanco Products Company of Indianapolis, Indiana, and at the present time, Elanco is the sole registrant of products containing oryzalin.

B. SUMMARY OF ASSESSMENT. The Agency has reviewed all data submitted to support the registration of oryzalin. Based on the review of these data, the Agency has reached the following conclusions. See Section C of this Part for a discussion of this review.

1. Oryzalin poses a limited oncogenic risk from dietary exposure. The pesticide was classified B2, a probable human carcinogen, based on the following:

(a) Oryzalin was associated with significantly elevated incidences of thyroid gland tumors and three different categories of skin tumors in male and female rats. A significant positive trend for liver adenomas also occurred in male rats but the elevated incidence of this tumor type at the high dose level was only of borderline statistical significance.

(b) Structural analogs of oryzalin have been reported to cause similar types of tumors in rats.

However, the Agency has some reservation in the classification of oryzalin as a B2 oncogen, i.e., the tumors occurred in only one species of rodent (negative in the mouse), and mutagenicity studies were essentially negative.

2. Applicator risk can be reduced to acceptable limits through the use of protective clothing and gloves.

3. Oryzalin has significant benefits that are not outweighed by the identified risks.

As a result of this review, the Agency has identified missing data to evaluate the environmental and human risks associated with the use of oryzalin. These data must be developed in order to maintain registrations of products or register new products containing oryzalin. The table in this section summarizes the data gaps, in addition to product chemistry information. Please note that this is only a summary and more details can be obtained by referring to Table A, Section D of Part II.

The Agency has also determined that label revisions must be made in the following areas:

- | | |
|--------------------------------|----------------------------|
| o Grazing Restrictions | o Protective Clothing |
| o Rotational Crop Restrictions | o Chemigation Instructions |
| o Use Patterns | o Posting Requirement |
| o Environmental Hazards | |

SUMMARY OF DATA GAPS - ORYZALIN
(Refer to Table A, Section D, Part II,
for details regarding specific requirements)

DATA REQUIREMENT

REMARKS

158.125 Residue Chemistry:

171-4 Nature of Residue (Metabolism)

158.135 Toxicology:

83-1 Chronic Toxicity (Non-rodent)
84-2 Mutagenicity Testing

Chronic toxicity study design must include
evaluation of thyroid gland chemistry and
pathology to more fully assess thyroid function

158.130 Environmental Fate:

161-1/4 Degradation Studies
162-1/3 Metabolism Studies
163-1/2 Mobility Studies
164-1/5 Dissipation Studies
165-1/5 Accumulation Studies

Ground Water Assessment

Section D contains a discussion of the Agency's review which resulted in these determinations and Section C of Part II contains the required wording for the labeling revisions.

- C. AGENCY ASSESSMENT. The Agency has conducted a thorough review of the scientific data base for oryzalin. The conclusions and requirements to be imposed as a result of this review are summarized above. The following is a discussion of the results of the review.

1. Tolerance Reassessment. Tolerances have been established for residues of oryzalin on a wide range of raw agricultural products listed in 40 CFR 180.304. The toxicity data considered in support of these tolerances include:
 - a. A two-year mouse feeding study with a no-observed-effect level (NOEL) of 500 ppm (71.4 mg/kg/day) and no oncogenic effects observed up to 3650 ppm (547.5 mg/kg/day);
 - b. A two-year rat chronic feeding study with a NOEL of 300 ppm; positive oncogenic effects were noted;
 - c. A one year mouse chronic feeding study with a NOEL of 500 ppm;
 - d. A three-month rat subchronic feeding study with a NOEL of 1600 ppm (80 mg/kg/day);
 - e. A three-month mouse subchronic feeding study with a NOEL of 3650 ppm (547.5 mg/kg/day);
 - f. A three-month dog subchronic feeding study with a NOEL of 750 ppm (18.75 mg/kg/day);
 - g. A three-generation rat reproduction study with a NOEL of 250 ppm (12.5 mg/kg/day);
 - h. Rat teratology studies with NOELs of 225 mg/kg/day and 2250 ppm; and
 - i. Rabbit teratology studies with NOELs of 125 mg/kg/day.

The dog was determined to be the most sensitive species to oryzalin. Therefore, the provisional acceptable daily intake (PADI) for humans was based on the 3-month dog feeding study (see item f. above). The PADI in humans was calculated to be 0.02 mg/kg/day, with a NOEL of 750 ppm (18.75 mg/kg/day) and a safety factor of 1000.

Of concern in the three-month study is a decrease in the hematocrit and hemoglobin values. This study was limited and of short duration, therefore, the Agency has determined that non-oncogenic effects following long-term exposure in a species other than the rodent have not been adequately defined. A long-term study (at least one year's duration) in the dog is being required.

The maximum permitted intake (MPI) for a 60 kg human has been calculated to be 0.5625 mg/day. To date the tolerances granted have accounted for 2.34% of the acceptable daily intake (ADI) with a theoretical maximum residue contribution (TMRC) to the daily diet of 0.0132 mg/day (for an average 1.5 kg daily diet).

Because the Agency considers oryzalin to be a rat oncogen, all existing tolerances and any proposed tolerance(s) have been or will be, by necessity, considered on that basis. However, the potential impact of each new use on the ADI is also essential and provides an additional check on estimating the safety or hazard of each request. Because the ADI is currently a value which is based on non-oncogenic effects, the long-term dog study is considered an important data gap in the toxicology profile of oryzalin.

No tolerances have been established for residues of oryzalin in meat, milk, eggs, or poultry because the parent compound was thought to be the only residue of concern, and it was not present at detectable levels in feed. The Agency has requested additional metabolism studies in ruminants, chickens and plants in order to more fully define the terminal residue and identify if there are any metabolites which may be of concern.

Tolerances for meat, milk, eggs, and poultry may be necessary if it is determined that residues are found in animal feed. At present, available toxicity data support the existing crop tolerances as they have been established at or near the limit of detection. The Agency is requiring the submission of residue studies in crops, plants and animals to verify that this is the case.

Pending receipt of the additional studies requested, the Agency will evaluate new uses and new tolerances on a case-by-case basis and, if the incremental

risks are not significantly increased, will continue to establish new tolerances. However, food additive tolerances under sec. 409 of the Federal Food, Drug and Cosmetic Act will not be established.

2. Preliminary Risk and Benefit Analysis

- a. Risks. To assess the risks associated with oryzalin, the Agency reviewed the existing data base. This included the review of studies conducted for oncogenicity, mutagenicity, teratogenicity and metabolism. Based on these studies, dietary risk and applicator exposure and risk have been calculated. The following is a discussion of the results of the risk assessment.

(1) Oncogenicity Studies

Rat Study. Results in the Fischer 344 rat study showed that oryzalin, when administered in the diet, was associated with significantly elevated incidences of:

- (a) Thyroid gland follicular cell adenomas and carcinomas (combined) in high dose males and females (primarily adenomas):
- (b) Three different groups of skin tumors--fibromas and fibrosarcomas (combined) in mid- and high-dose males); papillomas, keratoacanthomas and squamous cell carcinomas (combined) in high dose males and females; and basal cell adenomas and skin adnexal tumors (combined) in mid- and high-dose males and females; and
- (c) Mammary gland adenomas, fibroadenomas and adenocarcinomas (combined) in low-, mid-, and high-dose females (primarily fibroadenomas). In addition, a significant positive trend for liver adenomas was observed but the elevated incidence of this tumor type in high-dose males was only of borderline statistical significance.

Most of the tumors (except for liver adenomas) occurred at incidences higher than historical control incidences for the same respective tumor type in F344 rats. (Recent NTP data: See Handbook of Carcinogen Testing, H. A. Milman and E. K. Weisberger, eds. pg. 282-325, In Press: Toxicol. Pathol. 12:126, 1984).

The elevated incidence of thyroid tumors observed in high dose male and female rats was accompanied by focal follicular hyperplasia of the thyroid gland in males (control, 2/59; low dose 2/59; mid-dose, 4/57; high dose, 15/56) and females (control, 0/55; low dose, 1/59; mid dose, 5/57; high dose, 14/55). Hyperplastic changes are a strong indicator of an oncogenic effect.

In the chronic rat bioassay, the following were observed at the three test levels:

- (a) The highest dose tested (2700 ppm in the diet) appeared to exceed a "maximum tolerated dose" (MTD) level. The Agency noted that some of the tumors that occurred in rats at the 2700 ppm dose which exceeded the MTD (i.e., tumors of the thyroid gland, skin, and mammary gland) also occurred at doses that did not exceed the MTD level (i.e., skin and mammary gland tumors at 900 ppm, and mammary gland tumors at 300 ppm). The effects seen at this dose included:
 - o Reduced survival ($p < 0.05$) in males and females;
 - o Weight loss ($p < 0.05$) in males and females at the end of the studies;
 - o Depressed red blood cell, hemoglobin and hematocrit levels in males and females;
 - o Increased SGPT and BUN levels in females and increased creatinine levels in females; and
 - o Elevated organ weights in males (liver, kidney, thyroid gland, and heart) and females (adrenal gland).
- (b) The mid-dose level (900 ppm) in rats did not exceed the MTD. The only effects seen at this dose were depressed red blood cell, hemoglobin and hematocrit levels in females, and elevated organ weights in males (liver and kidney) and females (kidney).
- (c) The lowest dose tested (300 ppm) resulted in no observed adverse effects.

There is presumptive evidence that the thyroid gland tumors produced by oryzalin in male and female rats were due to an anti-thyroid effect of the compound. Although no biochemical tests were performed to evaluate an effect of oryzalin on thyroid function in the data available for review, several morphological changes were observed in the thyroid gland in the chronic rat bioassays in addition to the tumors. These included:

- (a) Increased thyroid gland weights in high-dose (2700 ppm) males.
- (b) A dose-related increase in cystic follicles of the thyroid in males (controls, 3/59; low-dose, 5/59; mid-dose, 12/57; high-dose, 19/56) and females (controls, 2/55; low-dose, 8/59; mid-dose, 13/57; high-dose, 15/55); and
- (c) Focal follicular hyperplasia particularly at the high-dose level, in males and females.

Mouse Study. Oryzalin was not oncogenic when administered in the diet to B6C3F1 mice.

In the chronic mouse bioassays, the highest dose tested in males (3650 ppm in the diet) did not exceed a MTD. The only effect seen at this dose in males was a reduction in body weight gain (approximately -5%) at the end of the study. In female mice, the 3650 ppm dose did appear to exceed a MTD. This dose in females did not affect mortality but did produce reductions in body weight gain at 12 months (-12%), 18 months (-15%), and 24 months (-19%) after the start of the studies. In addition, reductions in blood glucose levels and uterus weights were also noted.

Other Data. Information is available to suggest a structural relationship between oryzalin and other substances that have been demonstrated to be oncogenic in rodents. Oryzalin is a para-substituted aniline derivative and also a sulfonamide compound. The Agency considered data indicating that dietary administration of another para-substituted aniline derivative, 2,4-diaminoanisole, to rats increased the incidences of malignant tumors of the thyroid gland and the skin in both sexes. (NCI Technical Report No. 84, 1978). In addition, data on two sulfonamides, sulfamethoxazole and sulphisoxazole, were considered. Orally administered sulfamethoxazole produced thyroid gland hyperplasia and

neoplasia (nodules and adenomas) in rats (IARC 24:285, 1980) whereas sulphisoxazole was negative for oncogenicity in rats and mice (IARC 24:275, 1980). Both of these studies appeared to be adequately performed.

Furthermore, anti-thyroid effects have previously been reported for para-substituted aniline derivatives (of which the sulfonamides make up the greatest number) in rats, mice, and dogs (Endocrinology 32:185, 1943; Goodman and Gilman, 2nd ed., pg. 1301, 1970) and even in humans (Br. Med. J. 281:646, 1980; Goodman and Gilman, 5th ed., pg. 1411, 1975). On the basis of this information the Agency considered that oryzalin might act to cause thyroid tumors by inhibiting the formation of thyroxine, resulting in positive feedback stimulation of the pituitary gland to release thyroid stimulating hormone (TSH), thereby causing thyroid gland hypertrophy (goiter) and the ensuing hyperplasia and tumor formation. Along this line, the study design for the chronic (1-year) toxicity study in dogs being required to fulfill EPA's requirements must include evaluation of thyroid gland chemistry and pathology to more fully assess thyroid function. Studies appeared to be adequately performed.

- (2) Mutagenic Studies. No mutagenic effect of oryzalin was detected in several tests to assess gene mutations and chromosomal aberrations. The compound did exert a positive mutagenic effect in one test (sister chromatid exchange in Chinese hamster bone marrow cells) to assess primary DNA damage/repair, but only when the intraperitoneal route of administration was employed; no positive effect was observed when the oral route of administration was employed. The compound was also not mutagenic in another in vitro test for primary DNA damage/repair. The Agency is requiring that an in vitro cell transformation test be performed by the registrant using oryzalin (other compounds demonstrated to evoke thyroid gland tumors are positive in this test).
- (3) Teratogenic and Reproductive Effects Studies. In 1979, investigations were undertaken by the Occupational Safety and Health Administration and the National Institute for Occupational Safety and Health concerning an allegation by the International Chemical Workers' Union (ICWU) that oryzalin may have caused production workers to father children with heart defects. No link to the production of oryzalin could be found in any of the investigations. In this regard, the Agency evaluated several teratology and reproduction studies in rats and rabbits. In a 3-generation

rat reproduction study and two separate rat teratology studies, there were no teratogenic effects on pup development [NOEL 225 mg/kg/day (HDT)]. Furthermore, in the two rabbit teratology studies there were, similarly, no teratogenic effects to the fetuses. The repeat rabbit study involved a detailed examination of the fetal heart to determine if there was any substantial animal evidence for the claims made by the ICWU. None was found. The rabbit teratogenic NOEL is 125 mg/kg/day.

- (4) Metabolism Studies. Adequate metabolism data for oryzalin have not been obtained in animals. Several metabolites have been identified in in vitro studies, but no toxicology information is available for these and their relationship to metabolites that might be formed in vivo has not been demonstrated.
- (5) Risk Assessment. The Agency has reviewed oncogenicity studies for oryzalin, and concludes that these data provide sufficient evidence of oncogenicity for the chemical in male and female rats. According to EPA Proposed Guidelines for Carcinogen Risk Assessment (November 23, 1984, 49 FR 46294), oryzalin has been classified as a Category B2 oncogen, that is, a probable human oncogen.

The B2 classification is based upon several factors. One is that oryzalin causes tumors at multiple organ sites in the rat. A second factor is that the thyroid gland tumors and two of the three groups of skin tumors occurred in both sexes of the rat and, furthermore, the thyroid tumors were associated with hyperplastic changes of the thyroid gland. Finally, other compounds that are both oncogenic and structurally similar to oryzalin produce thyroid gland and skin tumors in rats.

The Agency is aware that other aspects of the toxicology data profile on oryzalin are less supportive of the B2 classification of carcinogenicity. For example, the compound was not mutagenic in numerous genotoxicity tests, and it was not oncogenic in the mouse. In addition, one group of skin tumors (fibromas and fibrosarcomas) and the mammary gland tumors occurred only in single sexes of the rat. Finally, although the combined incidences of basal cell adenomas and adnexal tumors of the skin were elevated in both sexes of rats, it is difficult to ascribe the observed combined increases to a change in any individual basal cell or adnexal tumor type.

- (6) Dietary Risk. The oncogenic evidence is discussed above. The dietary risk associated with oryzalin is 10^{-5} - 10^{-6} (Class B2 carcinogen) using a TMRC of 0.0132 mg/day and a

Q* of 3×10^{-2} (mg/kg/day)⁻¹. Dietary exposure to oryzalin was calculated based on assumptions that 100% of crops are treated, and that exposed individuals consume only crops containing residues at the tolerance level. In addition, established tolerances have been based on no detectable residue levels or levels at the sensitivity of the analytical method (0.01 ppm).

Dietary exposure to oryzalin per se appears to be minimal, and EPA expects that, because of the assumptions made, actual exposure is less than the calculated exposure. Additional uses of oryzalin will be considered on a case-by-case basis giving particular concern for detectable levels of oryzalin per se, which may be present, as well as clarification of the terminal residue in terms of measurable metabolites.

- (7) Applicator Exposure and Risk. The toxicology data strongly indicate no toxic effects associated with dermal contact and inhalation exposure to oryzalin. However, the Agency is concerned about applicator exposure and risk because of the oncogenic response in the rat study. Exposure, as discussed below, has been estimated using the toxicology data which indicate:
- (a) Acute toxicity by the dermal route is low (>2 g/kg). Oryzalin is not a dermal sensitizer; 2 separate subchronic dermal studies using Surflan 75W and Surflan 4AS demonstrated no adverse effects to rabbits when applied to intact or abraded skin at concentrations of 4.8% for 6 hrs. per day.
 - (b) Dermal absorption is poor. A percutaneous absorption study using monkeys demonstrated a dermal absorption rate of @ 1.6% of the applied dose. Moreover, the rate of excretion is high compared to the rate of absorption.
 - (c) Compound-related effects associated with worker or applicator situations have not been identified in the epidemiology data.

Evaluation of mixer/loader/applicator exposure via the dermal and inhalation routes have been estimated using surrogate data for ground application of oryzalin in almond orchards at 4 lbs. a.i./acre and for both private and commercial applicators to soybeans at 1 lb. a.i./acre. For almond orchards and private soybean applicators, oryzalin is assumed to be used one day a year. Commercial soybean applicators are assumed to apply oryzalin 15 days a year. Applicators were assumed to weigh 70 kg and to work 35 years out of a 70-year lifetime.

For use in almond orchards by workers in normal work clothes, excluding gloves, dermal exposure is 7 mg/year (incorporating the dermal absorption factor of 1.6%) and inhalation exposure is 1 mg/year. This gives a lifetime average daily dose (LADD) of 2×10^{-4} mg/kg/day. For private soybean applicators, clothed as above, corrected dermal absorption is 5 mg/year and inhalation exposure is 1 mg/year with an LADD of 1×10^{-4} mg/kg/day.

For commercial applicators, clothed as above, the corrected dermal absorption is 106 mg/year and the inhalation exposure is 21 mg/year with an LADD of 2×10^{-3} mg/kg/day.

Using $Q^* = 3 \times 10^{-2} \text{ (mg/kg/day)}^{-1}$ (Class B2 carcinogen), the upper 95% confidence limits on risks are

almonds	=	10^{-5} - 10^{-6}
soybeans (private)	=	10^{-5} - 10^{-6}
soybeans (commercial)	=	10^{-4} - 10^{-5}

It is estimated that exposure to mixers/loaders/applicators could be reduced by as much as 90% by use of impermeable gloves and other protective clothing. Using these protective measures, the upper 95% confidence limits on risks as a Class B2 carcinogen are:

almonds	=	10^{-6} - 10^{-7}
soybeans (private)	=	10^{-6} - 10^{-7}
soybeans (commercial)	=	10^{-5} - 10^{-6}

- b. Benefits. An assessment of the benefits of oryzalin was made based on the use patterns of the chemical and the alternatives available. The following is a result of that assessment.

Oryzalin controls a wide spectrum of annual grasses and broadleaf weeds (46 different weeds) in 32 fruits, nuts, vineyards, forestry, noncrop areas, and certain agricultural crops.

Oryzalin, unlike other dinitroaniline herbicides, can be applied preemergence and can remain on the soil surface for as long as 3 weeks before rainfall moves it into the weeds germinating zones, whereas other herbicides require rainfall within 7-10 days for activation or need to be soil incorporated.

Oryzalin fits well into a no-till weed control situation in soybeans, because it affords the grower flexible timing and can be applied either in the fall, early spring or over-the-top which reduces the need for

"burndown" herbicides. It can also be applied aerially, by ground equipment, with liquid fertilizers, over-the-top in tank mixes, or through chemigation systems. Oryzalin is also widely tank mixed with various herbicides in several crops to provide a wider weed control spectrum and provides a low risk of carryover or subsequent damage to the next crop.

Oryzalin is the only preemergence herbicide that can be applied over-the-top of standing wheat or barley to control spring germinating annual weeds. This use helps make relay intercropping (planting soybeans in standing wheat or barley before harvest) a more viable cropping option.

In fruit, nut and vineyard crops, oryzalin gives the growers the flexibility they need to control weeds from 2-12 months without phytotoxicity depending upon the application rate selected. In ornamentals, the growers can also vary their length of weed control from 2-8 months depending upon the application rate selected.

D. REGULATORY POSITION AND RATIONALE. Based on review and evaluation of all available data and other relevant information on oryzalin, the Agency has made the following determinations:

1. If any of the risk criteria listed in Section 162.11(a) of Title 40 of the U.S. Code of Federal Regulations have been met or exceeded, a special review of the chemical is conducted. Although oryzalin has met one of the criteria, that of an oncogen in the rat, with potential for oncogenicity in humans, it is not being placed into the special review process at this time.

Rationale: After considering both dietary and applicator exposure to oryzalin, the Agency has concluded that the risks posed by oryzalin are minimal and hence initiation of a special review is not necessary at this time. The Agency has also reviewed the benefits of oryzalin and has concluded that its benefits outweigh its risks.

2. Registrants must place protective clothing statements on the labels of manufacturing-use and end-use products containing oryzalin. The specific language of these statements is provided in Part II.

Rationale: Because of potential oncogenic risk from oryzalin, the Agency is requiring protective clothing

statements on labels for oryzalin products. Applicator exposure and risks are discussed beginning on page 13. These risks can be reduced to an acceptable level by requiring persons who may come in contact with the chemical to wear protective clothing.

3. The Agency has concluded that no change in present tolerances is indicated at this time. New tolerances will be evaluated on a case-by-case basis and new tolerances established if the incremental risks are not significantly increased. The Agency will require additional residue and metabolism studies on soybeans, potatoes, ruminants and chickens, in order to determine the nature of the residue in plants and animals.

Rationale: Current tolerances are expressed in terms of parent compound only; however, the Agency has determined that the metabolism in plants and animals is not adequately defined. Most tolerances for oryzalin have been established at or near the limit of determination of the analytical method sensitivity. Available information indicates a need to further clarify the composition of the terminal residue of oryzalin in plants and animals.

4. The Agency is not requiring a reentry interval for currently registered uses of oryzalin.

Rationale: The acute toxicity for oryzalin is low (Category III). Additionally, exposure and the resultant risks to field workers are expected to be much lower than to applicators handling the chemical. Therefore, no reentry interval is required.

5. The Agency is requiring grazing restrictions for the labels of all end-use products.

Rationale: There are currently no tolerances established for residues of oryzalin in animals or animal byproducts.

6. The Agency is requiring crop rotation restrictions on the labels of all end-use products.

Rationale: The root crop precaution is necessary due to the longevity of this type of product in soil and the lack of adequate residue data on such rotational crops. It is the policy of the Agency to impose restrictions on planting rotational crops when data are insufficient to allow an assessment of the impact of planting subsequent crops. This serves to protect the public from impermissible residues in food and feed

and to protect subsequent planted crops from adverse effects due to persistent residues.

7. The Agency is imposing label requirements for end-use products intended for use with center pivot irrigation systems (chemigation). See Section C of Part II for the specific language.

Rationale: Because of the oncogenic risk associated with the exposure of oryzalin, the Agency is requiring that labels of end-use products contain precautionary statements to reduce the chance of incidental exposure to field workers.

8. While the data gaps are being filled, currently registered manufacturing-use products (MPs) and end-use products (EPs) containing oryzalin as the sole active ingredient may be sold, distributed, formulated and used in the United States, subject to the terms and conditions specified in this Standard. Registrants must provide or agree to develop additional data, as specified in Table A of Section D, Part II, in order to maintain existing registrations.

The Agency will issue registrations for substantially similar products. However new uses will be issued only on a case-by-case basis after considering the effects on the theoretical maximum residue concentration (TMRC) and the maximum permitted intake (MPI), and the oncogenic risks.

Rationale: Section 6 of FIFRA authorizes the Administrator to cancel a pesticide registration if he determines that the pesticide will cause unreasonable adverse effects on the environment. Based on available data, the Administrator has not made such a determination as to oryzalin. The Administrator has authority under FIFRA sections 3(c)(2)(B) and (3)(c)(7) to require registrants and applicants for registration to provide data needed to support new or continuing registrations.

Issuance of this Standard provides a mechanism for identifying data needs. These data will be reviewed and evaluated and the Agency will determine if the data will affect the registration of oryzalin.

PART II. REQUIREMENTS FOR REGISTRATION

This Part of the Registration Standard discusses what data and information are required to maintain existing registrations or register new products containing oryzalin. It also contains the instructions for submitting the necessary data and information to the Agency.

- A. CRITERIA FOR REGISTRATION UNDER THIS STANDARD. To be covered by this Standard, MPs must contain oryzalin as the sole active ingredient, bear required labeling and conform to the product composition, acute toxicity limits and use pattern requirements listed in Section B.

The applicant for registration or reregistration of products subject to this Standard must comply with all terms and conditions described in it. This includes making a commitment to fill data gaps on a schedule specified by the Agency. Applicants for registration under this Standard must follow the instructions contained herein and complete and submit the appropriate forms within the time specified.

B. ACCEPTABLE RANGES AND LIMITS

1. Product Composition Standard. Technical grade products must contain at least 95.0 percent oryzalin as the sole active ingredient. Each MP formulation proposed for registration must be fully described with appropriate certification of limits. In addition, the active ingredient must be substantially similar to that in currently registered technical products. Any MPs not meeting these requirements will be considered a new product and will not be registered under this Standard.
2. Acute Toxicity Limits. The Agency will consider registration of technical grade MPs containing oryzalin when the appropriate acute toxicity categories are no higher than Category III. The labeling of any registered products must bear the appropriate precautionary statements.
3. Use Patterns. To be registered under this Standard, MPs containing oryzalin must be labeled for formulation into end-use products that are to be used for control of germinating annual grasses and broadleaf weeds in fruit, nuts, vineyards (nonbearing and bearing), soybeans, cotton (Texas only), peas (English or green), tobacco (air- and flue-cured), potatoes (white), small grains (wheat and

barley), forestry and Christmas tree plantations, established ornamentals and noncropland (rights-of-way) areas. Appendix A, EPA Index to Pesticide Chemicals - Oryzalin, lists all registered uses, as well as approved maximum application rates and frequencies of application.

- C. REQUIRED LABELING. The required label statements must appear on the labels of all products in channels of trade within two years of issuance of this Standard. After review of data to be submitted under this Standard, the Agency may impose additional label requirements.

1. All Products. All products must bear appropriate labeling as specified in 40 CFR 162.10. Specific information regarding label requirements is included in Appendix B.

Oryzalin is not designated as an acute or toxic hazardous waste under the Resource Conservation and Recovery Act (RCRA). The label 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"

The labels of all products must bear the appropriate container disposal statement (see Appendix C).

2. Manufacturing Use Products. Labels of all MPs must bear the statements:

"For formulation into end-use herbicide products intended only for use on fruit, nuts, vineyards (bearing and nonbearing), soybeans, cotton (Texas only), peas (English and green), Tobacco (air- and flue-cured), potatoes (white), small grains (wheat and barley), forestry and Christmas tree plantations, established ornamentals and noncropland areas."

"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."

"Protective clothing (coveralls, a long-sleeved shirt, shoes and impermeable gloves) must be worn when handling this chemical."

3. End-Use Products

- a. Labels of all formulated end-use products (EPs) must bear the following statements:

"Do not graze or feed forage from treated fields or orchards to livestock."

"Do not plant root crops for twelve months following treatment."

"Mixer/loader/applicators must wear protective clothing, consisting of coveralls, a long-sleeved shirt, shoes, and impermeable gloves when handling this product."

- b. The labels of non-granular EPs intended for outdoor use must bear the following statement:

"Do not apply directly to water or wetlands. Do not contaminate water by cleaning of equipment or disposal of wastes."

- c. The labels of all EPs applied by center pivot irrigation systems must bear the following posting requirements statement and the appropriate chemigation instructions.

Posting Requirements

"Posting Requirements: Areas being treated with pesticides applied through irrigation systems must be posted at the usual entrances to the area, at bulletin boards where workers assemble and where the treated area lies adjacent to roads, residential areas, or any other areas such as schools, parks, or other public facilities. Posted signs must be legible from 25 feet away and be printed in English and any other appropriate language such as Spanish. Signs must be posted prior to application, but may remain in place indefinitely. The sign must indicate the following:

NOTICE

Pesticides are applied in irrigation water in this field. Do not enter this field when the irrigation system is operating. Do not drink, bathe in or play in water or in furrows, puddles, ponds, canals or ditches associated with this irrigation system."

Chemigation Instructions

- (1) Apply only through properly maintained irrigation systems having continuously moving laterals and providing uniform distribution of water. Where a system does not provide uniform water distribution such as at the extreme ends of the lateral, around supports, where treated discharge water is released from water-powered motors, or where extreme changes in elevation occur, unacceptable weed control or crop injury may occur.
- (2) Apply the product only through irrigation systems containing anti-siphon and check valves, to prevent water source contamination and overflow and siphoning of slurry tank, and interlocking controls between the metering device and the water pump, to insure simultaneous shut-off.
- (3) Inject the product with a positive displacement pump into the main line ahead of a right angle turn to insure adequate mixing.
- (4) Application of more than label recommended quantities of irrigation water per acre may result in decreased product performance by removing the pesticide from the zone of effectiveness.
- (5) Do not apply when wind speed favors drift, when connections or fittings leak, when nozzles do not provide uniform distribution or when lines containing the product should be dismantled and drained. Use of low trajectory angle sprinkler or drop nozzles will decrease the likelihood of drift.
- (6) Greater accuracy in pesticide calibration and distribution will be achieved by injecting a larger volume of more dilute slurry per hour.

(7) Constant agitation should be maintained in the slurry tank during the entire period of pesticide application.

d. The labels of all products with outdoor agricultural uses and which are applied to crops utilizing hand labor tasks must bear general precautionary language about farmworker safety. See Appendix D for the required language.

D. SUBMISSION OF GENERIC DATA. Generic data pertain to the properties or effects of a particular ingredient, and thus are relevant to an evaluation of the risks of all products containing that ingredient, regardless of the product's unique composition or specific use. EPA has the authority under FIFRA sec. 3(c)(2)(B) to require registrants to submit data that will answer the Agency's questions regarding the hazard that may result from the intended use of a pesticide.

Although sec. 3(c)(2)(B) provides that all registrants are responsible for these data, the Agency generally imposes generic data requirements only on the registrants of the manufacturing-use products (basic suppliers of the active ingredient) and other producers who do not qualify for the formulator's exemption. The formulator's exemption applies to a registrant of a product if the source of its active ingredient(s): (1) is a registered product, and (2) is purchased from a source which does not have ownership in common with the registrant's firm.

A producer who currently does not qualify for the formulator's exemption may qualify by changing its source of supply to a registered source, provided the source does not share ownership in common with the registrant's firm. A registrant may do so by submitting a new Confidential Statement of Formula, EPA Form 8570-4, identifying the registered source of the active ingredient, to the Product Manager listed in Section E of this Part within 90 days of receipt of the Registration Standard. The chart on the following page shows what is generally required of those who do and do not qualify for the formulator's exemption in the Registration Standards program.

Registrants are reminded that FIFRA sec. 6(a)(2) requires that factual information raising concerns of possible unreasonable adverse effects of a pesticide must be promptly submitted. If interim results of studies in progress show possible adverse effects, the Agency is to be notified of those interim results. This portion of the Registration Standard is issued under the authority of FIFRA sec. 3(c)(2)(B). Table A, following this section, lists the data required for maintaining the registration of each product.

PRODUCTS SUBJECT TO THE REGISTRATION STANDARD	ACTION(S) REQUIRED TO MAINTAIN REGISTRATION
<p>I. Products That Do Not Qualify For The Formulator's Exemption</p> <p>A. Single Active Ingredient Products*</p> <p>.....</p> <p>B. Multiple Active Ingredient Products</p>	<p>These products must be reregistered. To obtain reregistration, labeling, packaging and data requirements must be satisfied in accordance with the Registration Standard.</p> <p>.....</p> <p>These products will not be reregistered at this time. However, generic data required to continue the registration of the active ingredient under review, as described in the Registration Standard, will be required and some labeling precautions may also be required.</p>
<p>II. Products That Do Qualify For The Formulator's Exemption</p>	<p>Only when additional restrictions or labeling are needed to protect humans or the environment will these products be subject to the Registration Standard requirements. Affected products will be dealt with in a variety of ways, including but not limited to the Label Improvement Program and special intent to cancel notices.</p>
<p>* End-use products of registrants who also produce a manufacturing use product will not be required to be reregistered provided that registrant fulfills the requirements specified in the Registration Standard for manufacturing-use product(s). Such end-use products will be subject to the labeling changes required for products in "II" above. If there are no manufacturing-use products registered by any company, end-use products will be required to be reregistered.</p> <p>NOTE: If all registrants in "I" above fail to meet the requirements in I-A and B above, the registrants in "II" lose their right to qualify for the formulator's exemption and become subject to the requirements in I-A and B.</p>	

EPA has determined that additional generic data described in Table A must be submitted to EPA for evaluation in order to maintain in effect the product registration(s). As required by FIFRA sec. 3(c)(2)(B), registrants are required to take appropriate steps to comply with this Standard.

EPA may suspend the registration of products unless, within the specified time, the registrant informs EPA how it will satisfy the requirements of this Standard. Any such suspension will remain in effect until the registrant has complied with the terms of this Standard.

1. What Generic Data Must be Submitted. Registrants may determine which generic data must be submitted by consulting Table A. That table lists the generic data needed to evaluate the continued registrability of all products, and the dates by which the data must be submitted. The required studies must be conducted in accordance with EPA approved protocols (such as those contained in the Pesticide Assessment Guidelines ^{1/}) or data collected under the approved protocols of the Organization for Economic Cooperation and Development (OECD). If registrants do not wish to develop data in support of certain uses appearing in their labeling, they may delete those uses at the time they submit revised labeling.

For certain kinds of testing (generally ecological effects), EPA requires the test substance to be a "typical formulation," and in those cases EPA needs data of that type for each major formulation category (e.g., emulsifiable concentrates, wettable powders, granulars, etc.) These are classified as generic data and when needed are specified in Table A. EPA may possess data on certain "typical formulations" but not others.

2. Options Available for Complying With Requirements to Submit Data. Within 90 days of receipt of this Standard, registrants must submit to EPA a completed copy of the form entitled "FIFRA Section 3(c)(2)(B) Summary Sheet," EPA Form 8580-1 (Appendix E), for each of their products. On that form, registrants must state which of the following methods they will use to comply with the requirements of this Standard:
 - a. Notify EPA that they will submit the data, and either submit the existing data they believe will satisfy the

^{1/} The Pesticide Assessment Guidelines are available in hard copy or microfiche from the National Technical Information Service, 5285 Port Royal Road, Springfield, VA 22161.

requirement, or state that they will generate the data by conducting testing. If the test procedures they will use deviate from (or are not specified in) the Pesticide Assessment Guidelines or protocols contained in the Reports of Expert Groups to the Chemicals Group, Organization for Economic Cooperation and Development (OECD) Chemicals Testing Programme, they must enclose the protocols they will use.

OR

- b. Notify EPA that they have entered into an agreement with one or more other registrants to jointly develop (or share in the cost of developing) the data. If they elect this option, they must notify EPA which registrant(s) are parties to the agreement.

OR

- c. File with EPA a completed "Certification of Attempt to Enter Into an Agreement With Other Registrants for Development of Data," EPA Form 8580-6 (Appendix F)^{1/}

OR

- d. Request that EPA amend their registrations by deleting the uses for which the data are needed. (This option is not available to applicants for new products.)

OR

- e. Request voluntary cancellation of the registration(s) of the products for which the data are needed. (This option is not available to applicants for new products.)

^{1/} FIFRA sec. 3(c)(2)(B) authorizes joint development of data by two or more registrants, and provides a mechanism by which parties can obtain an arbitrator's decision if they agree to jointly develop data but fail to agree on all the terms of the agreement. The statute does not compel any registrant to agree to develop data jointly. In EPA's opinion, joint data development by all registrants subject to a data requirement or a cost-sharing agreement among all such registrants is clearly in the public interest. Duplication of testing could increase costs, tie up testing facilities, and subject an unnecessarily large number of animals to testing.

(Footnote continued on next page)

3. Procedures for Requesting Changes in Testing Methodology and Extensions of Time. EPA recognizes that registrants may disagree with the Agency's conclusions regarding the appropriate ways to develop the required data or how quickly the data must be submitted. If the test procedures a registrant plans to use deviate from (or are not specified in) the registration guidelines or protocols contained in the reports of the Expert Groups to the Chemical Groups, Organization for Economic Cooperation and Development (OECD) Chemicals Testing Programme, the registrant must submit the protocol for Agency review prior to the initiation of the test.

If a registrant believes it will need more time to generate the required data than is allowed by EPA's schedule, the registrant may submit a request for an extension of time. The extension request must be submitted in writing to the Product Manager. The extension request should state the reasons why the registrant believes that an extension is appropriate. While EPA considers the request, the registrant must strive to meet the deadline for submitting the required data.

(Footnote continued from previous page)

As noted earlier, EPA has discretion to suspend the registration of a product when a registrant fails to submit data required under FIFRA Section 3(c)(2)(B). EPA has concluded that it should encourage joint testing rather than duplicative testing, and that suspension should be withheld in certain cases to further this goal. Accordingly, if (1) a registrant has informed EPA of its intent to develop and submit data required by this Notice; and (2) a second registrant informs EPA that it has made a bona fide offer to the first registrant to share in the expenses of the testing [on terms to be agreed upon or determined by arbitration under FIFRA Section 3(c)(2)(B)(iii)]; and (3) the first registrant has declined to agree to enter into a cost-sharing agreement, EPA will not suspend the second firm's registration.

TABLE A
GENERIC DATA REQUIREMENTS FOR ORYZALIN

Guideline Citation and Name of Test	Test Substance ^{1/}	Guidelines Status	Are Data Required		Footnote Number	Data Must Be Submitted Within Time Frames Listed Below ^{2/}
			Yes	No		
<u>§158.120 Product Chemistry</u>						
<u>Product Identity</u>						
61-2 - Description of beginning materials and manufacturing process	TGAI	R	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u>3</u>	13 months
61-3 - Discussion of formation of impurities	TGAI	R	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<u> </u>	
<u>Analysis and Certification of Product Ingredients</u>						
62-1 - Preliminary analysis	TGAI	CR	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u>4</u>	7 months
<u>Physical and Chemical Characteristics</u>						
63-2 - Color	TGAI	R	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<u> </u>	
63-3 - Physical state	TGAI	R	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<u> </u>	
63-4 - Odor	TGAI	R	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<u> </u>	
63-5 - Melting point	TGAI	R	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<u> </u>	
63-6 - Boiling point	TGAI	R	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<u> </u>	
63-7 - Density, bulk density, or specific gravity	TGAI	R	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u>5</u>	7 months

TABLE A
GENERIC DATA REQUIREMENTS FOR ORYZALIN

Guideline Citation and Name of Test	Test Substance ^{1/}	Guidelines Status	Are Data Required		Footnote Number	Data must Be Submitted Within Time Frames Listed Below ^{2/}
			Yes	No		
<u>§158.120 Product Chemistry (Continued)</u>						
<u>Physical and Chemical Characteristics</u> (Continued)						
63-8 - Solubility	TGAI or PAI	R	[]	[X]	6	7 months
63-9 - Vapor pressure	PAI	R	[]	[X]		
63-10 - Dissociation constant	PAI	R	[X]	[]	5	7 months
63-11 - Octanol/water partition coefficient	PAI	R	[X]	[]	5	7 months
63-12 - pH	TGAI	R	[]	[X]		
63-13 - Stability	TGAI	R	[X]	[]	5	7 months
<u>Other Requirements:</u>						
64- 1 - Submittal of samples	TGAI, PAI	CR	[]	[X]		

^{1/} TGAI = Technical Grade of the Active Ingredient; PAI = Pure Active Ingredient; R = Required; CR = Conditionally Required.

^{2/} Data must be submitted within the indicated time frame, based on the date of issuance of the Standard.

^{3/} Additional information needed to fill data gap.

^{4/} Analyses for impurities must determine all impurities occurring at 0.1% or higher.

^{5/} Not reported.

^{6/} Need temperature at which solubilities were determined.

TABLE A
GENERIC DATA REQUIREMENTS FOR ORYZALIN

Data Requirements	^{1/} Composition	Does EPA Have Data To Satisfy This Requirement? (Yes, No, or Partially)	Bibliographic Citation	Must Additional Data Be Submitted Under FIFRA § 3(c)(2)(B)? Time Frames For Data Submission
<u>§158.125 Residue Chemistry</u>				
171-4 - Nature of Residue (Metabolism)				
- Plants	PAIRA, TGAI	No		Yes ^{2/} - 18 months
- Livestock	PAIRA, TGAI and Plant Metabolites	No		Yes ^{2/} - 18 months
171-4 - Residue Analytical Method				
- Plant residues	TGAI and Metabolites	Partially	0023990 0033976	No ^{3/}
- Animal residues	TGAI and Metabolites	No	00106730	No ^{3/}
171-4 - Storage Stability Data	PAI			
171-4 - Magnitude of the Residue- Residue Studies for Each Food Use				
--field trials	TEP	Partially	00106730	Yes - 18 months
--processed food/feed	EP	No	00106730	Yes - 24 months

^{1/} Composition: TGAI = Technical grade of the active ingredient; EP = End-use product; PAIRA = Pure active ingredient radiolabeled; PAI = Pure active ingredient; TEP = Typical end-use product.

^{2/} The metabolism of oryzalin in plants and animals is not adequately understood. Data are required on soybeans and potatoes, ruminants and chickens.

^{3/} Additional methods may be required pending the results of the metabolism studies. This would include methods for crops, by-products, meat, milk, poultry and eggs.

TABLE A
GENERIC DATA REQUIREMENTS FOR ORYZALIN

Data Requirement	Composition ^{1/}	Use ^{2/} Pattern	Does EPA Have Data To Satisfy This Require- ment? (Yes, No or Partially)	Bibliographic Citation	Must Additional Data Be Submitted Under FIFRA § 3(c)(2)(B)? Time Frame for Data Submission ^{3/}
<u>§158.145 Wildlife and Aquatic Organisms</u>					
71-1 - Avian Single-Dose	TGAI	AB	Yes	000984627/ 001067288/ 001062788/ 000984648/	No
71-2 - Avian Dietary	TGAI	ABF ^{4/} G ^{4/}	Yes	000725937/ 000725947/	
71-3 - Wild Mammal Toxicity	N/A	N/A			
71-4 - Avian Reproduction	TGAI	AB	Yes	00126843 00129050	No ^{5/}
71-5 - Simulated and Actual Field Testing for Mammals and Bird	TEP	N/A			No
72-1 - Fish Acute Toxicity	TGAI	ABF ^{4/} G ^{4/}	Yes	000725957/ 001066638/ 001067298/	No
72-2 - Acute Toxicity Aquatic Invertebrates	TGAI	ABFG	Yes	000725967/	No
72-3 - Acute Toxicity Estuarine and Marine Organisms	TGAI	A	No		Reserved ^{6/}

TABLE A
GENERIC DATA REQUIREMENTS FOR ORYZALIN

Data Requirement	Composition ^{1/}	Use ^{2/} Pattern	Does EPA Have Data To Satisfy This Require- ment? (Yes, No or Partially)	Bibliographic Citation	Must Additional Data Be Submitted Under FIFRA § 3(c)(2)(B)? Time Frame for Data Submission ^{3/}
<u>§158.145 Wildlife and Aquatic Organisms (continued)</u>					
72-4 - Fish Early Life Stage Aquatic Invertebrate Life-Cycle	TGAI	AB	Yes	00126841 ^{7/} 00126842 ^{7/}	Reserved ^{6/}
72-5 - Fish - Life-Cycle	TEP	N/A			Reserved ^{6/}
72-6 - Aquatic Organism Accumulation	TEP	N/A			Reserved ^{6/}
72-7 - Simulated or Actual Field Testing for Aquatic Organisms	TEP	AB	No	00106665 ^{8/}	Reserved ^{6/}

- ^{1/} Composition: TGAI = Technical grade of the active ingredient; TEP = Typical end-use product; EP = End-use product.
^{2/} The use patterns are coded as follows: A = Terrestrial, Food Crop; B = Terrestrial, Non-Food Crop; C = Aquatic, Food Crop; D = Aquatic, Non-Food; E = Greenhouse, Food Crop; F = Greenhouse, Non-Food; G = Forestry; H = Domestic Outdoor; I = Indoor, N/A = Not Applicable.
^{3/} Data must be submitted no later than 18 months after reserved studies are required.
^{4/} Only one species is required to support a manufacturing-use product.
^{5/} Not required at this time.
^{6/} Reserved pending evaluation of complete environmental fate data.
^{7/} Study fulfills guideline requirement on its own.
^{8/} Study does not fulfill guideline requirement on its own.

TABLE A
GENERIC DATA REQUIREMENTS FOR ORYZALIN

Data Requirement	Composition ^{1/}	Use ^{2/} Pattern	Does EPA Have Data To Satisfy This Require- ment? (Yes, No or Partially)	Bibliographic Citation	Must Additional Data Be Submitted Under FIFRA § 3(c)(2)(B)? Time Frame for Data Submission ^{3/}
<u>§158.155 Nontarget Insect</u>					
<u>Nontarget Insect Testing - Pollinators</u>					
141-1 - Honey bee acute contact toxicity	TGAI	ABG.	Yes	00066220	No
141-2 - Honey bee - toxicity of residues on foliage	TEP	ABG	No		No ^{5/}
141-3 - Wild bees important in alfalfa pollination - toxicity of residues on foliage	TEP				
141-4 - Honey bee subacute feeding study	(Reserved) ^{4/}				
141-5 - Field testing for pollinators	TEP				

TABLE A
GENERIC DATA REQUIREMENTS FOR ORYZALIN

Data Requirement	Composition ^{1/}	Use ^{2/} Pattern	Does EPA Have Data To Satisfy This Require- ment? (Yes, No or Partially)	Bibliographic Citation	Must Additional Data Be Submitted Under FIFRA § 3(c)(2)(B)? Time Frame for Data Submission ^{3/}
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§158.155 Nontarget Insect (continued)

Nontarget Insect Testing -
Aquatic Insects

142-1 - Acute toxicity to aquatic insects	(Reserved) ⁴				
142-1 - Aquatic insect life-cycle study	(Reserved) ^{4/}				
142-3 - Simulated or actual field testing for aquatic insects	(Reserved) ^{4/}				
143-1 - <u>Nontarget Insect Testing - Predators and Parasites</u>	(Reserved) ^{4/}				

^{1/} Composition: TGAI = Technical grade of the active ingredient; TEP = Typical end-use product.

^{2/} The use patterns are coded as follows: A=Terrestrial, Food Crop; B=Terrestrial, Non-Food; C=Aquatic, Food Crop; D=Aquatic, Non-Food; E=Greenhouse, Food Crop; F=Greenhouse, Non-Food; G=Forestry; H=Domestic Outdoor; I=Indoor.

^{3/} Data must be submitted no later than 12 months after reserved studies are required.

^{4/} Requirement reserved pending development of test methodology.

^{5/} Based on the results of the acute toxicity study, there is sufficient information to characterize oryzalin as of very low toxicity to honeybees. Therefore, this study is not required.

TABLE A
GENERIC DATA REQUIREMENTS FOR ORYZALIN

Data Requirement	Composition ^{1/}	Use ^{2/} Pattern	Does EPA Have Data To Satisfy This Require- ment? (Yes, No or Partially)	Bibliographic Citation	Must Additional Data Be Submitted Under FIFRA § 3(c)(2)(B)? Time Frame for Data Submission
<u>§158.135 Toxicology</u>					
<u>Acute Testing</u>					
81-1 - Acute Oral Toxicity - Rat	TGAI	ABFG	Yes	00026592 00026084 00106667 00106666 00038668 00026757	No
81-2 - Acute Dermal Toxicity	TGAI	ABFG	Yes	00094414 00106681 00041970	No
81-3 - Acute Inhalation Toxicity	TGAI	ABFG	Yes	00026769 00027289 00106660 00038673 00088513	No
81-4 - Primary Eye Irritation - Rabbit	TGAI	ABFG	Yes	00106681 00041970 00094414	No
81-5 - Primary Dermal Irritation - Rabbit	TGAI	ABFG	Yes	00106664 00038672	No

TABLE A
GENERIC DATA REQUIREMENTS FOR ORYZALIN

Data Requirement	Composition ^{1/}	Use ^{2/} Pattern	Does EPA Have Data To Satisfy This Require- ment? (Yes, No or Partially)	Bibliographic Citation	Must Additional Data Be Submitted Under FIFRA § 3(c)(2)(B)? Time Frame for Data Submission
<u>\$158.135 Toxicology (continued)</u>					
<u>Acute Testing (continued)</u>					
81-6 - Dermal Sensitization - Guinea Pig	TGAI	ABPC	Yes	00026762	No
81-7 - Acute Delayed Neurotoxicity - Hen	TGAI	N/A	No		No ^{3/}
<u>Subchronic Testing</u>					
82-1 - 90-Day Feeding - Rodent	TGAI	AB	Yes	00038677 00026773	No
Non-rodent (Dog)	TGAI	AB	Yes	00106670	No
82-2 - 21-Day Dermal - Rabbit	TGAI	AB	Yes	00106664 00038662	No
82-3 - 90-Day Dermal	TGAI	N/A	No		No ^{3/}
82-4 - 90-Day Inhalation	TGAI	N/A	No		No ^{3/}
82-5 - 90-Day Neurotoxicity - Hen	TGAI	N/A	No		No ^{3/}

TABLE A
GENERIC DATA REQUIREMENTS FOR ORYZALIN

Data Requirement	Composition ^{1/}	Use ^{2/} Pattern	Does EPA Have Data To Satisfy This Require- ment? (Yes, No or Partially)	Bibliographic Citation	Must Additional Data Be Submitted Under FIFRA § 3(c)(2)(B)? Time Frame for Data Submission
<u>§158.135 Toxicology (continued)</u>					
<u>Chronic Testing</u>					
83-1 - Chronic Toxicity -					
- Rodent	TGAI	AB	Yes	00026776 00038681	No
- Non-rodent (Dog)	TGAI	AB	No		Yes - 50 months
83-2 - Oncogenicity -					
- Rat	TGAI	AB	Yes	00044332 00070569	No
- Mouse	TGAI	AB	Yes	00068079 00026780	No
83-3 - Teratogenicity -					
- Rat	TGAI	AB	Yes	00038682 00026781	No
- Rabbit	TGAI	AB	Yes	00073552 00098461	No

TABLE A
GENERIC DATA REQUIREMENTS FOR ORYZALIN

Data Requirement	Composition ^{1/}	Use ^{2/} Pattern	Does EPA Have Data To Satisfy This Require- ment? (Yes, No or Partially)	Bibliographic Citation	Must Additional Data Be Submitted Under FIFRA § 3(c)(2)(B)? Time Frame for Data Submission
<u>§158.135 Toxicology (continued)</u>					
83-4 - Reproduction	TGAI	AB	Yes	00042908 00026782	No
<u>Mutagenicity Testing</u>					
84-2 - Gene Mutation	TGAI	AB	No	00038150 00042910 00042911 00130427 GS0186010	Yes ^{4/} - 9 months
84-2 - Chromosomal Aberration	TGAI	AB	Yes	00115743 00138696	Yes - 12 months
84-4 - Other Genotoxic Effects DNA	TGAI	AB	Yes	00086801 00087801	Yes - 12 months
<u>Special Testing</u>					
85-1 - General Metabolism	PAI or PAIRA	AB	Yes	00026761 00084886 00026592 00098463	No

TABLE A
GENERIC DATA REQUIREMENTS FOR ORYZALIN

Data Requirement	Composition ^{1/}	Use ^{2/} Pattern	Does EPA Have Data To Satisfy This Requirement? (Yes, No or Partially)	Bibliographic Citation	Must Additional Data Be Submitted Under FIFRA § 3(c)(2)(B) Time Frames for Data Submission
<u>§158.135 Toxicology (continued)</u>					
<u>Special Testing (continued)</u>					
86-1 - Domestic Animal Safety	Choice	AB	Yes	00106667 00106666 00026592	No
<u>Additional Testing</u>					
Human Exposure	TGAI and Formulated Products	N/A	No	00038774 00026788 00066198 00026081	No

§158.135 Toxicology (continued)

^{1/} Composition: TGAI = Technical Grade Active Ingredient; PAI = Pure active ingredient; PAIRA = Pure active ingredient, radiolabelled. As formulated = Surflan 75W; Surflan 4 AS; Surflan AS.

^{2/} The use patterns are coded as follows: A=Terrestrial, Food Crop; B=Terrestrial, Non-Food; C=Aquatic, Food Crop; D=Aquatic, Non-Food; E=Greenhouse, Food Crop; F=Greenhouse, Non-Food; G=Forestry; H=Domestic Outdoor; I=Indoor.

^{3/} The data requirement is inapplicable to this product.

^{4/} Data may be upgraded to be acceptable on resolution of the reporting deficiencies described in the text.

TABLE A
GENERIC DATA REQUIREMENTS FOR ORYZALIN

Data Requirement	Composition ^{1/}	Use ^{2/} Pattern	Does EPA Have Data To Satisfy This Require- ment? (Yes, No or Partially)	Bibliographic Citation	Must Additional Data Be Submitted Under FIFRA § 3(c)(2)(B)? Time Frame for Data Submission
<u>§158.130 Environmental Fate</u>					
<u>Degradation Studies-Lab</u>					
161-1 - Hydrolysis	TGAI or PAIRA	ABFG	No	-	Yes - 9 months
<u>Photodegradation</u>					
161-2 - In water	TGAI or PAIRA	ABG	No	-	Yes - 9 months
161-3 - On soil	TGAI or PAIRA	AG	No	-	Yes - 9 months
161-4 - In Air	TGAI or PAIRA	F	No	-	Yes - 9 months
<u>Metabolism Studies-Lab</u>					
162-1 - Aerobic Soil	TGAI or PAIRA	ABFG	No	-	Yes - 27 months
162-2 - Anaerobic Soil	TGAI or PAIRA	A	No	-	Yes - 27 months
162-3 - Anaerobic Aquatic	TGAI or PAIRA	G	No	-	Yes - 27 months
162-4 - Aerobic Aquatic	TGAI or PAIRA	N/A	N/A	-	N/A

TABLE A
GENERIC DATA REQUIREMENTS FOR ORYZALIN

Data Requirement	Composition ^{1/}	Use ^{2/} Pattern	Does EPA Have Data To Satisfy This Require- ment? (Yes, No or Partially)	Bibliographic Citation	Must Additional Data Be Submitted Under FIFRA § 3(c)(2)(B)? Time Frame for Data Submission
<u>\$158.130 Environmental Fate (continued)</u>					
<u>Mobility Studies</u>					
163-1 - Leaching and Adsorption/Desorption	TGAI or PAIRA	ABFG	No	-	Yes - 12 months
163-2 - Volatility (Lab)	TEP	F	No	-	Yes - 12 months
163-3 - Volatility (Field)	TEP	F	No	-	No
<u>Dissipation Studies-Field</u>					
164-1 - Soil	TEP	ABG	No	-	Yes - 27 months
164-2 - Aquatic (Sediment)	TEP	N/A	N/A	-	N/A
164-3 - Forestry	TEP	G	No	-	Yes - 27 months
164-4 - Combination and Tank Mixes		N/A	N/A	-	N/A
164-5 - Soil, Long-term	TEP	AB	No	-	Conditional ^{3/}

TABLE A
GENERIC DATA REQUIREMENTS FOR ORYZALIN

Data Requirement	Composition ^{1/}	Use ^{2/} Pattern	Does EPA Have Data To Satisfy This Require- ment? (Yes, No or Partially)	Bibliographic Citation	Must Additional Data Be Submitted Under FIFRA § 3(c)(2)(B)? Time Frame for Data Submission
<u>§158.130 Environmental Fate (continued)</u>					
<u>Accumulation Studies</u>					
165-1 - Rotational Crops (Confined)	PAIRA	A	No	-	Yes - 39 months
165-2 - Rotational Crops (Field)	TEP	A	No	-	Conditional ^{4/}
165-3 - Irrigated Crops	TEP	N/A	N/A	-	N/A
165-4 - In Fish	TGAI or PAIRA	ABG	No	-	Yes - 12 months
165-5 - In Aquatic Non-Target Organisms	TEP	G	No	-	Yes - 12 months
Sub-Part K - Reentry		N/A	N/A	-	N/A
Ground Water Assessment		N/A	No	-	Yes ^{5/}

^{1/} Composition: TGAI = Technical grade of the active ingredient; PAIRA = Pure active ingredient, radiolabelled;
TEP = Typical end-use product.

^{2/} The use patterns are coded as follows: A=Terrestrial, Food Crop; B=Terrestrial, Non-Food; C=Aquatic, Food Crop;
D=Aquatic, Non-Food; E=Greenhouse, Food Crop; F=Greenhouse, Non-Food; G=Forestry; H=Domestic Outdoor; I=Indoor.

TABLE A
GENERIC DATA REQUIREMENTS FOR ORYZALIN

§158.130 Environmental Fate (continued)

- 3/ Required unless soil residues greater than 50% of initial application of time of subsequent application. Consult with Agency upon completion of aerobic soil metabolism study, to determine appropriate timeframe for conducting study.
- 4/ Required if residues of toxicological concern are detected in the test crops of confined study.
- 5/ Hydrolysis, aerobic soil metabolism, octanol water, vapor pressure, water solubility, photodegradation, mobility, and field dissipation are required.

E. INSTRUCTIONS FOR SUBMISSION. This section describes what must be submitted and the timeframes for the submissions. Addresses are provided at the end of this section.

1. Requirements

a. For Manufacturing-Use Products Containing Oryzalin as Sole Active Ingredient

- (1) Within 90 days from receipt of this Standard, registrants must submit the "FIFRA Section 3(c)(2)(B) Summary Sheet," EPA Form 8580-1 (Appendix E).
- (2) Within 6 months from receipt of this Standard, registrants must submit:
 - (a) Confidential Statement of Formula, EPA Form 8570-4.
 - (b) Two copies of draft labeling, including the label and associated brochures. If current labeling conforms to the requirements of this Standard and the results of the short-term data, such labeling must be submitted. The 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 label must indicate the intended colors of the final label, clear indication of the front panel label, and the intended type sizes of the text.
 - (c) Evidence of compliance with data support requirements of FIFRA sec. 3(c)(1)(D). Refer to 40 CFR 152.80-152.99 for latest requirements.
- (3) Within the times set forth in Table A, registrants must submit all generic data, unless they are eligible for the formulator's exemption.

b. For Manufacturing Use Products Containing Oryzalin in Combination With Other Active Ingredients

- (1) Within 90 days from receipt of this Standard, registrants must submit the "FIFRA Section 3(c)(2)(B) Summary Sheet," EPA Form 8580-1 (Appendix E).
- (2) Within the times set forth in Table A, registrants must submit all generic data, unless they are eligible for the formulator's exemption.

c. For End-Use Products Containing Oryzalin Alone or In Combination With Other Active Ingredients

(1) Within 90 days from receipt of this Standard, registrants must submit the "FIFRA Section 3(c)(2)(B) Summary Sheet," EPA Form 8580-1 (Appendix E).

(2) Within 6 months from receipt of this Standard, registrants must submit:

(a) Confidential Statement of Formula, EPA Form 8570-4.

(b) Two copies of draft labeling, including the label and associated brochures. If current labeling conforms to the requirements of this Standard and the results of the short-term data, such labeling should be submitted. End-use product labeling must comply specifically with the instructions in this Standard. 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 inch files. The draft label must indicate the intended colors of the final label, clear indication of the front panel label, and the intended type sizes of the text.

(3) Within the time frames set forth in Table A, registrants must submit all generic data, unless they are eligible for the formulator's exemption.

d. Products Qualifying for Formulator's Exemption. Within 90 days from receipt of this Standard, registrants must submit a Formulator's Exemption Statement, Appendix G. They must also submit a current Confidential Statement of Formula or certify that the Confidential Statement of Formula on file is complete, current and accurate.

2. Submissions to Product Manager. Applications and other required information should be submitted to the Product Manager, Registration Division. If, for any reason, any test is delayed or aborted so that the agreed schedule cannot be met, the Product Manager must be notified.

The address for submissions to the Product Manager is:

Mr. Robert J. Taylor
Product Manager
Registration Division (TS-767C)
Office of Pesticide Programs
Environmental Protection Agency
401 M St., SW.
Washington, D.C. 20460
Phone No. (703) 557-1800

3. Submissions to the Office of Compliance Monitoring. If, on the FIFRA Section 3(c)(2)(B) Summary Sheet, a registrant commits to develop the data, requests a minor chemical exemption, presents arguments that a data requirement is not applicable, or submits protocols or modified protocols for Agency review, the registrant must also 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 Standard. Actual studies are not to be submitted.

If for any reason any test is delayed or aborted so that the agreed schedule cannot be met, the Office of Compliance Monitoring must also be notified.

The address for submission 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 A
EPA INDEX TO PESTICIDE CHEMICALS
ORYZALIN

EPA Index to Pesticide Chemicals

h104201

ORYZALIN*

TYPE PESTICIDE: Herbicide

FORMULATIONS:

WP (75%)

EC (1.5 lb/gal, 2 lb/gal)

FLC (4 lb/gal)

GENERAL WARNINGS AND LIMITATIONS: A selective, surface-applied herbicide for preemergent control of most annual grasses and certain broadleaf weeds. Oryzalin will not control established weeds. Existing weeds must be destroyed prior to application. Chop and thoroughly mix crop residues into the soil to a depth of at least 4 to 6 inches by deep plowing or disking, and break up large clods. A 0.5 inch of rain or its equivalent in center pivot or sprinkler irrigation is necessary to activate oryzalin. If weeds begin to emerge, shallow cultivate 1 to 2 inches to destroy existing weeds and place oryzalin in the zone of weed seed germination. If heavy rains pack the soil surface, use a rotary hoe to break the crust to aid crop emergence. Silty clay loams and sandy clay loams are transitional soils and may be classified as either medium or heavy textured soils. Unless otherwise specified, use the lower dosage on coarse and medium textured soils, and the higher dosage on fine textured soils. Oryzalin is not recommended for use on soils containing more than 5 percent organic matter. Make only 1 application per season. Dosages are expressed as pounds a.i. broadcast rate per acre. For band applications, reduce dosage in proportion to band area actually treated. When tank mixes are used, observe all precautions and limitations given on the labeling of tank mix chemicals. Apply in 20 to 40 gallons of water per acre by ground or 2 to 10 gallons by air, unless otherwise specified.

Definition of Terms:

a.i. - active ingredient

TIME REQUIRED FOR CONTROL: Not located.

PHYTOTOXICITY TO TARGET WEEDS: Not located.

PHYTOTOXICITY TO CROPS: Not located.

MODE OF ACTION: Inhibits both root and shoot growth when absorbed by the roots of germinating plants.

*Surflan

3,5-dinitro-N⁴,N⁴-dipropylsulfanilamide

Issued: 1-17-84

I-104201-1

EPA Index to Pesticide Chemicals

ORYZALIN

BROADLEAF WEEDS CONTROLLED:

PBFDCBC	Annual sowthistle	(a)
PBKAIAB	Bittercress	
PBKAFBF	Black mustard	(a)
PEWAIBE	Black nightshade	(a)
PADABBA	Carpetweed	
PAZAAAC	Chickweed	
PAMAIBA	Climbing milkweed	(a)
PARABBB	Coast fiddleneck	
PAZAOBB	Common chickweed	
PBFCXBK	Common groundsel	(a)
PBDAEBA	Common lambsquarters	
PDAAHBB	Common mallow	(a)
PEDADBA	Common purslane	
PBFAEBA	Common ragweed	(a)
PDPABBA	Creeping woodsorrel	
PEMAEBB	Florida pusley	
PBFAEBE	Giant ragweed	(a)
PCOAFBA	Henbit	
PBFAVBA	Horseweed	(a)
PEAAGBP	Ladysthumb	(a)
PBDAEAB	Lambsquarters	
PBKBDDB	London rocket	(a)
PEMAEAA	Mexican clover	
PBGAAAB	Morningglory	(a)
PEAAGBO	Pennsylvania smartweed	(a)
PAAAAAB	Pigweed	
PBFCEBF	Prickly lettuce	(a)
PDAAJBF	Prickly sida	(a)
PEAAGBD	Prostrate knotweed	
PAFACBC	Prostrate pigweed	
PBVAGBQ	Prostrate spurge	(a)(b)
PFMAFBB	Puncturevine	
PAAAAABP	Purslane	
PEDABBA	Redmaids rockpurslane	(a)
PAFACBI	Redroot pigweed	
PBZABBB	Redstem filaree	(a)
PEDABAA	Rockpurslane	(a)
PAFACAB	Rough pigweed	
PBKAHBA	Shepherdspurse	(a)
PEAAGAD	Smartweed	(a)
PAFACBE	Smooth pigweed	
PAFACBJ	Spiny amaranth	
PBVAGBK	Spotted spurge	(a)
PAFACBA	Tumble pigweed	
PDAABBB	Velvetleaf	(a)
PBZABBC	Whitestem filaree	(a)
PBKAFBE	Wild mustard	(a)

(a) Partial control or suppression only.

(b) Provides control on fine textured soils in cotton at 1.5 lb
a.i./A.

EPA Index to Pesticide Chemicals

ORYZALIN

GRASSES AND OTHER MONOCOTS CONTROLLED:

PCACKBA	Annual bluegrass	
PCABHBB	Barnyardgrass	
PCACEBE	Browntop panicum	(b)
PCAAUBA	Buffalograss	(b)
PCABFAA	Crabgrass	
PCABCBA	Crowfootgrass	
PCABLAA	Cupgrass	
PCACEBD	Fall panicum	
PCAAWBB	Field sandbur	
PCACUAA	Foxtail	
PCACUBA	Giant foxtail	
PCABIBA	Goosegrass	
PCACUBF	Green foxtail	
PCABZBA	Italian ryegrass	
PCACWBG	Johnsongrass (seedling)	
PCABHBA	Junglerice	
PCABFBF	Large crabgrass	
PCABSBF	Little barley	
PCABKBE	Mexican lovegrass	
PCABKBK	Orcutt lovegrass	
PCABYBB	Red sprangletop	
PCACCBA	Rice	
PCACUAC	Robust foxtail	
PCAAARA	Signalgrass	
PCABFBD	Smooth crabgrass	
PCABLBA	Southwestern cupgrass	
PCACEBL	Texas panicum	(b)
PCADFBA	Wheat (volunteer)	(a)
PCAAOBB	Wild oat	
PAAAABC	Wiregrass	
PCACEBC	Witchgrass	
PCACUBD	Yellow foxtail	

(a) Partial control or suppression only.

(b) Provides control on fine textured soils in cotton at 1.5 lb
a.i./A.

EPA Index to Pesticide Chemicals

ORYZALIN

Site, Dosage
and Formulation
(1b a.i./A)

Tolerance, Use, Limitations

TERRESTRIAL FOOD CROP

(Agricultural Crops)

General Warnings and Limitations: Do not apply to newly transplanted fruit and nut trees, or vineyards until the soil has settled and there are no cracks present. Do not apply via center pivot irrigation systems to fruit and nut orchards or vineyards. In CA do not apply to non-dormant fruit and nut orchards or vineyards through overhead sprinkler irrigation systems.

/03001AA

Almond

0.05 ppm (nuts and almond hulls)

2-6
(75% WP)
(2 lb/gal EC)
(4 lb/gal FlC)

Directed spray. Broadcast or band application to orchard floor for short and long term weed control. Use 2 lb a.i./A for control to last for 2 to 4 months, 4 lb a.i./A for 6 to 8 months, and 6 lb a.i./A for 8 to 12 months.
May be tank mixed with dichlobenil; paraquat dichloride; simazine; glyphosate, isopropylamine salt; norflurazon; or oxyfluorfen.

/04001AA

Apple

0.05 ppm (pome fruits)

2-6
(75% WP)
(2 lb/gal EC)
(4 lb/gal FlC)

Directed spray. Broadcast or band application to orchard floor for short and long term weed control. Use 2 lb a.i./A for control to last for 2 to 4 months, 4 lb a.i./A for 6 to 8 months, and 6 lb a.i./A for 8 to 12 months.
May be tank mixed with terbacil; dichlobenil; diuron; paraquat dichloride; simazine; glyphosate, isopropylamine salt; or norflurazon.

/04001DA

Apple (nursery stock) N.F.

/04003DA

Bartlett Pear
(nursery stock)

/05002DA

Cherry (nursery stock)

2-4
(75% WP)
(4 lb/gal FlC)

Broadcast. Apply as an over-the-top or directed spray. Use 2 lb a.i./A for control to last for 2 to 4 months, and 4 lb a.i./A for 6 to 8 months. Apply only to established plantings. Rooted liners should be established in containers 2 weeks prior to treatment or crop injury may occur. Directed spray may be tank mixed with glyphosate, isopropylamine salt.

EPA Index to Pesticide Chemicals

ORYZALIN

	<u>Site, Dosage and Formulation</u> (lb a.i./A)	<u>Tolerance, Use, Limitations</u>
/05001AA	<u>Apricot</u> 2-6 (75% WP) (4 lb/gal F1C)	0.05 ppm (stone fruits) Directed spray. Broadcast or band application to orchard floor for short and long term weed control. Use 2 lb a.i./A for control to last for 2 to 4 months, 4 lb a.i./A for 6 to 8 months, and 6 lb a.i./A for 8 to 12 months. May be tank mixed with paraquat dichloride; norflurazon; or oxyfluorfen.
/06001AA	<u>Avocado</u> 2-6 (75% WP) (4 lb/gal F1C)	0.05 ppm Directed spray. Broadcast or band application to orchard floor for short and long term weed control. Use 2 lb a.i./A for control to last for 2 to 4 months, 4 lb a.i./A for 6 to 8 months, and 6 lb a.i./A for 8 to 12 months. May be tank mixed with paraquat dichloride; simazine; or glyphosate, isopropylamine salt.
	<u>Bartlett Pear</u> (nursery stock)	See Apple (nursery stock) cluster.
/01002AA	<u>Blackberry</u>	0.05 ppm (small fruits)
/01009AA	<u>Blueberry</u> 2-6 (75% WP) (4 lb/gal F1C)	Directed spray. Broadcast or band application to orchard floor for short and long term weed control. Use 2 lb a.i./A for control to last for 2 to 4 months, 4 lb a.i./A for 6 to 8 months, and 6 lb a.i./A for 8 to 12 months. May be tank mixed with terbacil; dichlobenil; diuron; paraquat dichloride; or simazine.
/01003AA	<u>Boysenberry</u> 2-6 (4 lb/gal F1C)	0.05 ppm (small fruits) Directed spray. Broadcast or band application to orchard floor for short and long term weed control. Use 2 lb a.i./A for control to last for 2 to 4 months, 4 lb a.i./A for 6 to 8 months, and 6 lb a.i./A for 8 to 12 months. May be tank mixed with terbacil; diuron; paraquat dichloride; or simazine.
	<u>Cherry (nursery stock)</u>	See Apple (nursery stock) cluster.

EPA Index to Pesticide Chemicals

ORYZALIN

	<u>Site, Dosage and Formulation (lb a.i./A)</u>	<u>Tolerance, Use, Limitations</u>
/05002AA	<u>Cherry (Sour, Sweet)</u> 2-6 (75% WP) (2 lb/gal EC) (4 lb/gal FlC)	0.05 ppm (stone fruits) Directed spray. Broadcast or band application to orchard floor for short and long term weed control. Use 2 lb a.i./A for control to last for 2 to 4 months, 4 lb a.i./A for 6 to 8 months, and 6 lb a.i./A for 8 to 12 months. May be tank mixed with dichlobenil; paraquat dichloride; simazine; glyphosate, isopropylamine salt; or norflurazon.
/28007AA	<u>Cotton</u> 1-1.5 (75% WP) (4 lb/gal FlC)	0.05 ppm (cottonseed) Do not feed forage from treated fields to livestock. Do not plant any root crop for 12 months following an application. Use limited to TX. Preemergence. Broadcast. Apply at planting or within 2 days after planting. Use the lower dosage on medium textured soils and the higher dosage on fine textured soils. May be applied by air.
/01011AA /01012AA	<u>Currant</u> <u>Elderberry</u> 2-6 (4 lb/gal FlC)	0.05 ppm (small fruits) Directed spray. Broadcast or band application to orchard floor for short and long term weed control. Use 2 lb a.i./A for control to last for 2 to 4 months, 4 lb a.i./A for 6 to 8 months, and 6 lb a.i./A for 8 to 12 months.
/01004AA	<u>Dewberry</u> 2-6 (75% WP) (4 lb/gal FlC) <u>Elderberry</u>	0.05 ppm (small fruits) Directed spray. Broadcast or band application to orchard floor for short and long term weed control. Use 2 lb a.i./A for control to last for 2 to 4 months, 4 lb a.i./A for 6 to 8 months, and 6 lb a.i./A for 8 to 12 months. May be tank mixed with terbacil; diuron; or simazine. See Currant cluster.

EPA Index to Pesticide Chemicals

ORYZALIN

	<u>Site, Dosage and Formulation</u> (lb a.i./A)	<u>Tolerance, Use, Limitations</u>
/03009AA /04003AA	<u>English Walnut</u> <u>Pear</u> 2-6 (75% WP) (2 lb/gal EC) (4 lb/gal FlC)	0.05 ppm (nuts, pome fruits) Directed spray. Broadcast or band application to orchard floor for short and long term weed control. Use 2 lb a.i./A for control to last for 2 to 4 months, 4 lb a.i./A for 6 to 8 months, and 6 lb a.i./A for 8 to 12 months. May be tank mixed with dichlobenil; diuron; paraquat dichloride; simazine; glyphosate, isopropylamine salt; or norflurazon.
/06005AA	<u>Fig</u> 2-6 (75% WP) (4 lb/gal FlC)	0.05 ppm Directed spray. Broadcast or band application to orchard floor for short and long term weed control. Use 2 lb a.i./A for control to last for 2 to 4 months, 4 lb a.i./A for 6 to 8 months, and 6 lb a.i./A for 8 to 12 months. May be tank mixed with paraquat dichloride.
/03005AA	<u>Filbert</u> 2-6 (75% WP) (4 lb/gal FlC)	0.05 ppm (nuts) Directed spray. Broadcast or band application to orchard floor for short and long term weed control. Use 2 lb a.i./A for control to last for 2 to 4 months, 4 lb a.i./A for 6 to 8 months, and 6 lb a.i./A for 8 to 12 months. May be tank mixed with dichlobenil; paraquat dichloride; simazine; norflurazon; or oxyfluorfen.
/01013AA	<u>Gooseberry</u> 2-6 (4 lb/gal FlC)	0.05 ppm (small fruits) Directed spray. Broadcast or band application to orchard floor for short and long term weed control. Use 2 lb a.i./A for control to last for 2 to 4 months, 4 lb a.i./A for 6 to 8 months, and 6 lb a.i./A for 8 to 12 months. May be tank mixed with diuron.
/01014AA	<u>Grapes</u> 2-6 (75% WP) (2 lb/gal EC) (4 lb/gal FlC)	0.05 ppm (small fruits) Directed spray. Broadcast or band application to orchard floor for short and long term weed control. Use 2 lb a.i./A for control to last for 2 to 4 months, 4 lb a.i./A for 6 to 8 months, and 6 lb a.i./A for 8 to 12 months. May be tank mixed with dichlobenil; diuron; or simazine.

EPA Index to Pesticide Chemicals

ORYZALIN

	<u>Site, Dosage and Formulation</u> (lb a.i./A)	<u>Tolerance, Use, Limitations</u>
/02002AA /02004AA /02006AA	<u>Grapefruit</u> <u>Lemon</u> <u>Orange</u>	0.05 ppm (citrus fruits)
	2-6 (75% WP) (4 lb/gal FlC)	Directed spray. Broadcast or band application to orchard floor for short and long term weed control. Use 2 lb a.i./A for control to last for 2 to 4 months, 4 lb a.i./A for 6 to 8 months, and 6 lb a.i./A for 8 to 12 months. May be tank mixed with bromacil; terbacil; diuron; paraquat dichloride; simazine; glyphosate, isopropylamine salt; norflurazon; or bromacil and terbacil.
/06018AA /06015AA	<u>Kiwi Fruit</u> <u>Pomegranate</u>	0.05 ppm (kiwifruits, pomegranates)
	2-6 (75% WP) (4 lb/gal FlC)	Directed spray. Broadcast or band application to orchard floor for short and long term weed control. Use 2 lb a.i./A for control to last for 2 to 4 months, 4 lb a.i./A for 6 to 8 months, and 6 lb a.i./A for 8 to 12 months.
	<u>Lemon</u>	See Grapefruit cluster.
/01005AA	<u>Loganberry</u>	0.05 ppm (small fruits)
	2-6 (4 lb/gal FlC)	Directed spray. Broadcast or band application to orchard floor for short and long term weed control. Use 2 lb a.i./A for control to last for 2 to 4 months, 4 lb a.i./A for 6 to 8 months, and 6 lb a.i./A for 8 to 12 months. May be tank mixed with terbacil; diuron; or simazine.
/03007AA	<u>Macadamia Nut</u>	0.05 ppm (nuts)
	2-6 (4 lb/gal FlC)	Directed spray. Broadcast or band application to orchard floor for short and long term weed control. Use 2 lb a.i./A for control to last for 2 to 4 months, 4 lb a.i./A for 6 to 8 months, and 6 lb a.i./A for 8 to 12 months. May be tank mixed with diuron; or simazine.

EPA Index to Pesticide Chemicals

ORYZALIN

	<u>Site, Dosage and Formulation</u> (lb a.i./A)	<u>Tolerance, Use, Limitations</u>
/28012AA	<u>Mint (Peppermint, Spearment)</u>	0.05 ppm (hay) 0.1 ppm (oil)
		<u>General Information:</u> Deep plow prior to planting rotational crops within 15 months of application. Do not apply to mint growing under adverse conditions or to mint weakened by severe winter injury.
	1-1.5 (75% WP) (4 lb/gal F1C)	Preharvest or postharvest. Broadcast application for use on coarse and medium textured soils. Apply up to 60 days before harvest or to mint stubble any time following harvest in the fall.
	1-1.5 (75% WP) (4 lb/gal F1C)	Use limited to the Midwest. Preemergence. Broadcast application. For use on coarse and medium textured soils. Apply to established mint just after the last cultivation. Tank mix with terbacil.
	1-1.5 (4 lb/gal F1C)	Use limited to the Pacific Northwest (west of the Cascade Mountains). Preemergence. Broadcast application for use on coarse and medium textured soils. Apply to established mint in the spring or fall after the last cultivation. Tank mix with terbacil.
/05003AA	<u>Nectarine</u>	0.05 ppm (stone fruits)
	2-6 (75% WP) (4 lb/gal F1C)	Directed spray. Broadcast or band application to orchard floor for short and long term weed control. Use 2 lb a.i./A for control to last for 2 to 4 months, 4 lb a.i./A for 6 to 8 months, and 6 lb a.i./A for 8 to 12 months. May be tank mixed with dichlobenil; paraquat dichloride; norflurazon; or oxyfluorfen.

EPA Index to Pesticide Chemicals

ORYZALIN

	<u>Site, Dosage and Formulation</u> (lb a.i./A)	<u>Tolerance, Use, Limitations</u>
/06009AA	<u>Olive</u> 2-6 (75% WP) (4 lb/gal FlC)	0.05 ppm Directed spray. Broadcast or band application to orchard floor for short and long term weed control. Use 2 lb a.i./A for control to last for 2 to 4 months, 4 lb a.i./A for 6 to 8 months, and 6 lb a.i./A for 8 to 12 months. May be tank mixed with diuron; paraquat dichloride; or simazine.
	<u>Orange</u>	See Grapefruit cluster.
/05004AA	<u>Peach</u> 2-6 (75% WP) (2 lb/gal EC) (4 lb/gal FlC)	0.05 ppm (stone fruits) Directed spray. Broadcast or band application to orchard floor for short and long term weed control. Use 2 lb a.i./A for control to last for 2 to 4 months, 4 lb a.i./A for 6 to 8 months, and 6 lb a.i./A for 8 to 12 months. May be tank mixed with terbacil; dichlobenil; diuron; paraquat dichloride; simazine; or oxyfluorfen.
/28016AA	<u>Peas (English, Green)</u> 0.5 (4 lb/gal FlC)	0.05 ppm (peas, succulent) Do not feed forage from treated fields to livestock. Do not plant any root crop for 12 months following application. Preplant. Broadcast. Apply up to 2 weeks prior to planting. Tank mix with trifluralin.
/03008AA	<u>Pecan</u> 2-6 (75% WP) (4 lb/gal FlC)	0.05 ppm (nuts) Directed spray. Broadcast or band application to orchard floor for short and long term weed control. Use 2 lb a.i./A for control to last for 2 to 4 months, 4 lb a.i./A for 6 to 8 months, and 6 lb a.i./A for 8 to 12 months. May be tank mixed with terbacil; dichlobenil; diuron; paraquat dichloride; simazine; or glyphosate, isopropylamine salt.

EPA Index to Pesticide Chemicals

ORYZALIN

	<u>Site, Dosage and Formulation</u> (lb a.i./A)	<u>Tolerance, Use, Limitations</u>
/03011AA	<u>Pistachio</u>	0.05 ppm (nuts)
	2-6 (75% WP) (2 lb/gal EC) (4 lb/gal F1C)	Directed spray. Broadcast or band application to orchard floor for short and long term weed control. Use 2 lb a.i./A for control to last for 2 to 4 months, 4 lb a.i./A for 6 to 8 months, and 6 lb a.i./A for 8 to 12 months. May be tank mixed with glyphosate, isopropylamine salt.
/05005AA	<u>Plum</u>	0.05 ppm (stone fruits)
	2-6 (75% WP) (2 lb/gal EC) (4 lb/gal F1C)	Directed spray. Broadcast or band application to orchard floor for short and long term weed control. Use 2 lb a.i./A for control to last for 2 to 4 months, 4 lb a.i./A for 6 to 8 months, and 6 lb a.i./A for 8 to 12 months. May be tank mixed with dichlobenil; paraquat dichloride; simazine; norflurazon; or oxyfluorfen.
	<u>Pomegranate</u>	See Kiwi Fruit cluster.
/14013AA	<u>Potato (White)</u>	0.05 ppm
	0.75-1 (75% WP) (4 lb/gal F1C)	Preemergence. Broadcast. Where rebedding and drag-off are standard cultural practices, applications should be made following drag-off. For use on coarse and medium textured soils. May be tank mixed with metribuzin.
/05006AA	<u>Prune</u>	0.05 ppm (stone fruits)
	2-6 (75% WP) (2 lb/gal EC) (4 lb/gal F1C)	Directed spray. Broadcast or band application to orchard floor for short and long term weed control. Use 2 lb a.i./A for control to last for 2 to 4 months, 4 lb a.i./A for 6 to 8 months, and 6 lb a.i./A for 8 to 12 months. May be tank mixed with paraquat dichloride; norflurazon; or oxyfluorfen.
/01006AA	<u>Raspberry</u>	0.05 ppm (small fruits)
	2-6 (75% WP) (4 lb/gal F1C)	Directed spray. Broadcast or band application to orchard floor for short and long term weed control. Use 2 lb a.i./A for control to last for 2 to 4 months, 4 lb a.i./A for 6 to 8 months, and 6 lb a.i./A for 8 to 12 months. May be tank mixed with terbacil; dichlobenil; diuron; paraquat dichloride; or simazine.

EPA Index to Pesticide Chemicals

ORYZALIN

<u>Site, Dosage and Formulation</u> (lb a.i./A)	<u>Tolerance, Use, Limitations</u>
/28023AA <u>Soybeans</u>	0.1 ppm Do not feed forage or vines from treated fields to livestock. Do not plant any root crop for 12 months following an application.
	<u>General Information:</u> Aerial applications may be made when oryzalin is applied alone or in tank mix with linuron; metribuzin; or dinoseb and naptalam.
0.28-0.56 (1.5 lb/gal EC)	Preplant soil incorporation. Apply in the spring and incorporate into top 1 to 3 inches of the soil within 3 days after application. Treated soil may be shallow cultivated without reducing weed control; do not cultivate deeper than the treated soil. May be applied in conjunction with a liquid fertilizer or impregnated on a dry bulk fertilizer. May be applied by air. Formulated with trifluralin.
0.28-0.56 (1.5 lb/gal EC)	Preplant soil incorporation. Incorporate into top 1 to 3 inches of the soil within 3 days after application. Tank mix with chloramben; or metribuzin. Formulated with trifluralin.
0.5-1.25 (75% WP)	Use limited to AR, LA, MS and TX. Preplant. Broadcast or band application for the suppression of rice. Apply up to 2 weeks prior to planting. Tank mix with metribuzin.
0.75-1.5 (75% WP) (2 lb/gal EC) (4 lb/gal FlC)	Preplant or preemergence. Broadcast or band. Apply from 4 weeks prior to planting up through 2 days after planting.
0.5-1.25 (75% WP) (2 lb/gal EC) (4 lb/gal FlC)	Preplant or preemergence. Broadcast or band. Apply from 2 to 4 weeks prior to planting up through 2 days after planting, but before crop emerges. Tank mix with metribuzin.
0.5-1.25 (75% WP) (2 lb/gal EC) (4 lb/gal FlC)	Preemergence. Broadcast or band. Apply within 2 days after planting, but before crop emergence. Tank mix with chloramben; linuron; or naptalam and dinoseb.

EPA Index to Pesticide Chemicals

ORYZALIN

Site, Dosage
and Formulation
(lb a.i./A)

Tolerance, Use, Limitations

Soybeans (continued)

1-1.5 (4 lb/gal FlC)	Broadcast or band application. Apply anytime after harvest in the fall up to spring seeding and prior to weed germination. Application can be made directly over undisturbed stubble from the previous crop. Use the lower rate under light crop residue conditions and under light weed pressure. Sequential herbicide applications can be made in the spring to control escaped broad-leaf weeds and to provide control of weeds not controlled by oryzalin. Do not till soil after oryzalin application and before planting.
0.75-1.5 (75% WP) (2 lb/gal EC) (4 lb/gal FlC)	Preemergence. Broadcast or band application for use in no-till soybeans. Apply at planting or within 2 days after planting. Do not spray over the top of emerged soybeans. Tank mix with linuron; metribuzin; linuron and paraquat dichloride; linuron and glyphosate, isopropylamine salt; paraquat dichloride and metribuzin; or metribuzin and glyphosate, isopropylamine salt.

TERRESTRIAL NON-FOOD CROP

(Agricultural Crops)

/26005AA	<u>Tobacco, Air Cured</u> <u>(Burley, Maryland,</u> <u>Dark)</u>	N.F. Do not plant any root crop for 12 months following application.
/26006AA	<u>Tobacco, Flue Cured</u> 0.5-1 (4 lb/gal FlC)	Posttransplant. Directed spray. Apply at layby following the last normal cultivation, usually 4 to 6 weeks after transplanting. Do not allow spray to contact tobacco plants. Do not spray in the bud stage of the tobacco plants, as crop injury may occur. If weeds begin to emerge, a shallow cultivation of 1 to 2 inches is recommended.

EPA Index to Pesticide Chemicals

ORYZALIN

<u>Site, Dosage</u> <u>and Formulation</u> (1b a.i./A)	<u>Tolerance, Use, Limitations</u>
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(Ornamental Plants and Forest Trees)

/31303AA	<u>African Trailing Daisy</u>
/34427AA	<u>Akeake</u>
/34148AA	<u>Algerian Ivy</u>
/35288AA	<u>American Holly</u> <u>(Howard)</u>
/35288DA	<u>American Holly</u> <u>(Howard) (nursery</u> <u>stock)</u>
/34487AA	<u>Amur Privet</u>
/34487DA	<u>Amur Privet (nursery</u> <u>stock)</u>
/35315AA	<u>Andorra Juniper</u>
/34543AA	<u>Argentine Trumpet-</u> <u>vine</u>
/34543DA	<u>Argentine Trumpet-</u> <u>vine (nursery stock)</u>
/34297AA	<u>Azalea (Gable Hy-</u> <u>brids)</u>
/34297DA	<u>Azalea (Gable Hy-</u> <u>brids) (nursery</u> <u>stock)</u>
/34545AA	<u>Azalea (Louisa)</u>
/34545DA	<u>Azalea (Louisa)</u> <u>(nursery stock)</u>
/31034AA	<u>Begonia</u>
/33086AA	<u>Big Blue Lilyturf</u> <u>(Ground Cover)</u>
/33086DA	<u>Big Blue Lilyturf</u> <u>(Ground Cover)</u> <u>(nursery stock)</u>
/34451AA	<u>Bigleaf Wintercreeper</u>
/34451DA	<u>Bigleaf Wintercreeper</u> <u>(nursery stock)</u>
/31038AA	<u>Bird-of-Paradise</u>
/35033AA	<u>Blue Spruce</u>
/35033DA	<u>Blue Spruce (nursery</u> <u>stock)</u>
/34346AA	<u>Border Forsythia</u>
/34031AA	<u>Boxwood</u>
/34031DA	<u>Boxwood (nursery</u> <u>stock)</u>
/34421AA	<u>Bright Bead Coton-</u> <u>easter</u>
/35378AA	<u>Brush Cherry</u>
/35378DA	<u>Brush Cherry (nursery</u> <u>stock)</u>

EPA Index to Pesticide Chemicals

ORYZALIN

<u>Site, Dosage</u> <u>and Formulation</u> (lb a.i./A)	<u>Tolerance, Use, Limitations</u>
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African Trailing Daisy cluster (continued)

/35386AA	<u>California-Laurel</u>
/35385AA	<u>Canary Pine</u>
/35385DA	<u>Canary Pine (nursery</u> <u>stock)</u>
/34157AA	<u>Cape-Jasmine</u>
/34157DA	<u>Cape-Jasmine (nursery</u> <u>stock)</u>
/35384AA	<u>Carolina Cherry-</u> <u>Laurel</u>
/34158AA	<u>Ceanothus</u>
/34158DA	<u>Ceanothus (nursery</u> <u>stock)</u>
/34040AA	<u>Cherry Laurel</u>
/34417AA	<u>Chinese Firethorn</u>
/34417DA	<u>Chinese Firethorn</u> <u>(nursery stock)</u>
/34160AA	<u>Chinese Hibiscus</u>
/34161AA	<u>Chinese Holly</u>
/34161DA	<u>Chinese Holly (nursery</u> <u>stock)</u>
/35155AA	<u>Chinese Juniper</u>
/35155DA	<u>Chinese Juniper</u> <u>(nursery stock)</u>
/34419AA	<u>Chinese Star-Jasmine</u>
/34486AA	<u>Coast Leucothoe</u>
/34486DA	<u>Coast Leucothoe</u> <u>(nursery stock)</u>
/31493AA	<u>Common Geranium</u>
/31496AA	<u>Common Zinnia</u>
/34305AA	<u>Convex Leaf Holly</u>
/34305DA	<u>Convex Leaf Holly</u> <u>(nursery stock)</u>
/34560AA	<u>Cotoneaster Parneyi</u>
/34560DA	<u>Cotoneaster Parneyi</u> <u>(nursery stock)</u>
/34244AA	<u>Cranberry Cotoneaster</u>
/34244DA	<u>Cranberry Cotoneaster</u> <u>(nursery stock)</u>
/34046AA	<u>Crape Myrtle</u>
/34046DA	<u>Crape Myrtle (nursery</u> <u>stock)</u>
/35160AA	<u>Creeping Juniper</u>
/35160DA	<u>Creeping Juniper</u> <u>(nursery stock)</u>
/35236AA	<u>Cryptomeria</u>
/35236DA	<u>Cryptomeria (nursery</u> <u>stock)</u>

EPA Index to Pesticide Chemicals

ORYZALIN

<u>Site, Dosage</u> <u>and Formulation</u> (lb a.i./A)	<u>Tolerance, Use, Limitations</u>
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African Trailing Daisy cluster (continued)

/33130AA	<u>Dwarf Coyotebrush</u>
/31237AA	<u>Easter Cactus</u>
/31237DA	<u>Easter Cactus</u> (nursery stock)
/35047AA	<u>Eastern Redcedar</u>
/35047DA	<u>Eastern Redcedar</u> (nursery stock)
/35048AA	<u>Eastern White Pine</u>
/35237AA	<u>Ellwood False Cypress</u>
/35237DA	<u>Ellwood False Cypress</u> (nursery stock)
/34323AA	<u>Emerald Cushion</u> <u>Euonymus</u>
/34323DA	<u>Emerald Cushion</u> <u>Euonymus (nursery</u> <u>stock)</u>
/35169AA	<u>English Holly</u>
/34052AA	<u>English Ivy</u>
/34561AA	<u>Escallonia (Frades)</u>
/34561DA	<u>Escallonia (Frades)</u> (nursery stock)
/35297AA	<u>Eucalyptus cinerea</u>
/34233AA	<u>Evergreen Euonymus</u>
/34233DA	<u>Evergreen Euonymus</u> (nursery stock)
/34172AA	<u>Fatshedera</u>
/34172DA	<u>Fatshedera (nursery</u> <u>stock)</u>
/34056AA	<u>Fetter-Bush</u>
/34056DA	<u>Fetter-Bush (nursery</u> <u>stock)</u>
/34237AA	<u>Floribunda Rose</u>
/34237DA	<u>Floribunda Rose</u> (nursery stock)
/31491AA	<u>Florists' Chrysanthemum</u>
/34176AA	<u>Formosan Pyracantha</u>
/34176DA	<u>Formosan Pyracantha</u> (nursery stock)
/34518AA	<u>Fraser Photinia</u>
/34518DA	<u>Fraser Photinia</u> (nursery stock)
/31239AA	<u>French Marigold</u>
/31494AA	<u>Garden Petunia</u>
/35062AA	<u>Ginkgo</u>
/35062DA	<u>Ginkgo (nursery</u> <u>stock)</u>

EPA Index to Pesticide Chemicals

ORYZALIN

<u>Site, Dosage</u> <u>and Formulation</u> (lb a.i./A)	<u>Tolerance, Use, Limitations</u>
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African Trailing Daisy cluster (continued)

/34422AA	<u>Glossy Abelia</u>
/34179AA	<u>Glossy Privet</u>
/34179DA	<u>Glossy Privet (nursery stock)</u>
/35063AA	<u>Golden-Rain Tree</u>
/33104AA	<u>Greater Periwinkle</u> <u>(Ground Cover)</u>
/35403AA	<u>Greek Juniper</u>
/35403DA	<u>Greek Juniper</u> <u>(nursery stock)</u>
/34331AA	<u>Greek Myrtle</u>
/34331DA	<u>Greek Myrtle (nursery stock)</u>
/34313AA	<u>Hiryu Azalea</u> <u>(Hinodegiri)</u>
/34313DA	<u>Hiryu Azalea</u> <u>(Hinodegiri)</u> <u>(nursery stock)</u>
/34071AA	<u>Holly osmanthus</u>
/34238AA	<u>Hybrid Tea Roses</u>
/34238DA	<u>Hybrid Tea Roses</u> <u>(nursery stock)</u>
/34075AA	<u>India Hawthorn</u>
/34075DA	<u>India Hawthorn</u> <u>(nursery stock)</u>
/35340AA	<u>Interior Live Oak</u>
/35340DA	<u>Interior Live Oak</u> <u>(nursery stock)</u>
/35182AA	<u>Italian Cypress</u>
/35182DA	<u>Italian Cypress</u> <u>(nursery stock)</u>
/34078AA	<u>Japanese Andromeda</u>
/34078DA	<u>Japanese Andromeda</u> <u>(nursery stock)</u>
/34079AA	<u>Japanese Barberry</u>
/34079DA	<u>Japanese Barberry</u> <u>(nursery stock)</u>
/35185AA	<u>Japanese Black Pine</u>
/35185DA	<u>Japanese Black Pine</u> <u>(nursery stock)</u>
/34272AA	<u>Japanese Boxwood</u>
/34272DA	<u>Japanese Boxwood</u> <u>(nursery stock)</u>
/33119AA	<u>Japanese Garden Juniper (Ground Cover)</u>

EPA Index to Pesticide Chemicals

ORYZALIN

<u>Site, Dosage</u> <u>and Formulation</u> (1b a.i./A)	<u>Tolerance, Use, Limitations</u>
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African Trailing Daisy cluster (continued)

/33119DA	<u>Japanese Garden Juniper (Ground Cover)</u> <u>(nursery stock)</u>
/34307AA	<u>Japanese Honeysuckle</u>
/34310AA	<u>Japanese Pittosporum</u>
/34310DA	<u>Japanese Pittosporum</u> <u>(nursery stock)</u>
/34188AA	<u>Japanese Privet</u>
/34188DA	<u>Japanese Privet</u> <u>(nursery stock)</u>
/35072AA	<u>Japanese Yew</u>
/34285AA	<u>Laurustinus</u>
/34285DA	<u>Laurustinus (nursery stock)</u>
/34414AA	<u>Lemon Bottlebrush</u>
/34414DA	<u>Lemon Bottlebrush</u> <u>(nursery stock)</u>
/33103AA	<u>Lesser Periwinkle</u> <u>(Ground Cover)</u>
/34089AA	<u>Lilac</u>
/34089DA	<u>Lilac (nursery stock)</u>
/31411AA	<u>Lily-of-the-Nile</u>
/31411DA	<u>Lily-of-the-Nile</u> <u>(nursery stock)</u>
/34504AA	<u>Lowfast Bearberry</u> <u>Cotoneaster</u>
/34504DA	<u>Lowfast Bearberry</u> <u>Cotoneaster (nursery stock)</u>
/34091AA	<u>Manzanita</u>
/34097AA	<u>Mountain-Laurel</u>
/35289AA	<u>Myoporum</u>
/34100AA	<u>Nandina</u>
/34100DA	<u>Nandina (nursery stock)</u>
/35328AA	<u>Narrow Leaved Black</u> <u>Peppermint</u>
/35328DA	<u>Narrow Leaved Black</u> <u>Peppermint (nursery stock)</u>
/34562AA	<u>Old-fashioned Weigela</u>
/34102AA	<u>Oleander</u>
/34102DA	<u>Oleander (nursery stock)</u>
/34103AA	<u>Oregongrape</u>
/35254AA	<u>Oriental Arborvitae</u>

EPA Index to Pesticide Chemicals

ORYZALIN

<u>Site, Dosage</u> <u>and Formulation</u> (lb a.i./A)	<u>Tolerance, Use, Limitations</u>
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African Trailing Daisy cluster (continued)

/35254DA	<u>Oriental Arborvitae</u> <u>(nursery stock)</u>
/31149AA	<u>Pansies</u>
/33117AA	<u>Purpleleaf Winter-</u> <u>creeper</u>
/33117DA	<u>Purpleleaf Winter-</u> <u>creeper (nursery</u> <u>stock)</u>
/34353AA	<u>Pyrenees Cotoneaster</u>
/35380AA	<u>Red Ironbark Eucalyp-</u> <u>tus</u>
/34492AA	<u>Rhododendron (PJM</u> <u>Hybrids)</u>
/34492DA	<u>Rhododendron (PJM</u> <u>Hybrids) (nursery</u> <u>stock)</u>
/34555AA	<u>Rhododendron</u> <u>(Ponticum Hybrids)</u>
/34555DA	<u>Rhododendron</u> <u>(Ponticum Hybrids)</u> <u>(nursery stock)</u>
/34493AA	<u>Rhododendron (Rose-</u> <u>bud)</u>
/34493DA	<u>Rhododendron (Rose-</u> <u>bud) (nursery stock)</u>
/34205AA	<u>Rockspray Cotoneaster</u>
/34205DA	<u>Rockspray Cotoneaster</u> <u>(nursery stock)</u>
/35354AA	<u>Rocky Mountain Juni-</u> <u>per</u>
/35354DA	<u>Rocky Mountain Juni-</u> <u>per (nursery stock)</u>
/35491AA	<u>Rocky Mountain Sugar</u> <u>Maple</u>
/35491DA	<u>Rocky Mountain Sugar</u> <u>Maple (nursery</u> <u>stock)</u>
/34120AA	<u>Rose</u>
/34208AA	<u>Sakaki</u>
/34208DA	<u>Sakaki (nursery</u> <u>stock)</u>
/34122AA	<u>Sandankwa Viburnum</u>
/35205AA	<u>Savin Juniper</u>
/35205DA	<u>Savin Juniper</u> <u>(nursery stock)</u>
/34295AA	<u>Scarlet Firethorn</u>

EPA Index to Pesticide Chemicals

ORYZALIN

<u>Site, Dosage</u> <u>and Formulation</u> (1b a.i./A)	<u>Tolerance, Use, Limitations</u>
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African Trailing Daisy cluster (continued)

/34295DA	<u>Scarlet Firethorn</u> <u>(nursery stock)</u>
/34420AA	<u>Shiny Xylosoma</u>
/35209AA	<u>Shore Juniper</u>
/35209DA	<u>Shore Juniper</u> <u>(nursery stock)</u>
/31420AA	<u>Shortleaf Stonecrop</u>
/31408AA	<u>Shrimp Plant</u>
/31408DA	<u>Shrimp Plant (nursery</u> <u>stock)</u>
/35388AA	<u>Soap Tree</u>
/35388DA	<u>Soap Tree (nursery</u> <u>stock)</u>
/35216AA	<u>Southern Magnolia</u>
/33126AA	<u>St. John's-Wort</u> <u>(Ground Cover)</u>
/35118AA	<u>Sweetgum</u>
/35118DA	<u>Sweetgum (nursery</u> <u>stock)</u>
/35393AA	<u>Swiss Mountain Pine</u>
/35393DA	<u>Swiss Mountain Pine</u> <u>(nursery stock)</u>
/31455AA	<u>Treasure Flower</u>
/34309AA	<u>Vicary Golden Privet</u>
/34309DA	<u>Vicary Golden Privet</u> <u>(nursery stock)</u>
/35123AA	<u>Western Redcedar</u>
/35123DA	<u>Western Redcedar</u> <u>(nursery stock)</u>
/35137AA	<u>Wilson Chinese Juniper</u>
/35137DA	<u>Wilson Chinese Juniper (nursery stock)</u>
/34232AA	<u>Winged Euonymus</u>
/34388AA	<u>Yaupon</u>
/34388DA	<u>Yaupon (nursery</u> <u>stock)</u>
/35253AA	<u>Yew Podocarpus</u>
/35253DA	<u>Yew Podocarpus</u> <u>(nursery stock)</u>
/31492AA	<u>Zanzibar Balsam</u>

EPA Index to Pesticide Chemicals

ORYZALIN

Site, Dosage
and Formulation
(lb a.i./A)

Tolerance, Use, Limitations

African Trailing Daisy cluster (continued)

General Information: Apply only to established plantings. Rooted liners should be established in containers 2 weeks prior to treatment or crop injury may occur. On container grown ornamentals where weed germination continues for extended periods of time, repeat applications may be made after 90 days. Do not apply in ornamental plantings where the likelihood of runoff onto lawn areas containing dichondra or cool season turf-grasses exists, as severe injury or death may occur. Do not plant any ornamental species not listed into soil treated the previous season or injury may occur.

2-4
(75% WP)
(4 lb/gal FlC)

Broadcast application for short and long term weed control. Apply as a directed or over-the-top spray. Use the higher dosage when long term (6 to 8 months) control is desired.

2-4
(75% WP)
(4 lb/gal FlC)

Directed spray to undesirable vegetation. Use the higher dosage when long term (6 to 8 months) weed control is desired.
Tank mix with glyphosate, isopropylamine salt.

EPA Index to Pesticide Chemicals

ORYZALIN

Site, Dosage
and Formulation
(lb a.i./A)

Tolerance, Use, Limitations

/33107AA Largeleaf Iceplant
(ground cover)
/31996AA White Iceplant

General Information: When establishing unrooted iceplant on coarse soils in landscape plantings, use only the 2 lb a.i./A dosage. After the iceplant is well established, a second application may be made. Apply only to established plantings. Rooted liners should be established in containers 2 weeks prior to treatment or crop injury may occur. On container grown ornamentals where weed germination continues for extended periods of time, repeat applications may be made after 90 days. Do not apply in ornamental plantings where the likelihood of runoff onto lawn areas containing dichondra or cool season turfgrasses exists, as severe injury or death may occur. Do not plant any ornamental species not listed into soil treated the previous season or injury may occur.

2-4
(75% WP)
(4 lb/gal FlC)

Broadcast application for short and long term weed control. Apply as a directed or over-the-top spray. Use the higher dosage when long term (6 to 8 months) control is desired.

2-4
(75% WP)
(4 lb/gal FlC)

Directed spray to undesirable vegetation. Use the higher dosage when long term (6 to 8 months) weed control is desired.

Tank mix with glyphosate, isopropylamine salt.

(Noncrop, Wide Area, and General Outdoor Treatments)

/670040A Highway Rights-of-Way
/670060A Utility Rights-of-Way

General Information: Use for control of weeds in or around utility substations, highway guardrails, sign posts and delineators and similar sites.

2-4
(75% WP)
(4 lb/gal FlC)

Broadcast. Apply to weed foliage. Use the higher dosage for long term weed control.

May be tank mixed with MSMA; dalapon; paraquat dichloride; or glyphosate, isopropylamine salt.

EPA Index to Pesticide Chemicals

ORYZALIN

Site, Dosage
and Formulation
(lb a.i./A)

Tolerance, Use, Limitations

GREENHOUSE NON-FOOD CROP(Ornamental Plants and Forest Trees)

/40005CA

Greenhouse Benches

0.75-1.5 oz a.i./
1,000 sq.ft
(75% WP)
(4 lb/gal FlC)

Directed spray. Apply to drainage areas under greenhouse benches. Use the higher dosage for long term weed control.

0.75-1.5 oz a.i./
1,000 sq.ft
(75% WP)
(4 lb/gal FlC)

Directed spray to emerged weeds. Use the higher dosage for long term weed control.
Tank mix with MSMA; dalapon; paraquat dichloride; or glyphosate, isopropylamine salt.

FORESTRY

/30153AA

Alpine Fir

/30084AA

Austrian Pine

/30128AA

Balsam Fir

/30111AA

Bishop Pine

/30107AA

Black Spruce

/30141AA

Blue Spruce

/30005AA

Christmas Tree Plan-
tations

/30152AA

Coulter Pine

/30039AA

Douglas-Fir

/30100AA

Eastern White Pine

/30093AA

Englemann Spruce

/30129AA

Fraser Fir

/30090AA

Grand Fir

/30112AA

Monterey Pine

/30130AA

Norway Spruce

/30062AA

Redwood

/30113AA

Scotch Pine

/30154AA

Veitch Fir

/30092AA

White Fir

/30108AA

White Spruce

2-4
(75% WP)
(4 lb/gal FlC)

Broadcast application for short or long term weed control. Apply as a directed or over-the-top spray. Use the higher dosage for long term (6 to 8 months) control.
Tank mix with simazine.

EPA Index to Pesticide Chemicals

ORYZALIN

Site, Dosage
and Formulation
(lb a.i./A)

Tolerance, Use, Limitations

AERIAL AND TANK MIX APPLICATIONS

9001500
AAAAAAA

Aerial Application

--

Refer to

TERRESTRIAL FOOD CROP
(Agricultural Crops)
Cotton, Soybeans

9900300
AAAAAAA

Tank Mix

--

Refer to

TERRESTRIAL FOOD CROP
(Agricultural Crops)
All sites except Cotton, Currant, Elderberry,
Kiwi Fruit, Pomegranate

GREENHOUSE NON-FOOD CROP
(Ornamental Plants and Forest Trees)
Greenhouse Benches

TERRESTRIAL NON-FOOD CROP
(Ornamental Plants and Forest Trees)
All sites

(Non-crop, Wide Area, and General Outdoor
treatments)
All sites

FORESTRY
All sites

EPA Index to Pesticide Chemicals

ORYZALIN

Listing of Registered Pesticide Products by Formulation

&075.0006 75% wettable powder
 oryzalin (104201)
001471-00096 001471-00102

&101.5012 1.5 lb/gal emulsifiable concentrate
 oryzalin (104201) plus trifluralin
 (036101)
 001471-00137

&102.0012 2 lb/gal emulsifiable concentrate
 oryzalin (104201)
 001471-00105

&104.0014 4 lb/gal flowable concentrate
 oryzalin (104201)
 001471-00112 001471-00113

9999999 State Label Registrations

AL Reg. No.
001471-06080 001471-06107

CA Reg. No.
001471-06110 001471-06194

FL Reg. No.
001471-06108

GA Reg. No.
001471-06077

IN Reg. No.
001471-06104

KS Reg. No.
001471-06105

KY Reg. No.
001471-06106

MI Reg. No.
001471-06076

NC Reg. No.
001471-06253

OH Reg. No.
001471-06230

EPA Index to Pesticide Chemicals

ORYZALIN

State Label Registrations (continued)

OK Reg. No.
001471-06078

TN Reg. No.
001471-06254

VA Reg. No.
001471-06079

EPA Index to Pesticide Chemicals

ORYZALIN

Appendix A

Listing of Common Chemical Names Used on the Entry

<u>Chemical Code</u>	<u>Common Name (source)</u>	<u>EPA Acceptable Common/Chemical Name</u>
013803	MSMA	monosodium acid methanearsonate
030702	naptalam	N-1-naphthylphthalamic acid

EPA Index to Pesticide Chemicals

ORYZALIN

Appendix B

Listing by Site/Pest and Site/Form/Reg. No.

BROADLEAF WEEDS CONTROLLED:

PBFDCBC	Annual sowthistle
PBKAIAA	Bittercress
PBKAFBF	Black mustard
PEWAIBE	Black nightshade
PADABBA	Carpetweed
PAZAAAC	Chickweed
PAMAIBA	Climbing milkweed
PARABBB	Coast fiddleneck
PAZA0BB	Common chickweed
PBFCX BK	Common groundsel
PBDAEBA	Common lambsquarters
PDAAHBB	Common mallow
PEDADBA	Common purslane
PBFAEBA	Common ragweed
PDPABBA	Creeping woodsorrel
PEMAEBB	Florida pusley
PBFAEBE	Giant ragweed
PCOAFBA	Henbit
PBFAVBA	Horseweed
PEAAGBP	Ladysthumb
PBDAEAB	Lambsquarters
PBKBDDB	London rocket
PEMAEAA	Mexican clover
PBGAAAB	Morningglory
PEAAGBO	Pennsylvania smartweed
PAAAABI	Pigweed
PBFCEBF	Prickly lettuce
PDAAJBF	Prickly sida
PEAAGBD	Prostrate knotweed
PAFACBC	Prostrate pigweed
PBVAGBQ	Prostrate spurge
PFMAFBB	Puncturevine
PAAAABP	Purslane
PEDABBA	Redmaids rockpurslane
PAFACBI	Redroot pigweed
PBZABBB	Redstem filaree
PEDABAA	Rockpurslane
PAFACAB	Rough pigweed
PBKAHBA	Shepherdspurse
PEAAGAD	Smartweed
PAFACBE	Smooth pigweed
PAFACBJ	Spiny amaranth
PBVAGBK	Spotted spurge
PAFACBA	Tumble pigweed
PDAABBB	Velvetleaf
PBZABBC	Whitestem filaree
PBKAFBE	Wild mustard

EPA Index to Pesticide Chemicals

ORYZALIN

Appendix B

Listing by Site/Pest and Site/Form/Reg. No. (continued)

GRASSES AND OTHER MONOCOTS CONTROLLED:

PCACKBA	Annual bluegrass
PCABHBB	Barnyardgrass
PCACEBE	Browntop panicum
PCAAUBA	Buffalograss
PCABFAA	Crabgrass
PCABCBA	Crowfootgrass
PCABLAA	Cupgrass
PCACEBD	Fall panicum
PCAAWBB	Field sandbur
PCACUAA	Foxtail
PCACUBA	Giant foxtail
PCABIBA	Goosegrass
PCACUBF	Green foxtail
PCABZBA	Italian ryegrass
PCACWBG	Johnsongrass (seedling)
PCABHBA	Junglerice
PCABFBF	Large crabgrass
PCABSBF	Little barley
PCABKBE	Mexican lovegrass
PCABKBK	Orcutt lovegrass
PCABYBB	Red sprangletop
PCACCBA	Rice
PCACUAC	Robust foxtail
PCAARAA	Signalgrass
PCABFBD	Smooth crabgrass
PCABLBA	Southwestern cupgrass
PCACEBL	Texas panicum
PCADFBA	Wheat (volunteer)
PCAAOBB	Wild oat
PAAAABC	Wiregrass
PCACEBC	Witchgrass
PCACUBD	Yellow foxtail

TERRESTRIAL FOOD CROP

(Agricultural Crops)

/03001AA	<u>Almond</u>
	Pests (see above)
	(75% WP)
	001471-00096
	(2 lb/gal EC)
	001471-00105

EPA Index to Pesticide Chemicals

ORYZALIN

Appendix B

Listing by Site/Pest and Site/Form/Reg. No. (continued)

Almond (continued)

(4 lb/gal FlC)
001471-00112

/04001AA

Apple

Pests (see above)
(75% WP)
001471-00096

(2 lb/gal EC)
001471-00105

(4 lb/gal FlC)
001471-00112

/04001DA

Apple (nursery stock)

Pests (see above)
(75% WP)
001471-00102

(4 lb/gal FlC)
001471-00113

/05001AA

Apricot

Pests (see above)
(75% WP)
001471-00096

(4 lb/gal FlC)
001471-00112

/06001AA

Avocado

Pests (see above)
(75% WP)
001471-00096

(4 lb/gal FlC)
001471-00112

/04003DA

Bartlett Pear (nursery stock)

Pests (see above)
(75% WP)
001471-00102

(4 lb/gal FlC)
001471-00113

EPA Index to Pesticide Chemicals

ORYZALIN

Appendix B

Listing by Site/Pest and Site/Form/Reg. No. (continued)

/01002AA Blackberry
 Pests (see above)
 (75% WP)
 001471-00096

 (4 lb/gal FlC)
 001471-00112

/01009AA Blueberry
 Pests (see above)
 (75% WP)
 001471-00096

 (4 lb/gal FlC)
 001471-00112

/01003AA Boysenberry
 Pests (see above)
 (4 lb/gal FlC)
 001471-00112

/05002DA Cherry (nursery stock)
 Pests (see above)
 (75% WP)
 001471-00102

 (4 lb/gal FlC)
 001471-00113

/05002AA Cherry (Sour, Sweet)
 Pests (see above)
 (75% WP)
 001471-00096

 (2 lb/gal EC)
 001471-00105

 (4 lb/gal FlC)
 001471-00112

/28007AA Cotton
 Pests (see above)
 (75% WP)
 001471-00096

 (4 lb/gal FlC)
 001471-00112

EPA Index to Pesticide Chemicals

ORYZALIN

Appendix B

Listing by Site/Pest and Site/Form/Reg. No. (continued)

/01011AA Currant
 Pests (see above)
 (4 lb/gal F1C)
 001471-00112

/01004AA Dewberry
 Pests (see above)
 (75% WP)
 001471-00096

 (4 lb/gal F1C)
 001471-00112

/01012AA Elderberry
 Pests (see above)
 (4 lb/gal F1C)
 001471-00112

/03009AA English Walnut
 Pests (see above)
 (75% WP)
 001471-00096

 (2 lb/gal EC)
 001471-00105

 (4 lb/gal F1C)
 001471-00112

/06005AA Fig
 Pests (see above)
 (75% WP)
 001471-00096

 (4 lb/gal F1C)
 001471-00112

/03005AA Filbert
 Pests (see above)
 (75% WP)
 001471-00096

 (4 lb/gal F1C)
 001471-00112

/01013AA Gooseberry
 Pests (see above)
 (4 lb/gal F1C)
 001471-00112

EPA Index to Pesticide Chemicals

ORYZALIN

Appendix B

Listing by Site/Pest and Site/Form/Reg. No. (continued)

/01014AA Grapes
 Pests (see above)
 (75% WP)
 001471-00096

 (2 lb/gal EC)
 001471-00105

 (4 lb/gal FlC)
 001471-00112

/02002AA Grapefruit
 Pests (see above)
 (75% WP)
 001471-00096

 (4 lb/gal FlC)
 001471-00112

/06018AA Kiwi Fruit
 Pests (see above)
 (75% WP)
 001471-00096

 (4 lb/gal FlC)
 001471-00112

/02004AA Lemon
 Pests (see above)
 (75% WP)
 001471-00096

 (4 lb/gal FlC)
 001471-00112

/01005AA Loganberry
 Pests (see above)
 (4 lb/gal FlC)
 001471-00112

/03007AA Macadamia Nut
 Pests (see above)
 (4 lb/gal FlC)
 001471-00112

/28012AA Mint (Peppermint, Spearmint)
 Pests (see above)
 (75% WP)
 001471-00096

EPA Index to Pesticide Chemicals

ORYZALIN

Appendix B

Listing by Site/Pest and Site/Form/Reg. No. (continued)

Mint (Peppermint, Spearmint) (continued)

(4 lb/gal FlC)
001471-00112

/05003AA Nectarine
Pests (see above)
(75% WP)
001471-00096

(4 lb/gal FlC)
001471-00112

/06009AA Olive
Pests (see above)
(75% WP)
001471-00096

(4 lb/gal FlC)
001471-00112

/02006AA Orange
Pests (see above)
(75% WP)
001471-00096

(4 lb/gal FlC)
001471-00112

/05004AA Peach
Pests (see above)
(75% WP)
001471-00096

(2 lb/gal EC)
001471-00105

(4 lb/gal FlC)
001471-00112

/04003AA Pear
Pests (see above)
(75% WP)
001471-00096

(2 lb/gal EC)
001471-00105

EPA Index to Pesticide Chemicals

ORYZALIN

Appendix B

Listing by Site/Pest and Site/Form/Reg. No. (continued)

Pear (continued)

(4 lb/gal F1C)
001471-00112

/28016AA Peas (English, Green)
Pests (see above)
(4 lb/gal F1C)
001471-00112

/03008AA Pecan
Pests (see above)
(75% WP)
001471-00096

(4 lb/gal F1C)
001471-00112

/03011AA Pistachio
Pests (see above)
(75% WP)
001471-00096

(2 lb/gal EC)
001471-00105

(4 lb/gal F1C)
001471-00112

/05005AA Plum
Pests (see above)
(75% WP)
001471-00096

(2 lb/gal EC)
001471-00105

(4 lb/gal F1C)
001471-00112

/06015AA Pomegranate
Pests (see above)
(75% WP)
001471-00096

(4 lb/gal F1C)
001471-00112

EPA Index to Pesticide Chemicals

ORYZALIN

Appendix B

Listing by Site/Pest and Site/Form/Reg. No. (continued)

/14013AA Potato (White)
 Pests (see above)
 (75% WP)
 001471-00096

 (4 lb/gal FlC)
 001471-00112

/05006AA Prune
 Pests (see above)
 (75% WP)
 001471-00096

 (2 lb/gal EC)
 001471-00105

 (4 lb/gal FlC)
 001471-00112

/01006AA Raspberry
 Pests (see above)
 (75% WP)
 001471-00096

 (4 lb/gal FlC)
 001471-00112

/28023AA Soybeans
 Pests (see above)
 (75% WP)
 001471-00096

 (1.5 lb/gal EC)
 001471-00137

 (2 lb/gal EC)
 001471-00105

 (4 lb/gal FlC)
 001471-00112

EPA Index to Pesticide Chemicals

ORYZALIN

Appendix B

Listing by Site/Pest and Site/Form/Reg. No. (continued)

TERRESTRIAL NON-FOOD CROP

(Agricultural Crops)

/26005AA Tobacco, Air Cured (Burley, Maryland, Dark)
 Pests (see above)
 (4 lb/gal FlC)
 001471-00112

/26006AA Tobacco, Flue Cured
 Pests (see above)
 (4 lb/gal FlC)
 001471-00112

GREENHOUSE NON-FOOD CROP

(Ornamental Plants and Forest Trees)

/40005CA Greenhouse Benches
 Pests (see above)
 (75% WP)
 001471-00102

(4 lb/gal FlC)
001471-00113

TERRESTRIAL NON-FOOD CROP

(Ornamental Plants and Forest Trees)

/31303AA African Trailing Daisy
 Pests (see above)
 (75% WP)
 001471-00102

(4 lb/gal FlC)
001471-00113

/34427AA Akeake
 Pests (see above)
 (75% WP)
 001471-00102

(4 lb/gal FlC)
001471-00113

EPA Index to Pesticide Chemicals

ORYZALIN

Appendix B

Listing by Site/Pest and Site/Form/Reg. No. (continued)

/34148AA Algerian Ivy
 Pests (see above)
 (75% WP)
 001471-00102

 (4 lb/gal F1C)
 001471-00113

/35288AA American Holly (Howard)
 Pests (see above)
 (75% WP)
 001471-00102

 (4 lb/gal F1C)
 001471-00113

/35288DA American Holly (Howard) (nursery stock)
 Pests (see above)
 (75% WP)
 001471-00102

 (4 lb/gal F1C)
 001471-00113

/34487AA Amur Privet
 Pests (see above)
 (75% WP)
 001471-00102

 (4 lb/gal F1C)
 001471-00113

/34487DA Amur Privet (nursery stock)
 Pests (see above)
 (75% WP)
 001471-00102

 (4 lb/gal F1C)
 001471-00113

/35315AA Andorra Juniper
 Pests (see above)
 (75% WP)
 001471-00102

 (4 lb/gal F1C)
 001471-00113

EPA Index to Pesticide Chemicals

ORYZALIN

Appendix B

Listing by Site/Pest and Site/Form/Reg. No. (continued)

/34543AA Argentine Trumpetvine
 Pests (see above)
 (75% WP)
 001471-00102

 (4 lb/gal FlC)
 001471-00113

/34543DA Argentine Trumpetvine (nursery stock)
 Pests (see above)
 (75% WP)
 001471-00102

 (4 lb/gal FlC)
 001471-00113

/34297AA Azalea (Gable Hybrids)
 Pests (see above)
 (75% WP)
 001471-00102

 (4 lb/gal FlC)
 001471-00113

/34297DA Azalea (Gable Hybrids) (nursery stock)
 Pests (see above)
 (75% WP)
 001471-00102

 (4 lb/gal FlC)
 001471-00113

/34545AA Azalea (Louisa)
 Pests (see above)
 (75% WP)
 001471-00102

 (4 lb/gal FlC)
 001471-00113

/34545DA Azalea (Louisa) (nursery stock)
 Pests (see above)
 (75% WP)
 001471-00102

 (4 lb/gal FlC)
 001471-00113

EPA Index to Pesticide Chemicals

ORYZALIN

Appendix B

Listing by Site/Pest and Site/Form/Reg. No. (continued)

/31034AA Begonia
 Pests (see above)
 (75% WP)
 001471-00102

 (4 lb/gal FlC)
 001471-00113

/33086AA Big Blue Lilyturf (Ground Cover)
 Pests (see above)
 (75% WP)
 001471-00102

 (4 lb/gal FlC)
 001471-00113

/33086DA Big Blue Lilyturf (Ground Cover) (nursery stock)
 Pests (see above)
 (75% WP)
 001471-00102

 (4 lb/gal FlC)
 001471-00113

/34451AA Bigleaf Wintercreeper
 Pests (see above)
 (75% WP)
 001471-00102

 (4 lb/gal FlC)
 001471-00113

/34451DA Bigleaf Wintercreeper (nursery stock)
 Pests (see above)
 (75% WP)
 001471-00102

 (4 lb/gal FlC)
 001471-00113

/31038AA Bird-of-Paradise
 Pests (see above)
 (75% WP)
 001471-00102

 (4 lb/gal FlC)
 001471-00113

EPA Index to Pesticide Chemicals

ORYZALIN

Appendix B

Listing by Site/Pest and Site/Form/Reg. No. (continued)

/35033AA Blue Spruce
 Pests (see above)
 (75% WP)
 001471-00102

 (4 lb/gal FlC)
 001471-00113

/35033DA Blue Spruce (nursery stock)
 Pests (see above)
 (75% WP)
 001471-00102

 (4 lb/gal FlC)
 001471-00113

/34346AA Border Forsythia
 Pests (see above)
 (75% WP)
 001471-00102

 (4 lb/gal FlC)
 001471-00113

/34031AA Boxwood
 Pests (see above)
 (75% WP)
 001471-00102

 (4 lb/gal FlC)
 001471-00113

/34031DA Boxwood (nursery stock)
 Pests (see above)
 (75% WP)
 001471-00102

 (4 lb/gal FlC)
 001471-00113

/34421AA Bright Bead Cotoneaster
 Pests (see above)
 (75% WP)
 001471-00102

 (4 lb/gal FlC)
 001471-00113

EPA Index to Pesticide Chemicals

ORYZALIN

Appendix B

Listing by Site/Pest and Site/Form/Reg. No. (continued)

/35378AA Brush Cherry
 Pests (see above)
 (75% WP)
 001471-00102

 (4 lb/gal FlC)
 001471-00113

/35378DA Brush Cherry (nursery stock)
 Pests (see above)
 (75% WP)
 001471-00102

 (4 lb/gal FlC)
 001471-00113

/35386AA California-Laurel
 Pests (see above)
 (75% WP)
 001471-00102

 (4 lb/gal FlC)
 001471-00113

/35385AA Canary Pine
 Pests (see above)
 (75% WP)
 001471-00102

 (4 lb/gal FlC)
 001471-00113

/35385DA Canary Pine (nursery stock)
 Pests (see above)
 (75% WP)
 001471-00102

 (4 lb/gal FlC)
 001471-00113

/34157AA Cape-Jasmine
 Pests (see above)
 (75% WP)
 001471-00102

 (4 lb/gal FlC)
 001471-00113

EPA Index to Pesticide Chemicals

ORYZALIN

Appendix B

Listing by Site/Pest and Site/Form/Reg. No. (continued)

/34157DA Cape-Jasmine (nursery stock)
 Pests (see above)
 (75% WP)
 001471-00102

(4 lb/gal FlC)
001471-00113

/35384AA Carolina Cherry-Laurel
 Pests (see above)
 (75% WP)
 001471-00102

(4 lb/gal FlC)
001471-00113

/34158AA Ceanothus
 Pests (see above)
 (75% WP)
 001471-00102

(4 lb/gal FlC)
001471-00113

/34158DA Ceanothus (nursery stock)
 Pests (see above)
 (75% WP)
 001471-00102

(4 lb/gal FlC)
001471-00113

/34040AA Cherry Laurel
 Pests (see above)
 (75% WP)
 001471-00102

(4 lb/gal FlC)
001471-00113

/34417AA Chinese Firethorn
 Pests (see above)
 (75% WP)
 001471-00102

(4 lb/gal FlC)
001471-00113

EPA Index to Pesticide Chemicals

ORYZALIN

Appendix B

Listing by Site/Pest and Site/Form/Reg. No. (continued)

/34417DA Chinese Firethorn (nursery stock)
 Pests (see above)
 (75% WP)
 001471-00102

 (4 lb/gal F1C)
 001471-00113

/34160AA Chinese Hibiscus
 Pests (see above)
 (75% WP)
 001471-00102

 (4 lb/gal F1C)
 001471-00113

/34161AA Chinese Holly
 Pests (see above)
 (75% WP)
 001471-00102

 (4 lb/gal F1C)
 001471-00113

/34161DA Chinese Holly (nursery stock)
 Pests (see above)
 (75% WP)
 001471-00102

 (4 lb/gal F1C)
 001471-00113

/35155AA Chinese Juniper
 Pests (see above)
 (75% WP)
 001471-00102

 (4 lb/gal F1C)
 001471-00113

/35155DA Chinese Juniper (nursery stock)
 Pests (see above)
 (75% WP)
 001471-00102

 (4 lb/gal F1C)
 001471-00113

EPA Index to Pesticide Chemicals

ORYZALIN

Appendix B

Listing by Site/Pest and Site/Form/Reg. No. (continued)

/34419AA	<u>Chinese Star-Jasmine</u> Pests (see above) (75% WP) 001471-00102 (4 lb/gal FIC) 001471-00113
/34486AA	<u>Coast Leucothoe</u> Pests (see above) (75% WP) 001471-00102 (4 lb/gal FIC) 001471-00113
/34486DA	<u>Coast Leucothoe (nursery stock)</u> Pests (see above) (75% WP) 001471-00102 (4 lb/gal FIC) 001471-00113
/31493AA	<u>Common Geranium</u> Pests (see above) (75% WP) 001471-00102 (4 lb/gal FIC) 001471-00113
/31496AA	<u>Common Zinnia</u> Pests (see above) (75% WP) 001471-00102 (4 lb/gal FIC) 001471-00113
/34305AA	<u>Convex Leaf Holly</u> Pests (see above) (75% WP) 001471-00102 (4 lb/gal FIC) 001471-00113

EPA Index to Pesticide Chemicals

ORYZALIN

Appendix B

Listing by Site/Pest and Site/Form/Reg. No. (continued)

/34305DA Convex Leaf Holly (nursery stock)
 Pests (see above)
 (75% WP)
 001471-00102

 (4 lb/gal FlC)
 001471-00113

/34560AA Cotoneaster Parneyi
 Pests (see above)
 (75% WP)
 001471-00102

 (4 lb/gal FlC)
 001471-00113

/34560DA Cotoneaster Parneyi (nursery stock)
 Pests (see above)
 (75% WP)
 001471-00102

 (4 lb/gal FlC)
 001471-00113

/34244AA Cranberry Cotoneaster
 Pests (see above)
 (75% WP)
 001471-00102

 (4 lb/gal FlC)
 001471-00113

/34244DA Cranberry Cotoneaster (nursery stock)
 Pests (see above)
 (75% WP)
 001471-00102

 (4 lb/gal FlC)
 001471-00113

/34046AA Crape Myrtle
 Pests (see above)
 (75% WP)
 001471-00102

 (4 lb/gal FlC)
 001471-00113

EPA Index to Pesticide Chemicals

ORYZALIN

Appendix B

Listing by Site/Pest and Site/Form/Reg. No. (continued)

/34046DA Crape Myrtle (nursery stock)
 Pests (see above)
 (75% WP)
 001471-00102

 (4 lb/gal FlC)
 001471-00113

/35160AA Creeping Juniper
 Pests (see above)
 (75% WP)
 001471-00102

 (4 lb/gal FlC)
 001471-00113

/35160DA Creeping Juniper (nursery stock)
 Pests (see above)
 (75% WP)
 001471-00102

 (4 lb/gal FlC)
 001471-00113

/35236AA Cryptomeria
 Pests (see above)
 (75% WP)
 001471-00102

 (4 lb/gal FlC)
 001471-00113

/35236DA Cryptomeria (nursery stock)
 Pests (see above)
 (75% WP)
 001471-00102

 (4 lb/gal FlC)
 001471-00113

/33130AA Dwarf Coyotebrush
 Pests (see above)
 (75% WP)
 001471-00102

 (4 lb/gal FlC)
 001471-00113

EPA Index to Pesticide Chemicals

ORYZALIN

Appendix B

Listing by Site/Pest and Site/Form/Reg. No. (continued)

/31237AA Easter Cactus
 Pests (see above)
 (75% WP)
 001471-00102

 (4 lb/gal F1C)
 001471-00113

/31237DA Easter Cactus (nursery stock)
 Pests (see above)
 (75% WP)
 001471-00102

 (4 lb/gal F1C)
 001471-00113

/35047AA Eastern Redcedar
 Pests (see above)
 (75% WP)
 001471-00102

 (4 lb/gal F1C)
 001471-00113

/35047DA Eastern Redcedar (nursery stock)
 Pests (see above)
 (75% WP)
 001471-00102

 (4 lb/gal F1C)
 001471-00113

/35048AA Eastern White Pine
 Pests (see above)
 (75% WP)
 001471-00102

 (4 lb/gal F1C)
 001471-00113

/35237AA Ellwood False Cypress
 Pests (see above)
 (75% WP)
 001471-00102

 (4 lb/gal F1C)
 001471-00113

EPA Index to Pesticide Chemicals

ORYZALIN

Appendix B

Listing by Site/Pest and Site/Form/Reg. No. (continued)

/35237DA Ellwood False Cypress (nursery stock)
 Pests (see above)
 (75% WP)
 001471-00102

 (4 lb/gal FlC)
 001471-00113

/34323AA Emerald Cushion Euonymus
 Pests (see above)
 (75% WP)
 001471-00102

 (4 lb/gal FlC)
 001471-00113

/34323DA Emerald Cushion Euonymus (nursery stock)
 Pests (see above)
 (75% WP)
 001471-00102

 (4 lb/gal FlC)
 001471-00113

/35169AA English Holly
 Pests (see above)
 (75% WP)
 001471-00102

 (4 lb/gal FlC)
 001471-00113

/34052AA English Ivy
 Pests (see above)
 (75% WP)
 001471-00102

 (4 lb/gal FlC)
 001471-00113

/34561AA Escallonia (Frades)
 Pests (see above)
 (75% WP)
 001471-00102

 (4 lb/gal FlC)
 001471-00113

EPA Index to Pesticide Chemicals

ORYZALIN

Appendix B

Listing by Site/Pest and Site/Form/Reg. No. (continued)

/34561DA Escallonia (Frades) (nursery stock)
 Pests (see above)
 (75% WP)
 001471-00102

 (4 lb/gal FlC)
 001471-00113

/35297AA Eucalyptus cinerea
 Pests (see above)
 (75% WP)
 001471-00102

 (4 lb/gal FlC)
 001471-00113

/34233AA Evergreen Euonymus
 Pests (see above)
 (75% WP)
 001471-00102

 (4 lb/gal FlC)
 001471-00113

/34233DA Evergreen Euonymus (nursery stock)
 Pests (see above)
 (75% WP)
 001471-00102

 (4 lb/gal FlC)
 001471-00113

/34172AA Fatshedera
 Pests (see above)
 (75% WP)
 001471-00102

 (4 lb/gal FlC)
 001471-00113

/34172DA Fatshedera (nursery stock)
 Pests (see above)
 (75% WP)
 001471-00102

 (4 lb/gal FlC)
 001471-00113

EPA Index to Pesticide Chemicals

ORYZALIN

Appendix B

Listing by Site/Pest and Site/Form/Reg. No. (continued)

/34056AA Fetter-Bush
 Pests (see above)
 (75% WP)
 001471-00102

 (4 lb/gal FlC)
 001471-00113

/34056DA Fetter-Bush (nursery stock)
 Pests (see above)
 (75% WP)
 001471-00102

 (4 lb/gal FlC)
 001471-00113

/34237AA Floribunda Rose
 Pests (see above)
 (75% WP)
 001471-00102

 (4 lb/gal FlC)
 001471-00113

/34237DA Floribunda Rose (nursery stock)
 Pests (see above)
 (75% WP)
 001471-00102

 (4 lb/gal FlC)
 001471-00113

/31491AA Florists' Chrysanthemum
 Pests (see above)
 (75% WP)
 001471-00102

 (4 lb/gal FlC)
 001471-00113

/34176AA Formosan Pyracantha
 Pests (see above)
 (75% WP)
 001471-00102

 (4 lb/gal FlC)
 001471-00113

EPA Index to Pesticide Chemicals

ORYZALIN

Appendix B

Listing by Site/Pest and Site/Form/Reg. No. (continued)

/34176DA Formosan Pyracantha (nursery stock)

Pests (see above)

(75% WP)

001471-00102

(4 lb/gal FlC)

001471-00113

/34518AA Fraser Photinia

Pests (see above)

(75% WP)

001471-00102

(4 lb/gal FlC)

001471-00113

/34518DA Fraser Photinia (nursery stock)

Pests (see above)

(75% WP)

001471-00102

(4 lb/gal FlC)

001471-00113

/31239AA French Marigold

Pests (see above)

(75% WP)

001471-00102

(4 lb/gal FlC)

001471-00113

/31494AA Garden Petunia

Pests (see above)

(75% WP)

001471-00102

(4 lb/gal FlC)

001471-00113

/35062AA Ginkgo

Pests (see above)

(75% WP)

001471-00102

(4 lb/gal FlC)

001471-00113

EPA Index to Pesticide Chemicals

ORYZALIN

Appendix B

Listing by Site/Pest and Site/Form/Reg. No. (continued)

/35062DA	<u>Ginkgo (nursery stock)</u> Pests (see above) (75% WP) 001471-00102 (4 lb/gal FlC) 001471-00113
/34422AA	<u>Glossy Abelia</u> Pests (see above) (75% WP) 001471-00102 (4 lb/gal FlC) 001471-00113
/34179AA	<u>Glossy Privet</u> Pests (see above) (75% WP) 001471-00102 (4 lb/gal FlC) 001471-00113
/34179DA	<u>Glossy Privet (nursery stock)</u> Pests (see above) (75% WP) 001471-00102 (4 lb/gal FlC) 001471-00113
/35063AA	<u>Golden-Rain Tree</u> Pests (see above) (75% WP) 001471-00102 (4 lb/gal FlC) 001471-00113
/33104AA	<u>Greater Periwinkle (Ground Cover)</u> Pests (see above) (75% WP) 001471-00102 (4 lb/gal FlC) 001471-00113

EPA Index to Pesticide Chemicals

ORYZALIN

Appendix B

Listing by Site/Pest and Site/Form/Reg. No. (continued)

/35403AA Greek Juniper
 Pests (see above)
 (75% WP)
 001471-00102

 (4 lb/gal FlC)
 001471-00113

/35403DA Greek Juniper (nursery stock)
 Pests (see above)
 (75% WP)
 001471-00102

 (4 lb/gal FlC)
 001471-00113

/34331AA Greek Myrtle
 Pests (see above)
 (75% WP)
 001471-00102

 (4 lb/gal FlC)
 001471-00113

/34331DA Greek Myrtle (nursery stock)
 Pests (see above)
 (75% WP)
 001471-00102

 (4 lb/gal FlC)
 001471-00113

/34313AA Hiryu Azalea (Hinodegiri)
 Pests (see above)
 (75% WP)
 001471-00102

 (4 lb/gal FlC)
 001471-00113

/34313DA Hiryu Azalea (Hinodegiri) (nursery stock)
 Pests (see above)
 (75% WP)
 001471-00102

 (4 lb/gal FlC)
 001471-00113

EPA Index to Pesticide Chemicals

ORYZALIN

Appendix B

Listing by Site/Pest and Site/Form/Reg. No. (continued)

/34071AA	<u>Holly Osmanthus</u> Pests (see above) (75% WP) 001471-00102 (4 lb/gal FlC) 001471-00113
/34238AA	<u>Hybrid Tea Roses</u> Pests (see above) (75% WP) 001471-00102 (4 lb/gal FlC) 001471-00113
/34238DA	<u>Hybrid Tea Roses (nursery stock)</u> Pests (see above) (75% WP) 001471-00102 (4 lb/gal FlC) 001471-00113
/34075AA	<u>India Hawthorn</u> Pests (see above) (75% WP) 001471-00102 (4 lb/gal FlC) 001471-00113
/34075DA	<u>India Hawthorn (nursery stock)</u> Pests (see above) (75% WP) 001471-00102 (4 lb/gal FlC) 001471-00113
/35340AA	<u>Interior Live Oak</u> Pests (see above) (75% WP) 001471-00102 (4 lb/gal FlC) 001471-00113

EPA Index to Pesticide Chemicals

ORYZALIN

Appendix B

Listing by Site/Pest and Site/Form/Reg. No. (continued)

/35340DA Interior Live Oak (nursery stock)
 Pests (see above)
 (75% WP)
 001471-00102

 (4 lb/gal F1C)
 001471-00113

/35182AA Italian Cypress
 Pests (see above)
 (75% WP)
 001471-00102

 (4 lb/gal F1C)
 001471-00113

/35182DA Italian Cypress (nursery stock)
 Pests (see above)
 (75% WP)
 001471-00102

 (4 lb/gal F1C)
 001471-00113

/34078AA Japanese Andromeda
 Pests (see above)
 (75% WP)
 001471-00102

 (4 lb/gal F1C)
 001471-00113

/34078DA Japanese Andromeda (nursery stock)
 Pests (see above)
 (75% WP)
 001471-00102

 (4 lb/gal F1C)
 001471-00113

/34079AA Japanese Barberry
 Pests (see above)
 (75% WP)
 001471-00102

 (4 lb/gal F1C)
 001471-00113

EPA Index to Pesticide Chemicals

ORYZALIN

Appendix B

Listing by Site/Pest and Site/Form/Reg. No. (continued)

/34079DA Japanese Barberry (nursery stock)
 Pests (see above)
 (75% WP)
 001471-00102

 (4 lb/gal F1C)
 001471-00113

/35185AA Japanese Black Pine
 Pests (see above)
 (75% WP)
 001471-00102

 (4 lb/gal F1C)
 001471-00113

/35185DA Japanese Black Pine (nursery stock)
 Pests (see above)
 (75% WP)
 001471-00102

 (4 lb/gal F1C)
 001471-00113

/34272AA Japanese Boxwood
 Pests (see above)
 (75% WP)
 001471-00102

 (4 lb/gal F1C)
 001471-00113

/34272DA Japanese Boxwood (nursery stock)
 Pests (see above)
 (75% WP)
 001471-00102

 (4 lb/gal F1C)
 001471-00113

/33119AA Japanese Garden Juniper (Ground Cover)
 Pests (see above)
 (75% WP)
 001471-00102

 (4 lb/gal F1C)
 001471-00113

EPA Index to Pesticide Chemicals

ORYZALIN

Appendix B

Listing by Site/Pest and Site/Form/Reg. No. (continued)

/33119DA	<u>Japanese Garden Juniper (Ground Cover) (nursery stock)</u> Pests (see above) (75% WP) 001471-00102 (4 lb/gal FlC) 001471-00113
/34307AA	<u>Japanese Honeysuckle</u> Pests (see above) (75% WP) 001471-00102 (4 lb/gal FlC) 001471-00113
/34310AA	<u>Japanese Pittosporum</u> Pests (see above) (75% WP) 001471-00102 (4 lb/gal FlC) 001471-00113
/34310DA	<u>Japanese Pittosporum (nursery stock)</u> Pests (see above) (75% WP) 001471-00102 (4 lb/gal FlC) 001471-00113
/34188AA	<u>Japanese Privet</u> Pests (see above) (75% WP) 001471-00102 (4 lb/gal FlC) 001471-00113
/34188DA	<u>Japanese Privet (nursery stock)</u> Pests (see above) (75% WP) 001471-00102 (4 lb/gal FlC) 001471-00113

EPA Index to Pesticide Chemicals

ORYZALIN

Appendix B

Listing by Site/Pest and Site/Form/Reg. No. (continued)

/35072AA Japanese Yew
 Pests (see above)
 (75% WP)
 001471-00102

 (4 lb/gal FlC)
 001471-00113

/33107AA Largeleaf Iceplant (ground cover)
 Pests (see above)
 (75% WP)
 001471-00102

 (4 lb/gal FlC)
 001471-00113

/34285AA Laurustinus
 Pests (see above)
 (75% WP)
 001471-00102

 (4 lb/gal FlC)
 001471-00113

/34285DA Laurustinus (nursery stock)
 Pests (see above)
 (75% WP)
 001471-00102

 (4 lb/gal FlC)
 001471-00113

/34414AA Lemon Bottlebrush
 Pests (see above)
 (75% WP)
 001471-00102

 (4 lb/gal FlC)
 001471-00113

/34414DA Lemon Bottlebrush (nursery stock)
 Pests (see above)
 (75% WP)
 001471-00102

 (4 lb/gal FlC)
 001471-00113

EPA Index to Pesticide Chemicals

ORYZALIN

Appendix B

Listing by Site/Pest and Site/Form/Reg. No. (continued)

/33103AA Lesser Periwinkle (Ground Cover)
 Pests (see above)
 (75% WP)
 001471-00102

 (4 lb/gal FlC)
 001471-00113

/34089AA Lilac
 Pests (see above)
 (75% WP)
 001471-00102

 (4 lb/gal FlC)
 001471-00113

/34089DA Lilac (nursery stock)
 Pests (see above)
 (75% WP)
 001471-00102

 (4 lb/gal FlC)
 001471-00113

/31411AA Lily-of-the-Nile
 Pests (see above)
 (75% WP)
 001471-00102

 (4 lb/gal FlC)
 001471-00113

/31411DA Lily-of-the-Nile (nursery stock)
 Pests (see above)
 (75% WP)
 001471-00102

 (4 lb/gal FlC)
 001471-00113

/34504AA Lowfast Bearberry Cotoneaster
 Pests (see above)
 (75% WP)
 001471-00102

 (4 lb/gal FlC)
 001471-00113

EPA Index to Pesticide Chemicals

ORYZALIN

Appendix B

Listing by Site/Pest and Site/Form/Reg. No. (continued)

/34504DA Lowfast Bearberry Cotoneaster (nursery stock)
 Pests (see above)
 (75% WP)
 001471-00102

 (4 lb/gal F1C)
 001471-00113

/34091AA Manzanita
 Pests (see above)
 (75% WP)
 001471-00102

 (4 lb/gal F1C)
 001471-00113

/34097AA Mountain-Laurel
 Pests (see above)
 (75% WP)
 001471-00102

 (4 lb/gal F1C)
 001471-00113

/35289AA Myoporum
 Pests (see above)
 (75% WP)
 001471-00102

 (4 lb/gal F1C)
 001471-00113

/34100AA Nandina
 Pests (see above)
 (75% WP)
 001471-00102

 (4 lb/gal F1C)
 001471-00113

/34100DA Nandina (nursery stock)
 Pests (see above)
 (75% WP)
 001471-00102

 (4 lb/gal F1C)
 001471-00113

EPA Index to Pesticide Chemicals

ORYZALIN

Appendix B

Listing by Site/Pest and Site/Form/Reg. No. (continued)

/35328AA Narrow Leaved Black Peppermint
 Pests (see above)
 (75% WP)
 001471-00102

 (4 lb/gal F1C)
 001471-00113

/35328DA Narrow Leaved Black Peppermint (nursery stock)
 Pests (see above)
 (75% WP)
 001471-00102

 (4 lb/gal F1C)
 001471-00113

/34562AA Old-fashioned Weigela
 Pests (see above)
 (75% WP)
 001471-00102

 (4 lb/gal F1C)
 001471-00113

/34102AA Oleander
 Pests (see above)
 (75% WP)
 001471-00102

 (4 lb/gal F1C)
 001471-00113

/34102DA Oleander (nursery stock)
 Pests (see above)
 (75% WP)
 001471-00102

 (4 lb/gal F1C)
 001471-00113

/34103AA Oregongrape
 Pests (see above)
 (75% WP)
 001471-00102

 (4 lb/gal F1C)
 001471-00113

EPA Index to Pesticide Chemicals

ORYZALIN

Appendix B

Listing by Site/Pest and Site/Form/Reg. No. (continued)

/35254AA Oriental Arborvitae
 Pests (see above)
 (75% WP)
 001471-00102

 (4 lb/gal FlC)
 001471-00113

/35254DA Oriental Arborvitae (nursery stock)
 Pests (see above)
 (75% WP)
 001471-00102

 (4 lb/gal FlC)
 001471-00113

/31149AA Pansies
 Pests (see above)
 (75% WP)
 001471-00102

 (4 lb/gal FlC)
 001471-00113

/33117AA Purpleleaf Wintercreeper
 Pests (see above)
 (75% WP)
 001471-00102

 (4 lb/gal FlC)
 001471-00113

/33117DA Purpleleaf Wintercreeper (nursery stock)
 Pests (see above)
 (75% WP)
 001471-00102

 (4 lb/gal FlC)
 001471-00113

/34353AA Pyrenees Cotoneaster
 Pests (see above)
 (75% WP)
 001471-00102

 (4 lb/gal FlC)
 001471-00113

EPA Index to Pesticide Chemicals

ORYZALIN

Appendix B

Listing by Site/Pest and Site/Form/Reg. No. (continued)

/35380AA Red Ironbark Eucalyptus
 Pests (see above)
 (75% WP)
 001471-00102

 (4 lb/gal FlC)
 001471-00113

/34492AA Rhododendron (PJM Hybrids)
 Pests (see above)
 (75% WP)
 001471-00102

 (4 lb/gal FlC)
 001471-00113

/34492DA Rhododendron (PJM Hybrids) (nursery stock)
 Pests (see above)
 (75% WP)
 001471-00102

 (4 lb/gal FlC)
 001471-00113

/34555AA Rhododendron (Ponticum Hybrids)
 Pests (see above)
 (75% WP)
 001471-00102

 (4 lb/gal FlC)
 001471-00113

/34555DA Rhododendron (Ponticum Hybrids) (nursery stock)
 Pests (see above)
 (75% WP)
 001471-00102

 (4 lb/gal FlC)
 001471-00113

/34493AA Rhododendron (Rosebud)
 Pests (see above)
 (75% WP)
 001471-00102

 (4 lb/gal FlC)
 001471-00113

EPA Index to Pesticide Chemicals

ORYZALIN

Appendix B

Listing by Site/Pest and Site/Form/Reg. No. (continued)

/34493DA Rhododendron (Rosebud) (nursery stock)
 Pests (see above)
 (75% WP)
 001471-00102

 (4 lb/gal FlC)
 001471-00113

/34205AA Rockspray Cotoneaster
 Pests (see above)
 (75% WP)
 001471-00102

 (4 lb/gal FlC)
 001471-00113

/34205DA Rockspray Cotoneaster (nursery stock)
 Pests (see above)
 (75% WP)
 001471-00102

 (4 lb/gal FlC)
 001471-00113

/35354AA Rocky Mountain Juniper
 Pests (see above)
 (75% WP)
 001471-00102

 (4 lb/gal FlC)
 001471-00113

/35354DA Rocky Mountain Juniper (nursery stock)
 Pests (see above)
 (75% WP)
 001471-00102

 (4 lb/gal FlC)
 001471-00113

/35491AA Rocky Mountain Sugar Maple
 Pests (see above)
 (75% WP)
 001471-00102

 (4 lb/gal FlC)
 001471-00113

EPA Index to Pesticide Chemicals

ORYZALIN

Appendix B

Listing by Site/Pest and Site/Form/Reg. No. (continued)

/35491DA Rocky Mountain Sugar Maple (nursery stock)
 Pests (see above)
 (75% WP)
 001471-00102

 (4 lb/gal FlC)
 001471-00113

/34120AA Rose
 Pests (see above)
 (75% WP)
 001471-00102

 (4 lb/gal FlC)
 001471-00113

/34208AA Sakaki
 Pests (see above)
 (75% WP)
 001471-00102

 (4 lb/gal FlC)
 001471-00113

/34208DA Sakaki (nursery stock)
 Pests (see above)
 (75% WP)
 001471-00102

 (4 lb/gal FlC)
 001471-00113

/34122AA Sandankwa Viburnum
 Pests (see above)
 (75% WP)
 001471-00102

 (4 lb/gal FlC)
 001471-00113

/35205AA Savin Juniper
 Pests (see above)
 (75% WP)
 001471-00102

 (4 lb/gal FlC)
 001471-00113

EPA Index to Pesticide Chemicals

ORYZALIN

Appendix B

Listing by Site/Pest and Site/Form/Reg. No. (continued)

/35205DA Savin Juniper (nursery stock)
 Pests (see above)
 (75% WP)
 001471-00102

 (4 lb/gal FlC)
 001471-00113

/34295AA Scarlet Firethorn
 Pests (see above)
 (75% WP)
 001471-00102

 (4 lb/gal FlC)
 001471-00113

/34295DA Scarlet Firethorn (nursery stock)
 Pests (see above)
 (75% WP)
 001471-00102

 (4 lb/gal FlC)
 001471-00113

/34420AA Shiny Xylosoma
 Pests (see above)
 (75% WP)
 001471-00102

 (4 lb/gal FlC)
 001471-00113

/35209AA Shore Juniper
 Pests (see above)
 (75% WP)
 001471-00102

 (4 lb/gal FlC)
 001471-00113

/35209DA Shore Juniper (nursery stock)
 Pests (see above)
 (75% WP)
 001471-00102

 (4 lb/gal FlC)
 001471-00113

EPA Index to Pesticide Chemicals

ORYZALIN

Appendix B

Listing by Site/Pest and Site/Form/Reg. No. (continued)

/31420AA	<u>Shortleaf Stonecrop</u> Pests (see above) (75% WP) 001471-00102 (4 lb/gal F1C) 001471-00113
/31408AA	<u>Shrimp Plant</u> Pests (see above) (75% WP) 001471-00102 (4 lb/gal F1C) 001471-00113
/31408DA	<u>Shrimp Plant (nursery stock)</u> Pests (see above) (75% WP) 001471-00102 (4 lb/gal F1C) 001471-00113
/35388AA	<u>Soap Tree</u> Pests (see above) (75% WP) 001471-00102 (4 lb/gal F1C) 001471-00113
/35388DA	<u>Soap Tree (nursery stock)</u> Pests (see above) (75% WP) 001471-00102 (4 lb/gal F1C) 001471-00113
/35216AA	<u>Southern Magnolia</u> Pests (see above) (75% WP) 001471-00102 (4 lb/gal F1C) 001471-00113

EPA Index to Pesticide Chemicals

ORYZALIN

Appendix B

Listing by Site/Pest and Site/Form/Reg. No. (continued)

/33126AA	<u>St. John's-Wort (Ground Cover)</u> Pests (see above) (75% WP) 001471-00102 (4 lb/gal FlC) 001471-00113
/35118AA	<u>Sweetgum</u> Pests (see above) (75% WP) 001471-00102 (4 lb/gal FlC) 001471-00113
/35118DA	<u>Sweetgum (nursery stock)</u> Pests (see above) (75% WP) 001471-00102 (4 lb/gal FlC) 001471-00113
/35393AA	<u>Swiss Mountain Pine</u> Pests (see above) (75% WP) 001471-00102 (4 lb/gal FlC) 001471-00113
/35393DA	<u>Swiss Mountain Pine (nursery stock)</u> Pests (see above) (75% WP) 001471-00102 (4 lb/gal FlC) 001471-00113
/31455AA	<u>Treasure Flower</u> Pests (see above) (75% WP) 001471-00102 (4 lb/gal FlC) 001471-00113

EPA Index to Pesticide Chemicals

ORYZALIN

Appendix B

Listing by Site/Pest and Site/Form/Reg. No. (continued)

/34309AA	<u>Vicary Golden Privet</u> Pests (see above) (75% WP) 001471-00102 (4 lb/gal FlC) 001471-00113
/34309DA	<u>Vicary Golden Privet (nursery stock)</u> Pests (see above) (75% WP) 001471-00102 (4 lb/gal FlC) 001471-00113
/35123AA	<u>Western Redcedar</u> Pests (see above) (75% WP) 001471-00102 (4 lb/gal FlC) 001471-00113
/35123DA	<u>Western Redcedar (nursery stock)</u> Pests (see above) (75% WP) 001471-00102 (4 lb/gal FlC) 001471-00113
/31996AA	<u>White Iceplant</u> Pests (see above) (75% WP) 001471-00102 (4 lb/gal FlC) 001471-00113
/35137AA	<u>Wilson Chinese Juniper</u> Pests (see above) (75% WP) 001471-00102 (4 lb/gal FlC) 001471-00113

EPA Index to Pesticide Chemicals

ORYZALIN

Appendix B

Listing by Site/Pest and Site/Form/Reg. No. (continued)

/35137DA Wilson Chinese Juniper (nursery stock)
Pests (see above)
(75% WP)
001471-00102

(4 lb/gal FlC)
001471-00113

/34232AA Winged Euonymus
Pests (see above)
(75% WP)
001471-00102

(4 lb/gal FlC)
001471-00113

/34388AA Yaupon
Pests (see above)
(75% WP)
001471-00102

(4 lb/gal FlC)
001471-00113

/34388DA Yaupon (nursery stock)
Pests (see above)
(75% WP)
001471-00102

(4 lb/gal FlC)
001471-00113

/35253AA Yew Podocarpus
Pests (see above)
(75% WP)
001471-00102

(4 lb/gal FlC)
001471-00113

/35253DA Yew Podocarpus (nursery stock)
Pests (see above)
(75% WP)
001471-00102

(4 lb/gal FlC)
001471-00113

EPA Index to Pesticide Chemicals

ORYZALIN

Appendix B

Listing by Site/Pest and Site/Form/Reg. No. (continued)

/31492AA Zanzibar Balsam
 Pests (see above)
 (75% WP)
 001471-00102

 (4 lb/gal FlC)
 001471-00113

(Noncrop, Wide Area, and General Outdoor Treatments)

/670040A Highway Rights-of-Way
 Pests (see above)
 (75% WP)
 001471-00102

 (4 lb/gal FlC)
 001471-00113

/670060A Utility Rights-of-Way
 Pests (see above)
 (75% WP)
 001471-00102

 (4 lb/gal FlC)
 001471-00113

FORESTRY

/30153AA Alpine Fir
 Pests (see above)
 (75% WP)
 001471-00102

 (4 lb/gal FlC)
 001471-00113

/30084AA Austrian Pine
 Pests (see above)
 (75% WP)
 001471-00102

 (4 lb/gal FlC)
 001471-00113

/30128AA Balsam Fir
 Pests (see above)
 (75% WP)
 001471-00102

EPA Index to Pesticide Chemicals

ORYZALIN

Appendix B

Listing by Site/Pest and Site/Form/Reg. No. (continued)

Balsam Fir (continued)

(4 lb/gal F1C)
001471-00113

/30111AA Bishop Pine
Pests (see above)
(75% WP)
001471-00102

(4 lb/gal F1C)
001471-00113

/30107AA Black Spruce
Pests (see above)
(75% WP)
001471-00102

(4 lb/gal F1C)
001471-00113

/30141AA Blue Spruce
Pests (see above)
(75% WP)
001471-00102

(4 lb/gal F1C)
001471-00113

/30005AA Christmas Tree Plantations
Pests (see above)
(75% WP)
001471-00102

(4 lb/gal F1C)
001471-00113

/30152AA Coulter Pine
Pests (see above)
(75% WP)
001471-00102

(4 lb/gal F1C)
001471-00113

EPA Index to Pesticide Chemicals

ORYZALIN

Appendix B

Listing by Site/Pest and Site/Form/Reg. No. (continued)

/30039AA Douglas-Fir
 Pests (see above)
 (75% WP)
 001471-00102

 (4 lb/gal FlC)
 001471-00113

/30100AA Eastern White Pine
 Pests (see above)
 (75% WP)
 001471-00102

 (4 lb/gal FlC)
 001471-00113

/30093AA Englemann Spruce
 Pests (see above)
 (75% WP)
 001471-00102

 (4 lb/gal FlC)
 001471-00113

/30129AA Fraser Fir
 Pests (see above)
 (75% WP)
 001471-00102

 (4 lb/gal FlC)
 001471-00113

/30090AA Grand Fir
 Pests (see above)
 (75% WP)
 001471-00102

 (4 lb/gal FlC)
 001471-00113

/30112AA Monterey Pine
 Pests (see above)
 (75% WP)
 001471-00102

 (4 lb/gal FlC)
 001471-00113

EPA Index to Pesticide Chemicals

ORYZALIN

Appendix B

Listing by Site/Pest and Site/Form/Reg. No. (continued)

/30130AA Norway Spruce
 Pests (see above)
 (75% WP)
 001471-00102

 (4 lb/gal FlC)
 001471-00113

/30062AA Redwood
 Pests (see above)
 (75% WP)
 001471-00102

 (4 lb/gal FlC)
 001471-00113

/30113AA Scotch Pine
 Pests (see above)
 (75% WP)
 001471-00102

 (4 lb/gal FlC)
 001471-00113

/30154AA Veitch Fir
 Pests (see above)
 (75% WP)
 001471-00102

 (4 lb/gal FlC)
 001471-00113

/30092AA White Fir
 Pests (see above)
 (75% WP)
 001471-00102

 (4 lb/gal FlC)
 001471-00113

/30108AA White Spruce
 Pests (see above)
 (75% WP)
 001471-00102

 (4 lb/gal FlC)
 001471-00113

APPENDIX B
LABELING REQUIREMENTS

- B-1 - Submission of Revised Labeling
- B-2 - 40 CFR 162.10 Labeling Requirements
- B-3 - Table of Labeling Requirements
- B-4 - Physical/Chemical Hazards
Labeling Statement

SUBMISSION OF REVISED LABELING

FIFRA requires each product to be labeled with accurate, complete and sufficient instructions and precautions, reflecting the results of data concerning the product and its ingredients. Labeling requirements are set out in 40 CFR 162.10 (Appendix B-2) and are summarized for products containing this active ingredient in Appendix B-3. Applications submitted in response to this Standard must include draft labeling for Agency review.

If revised labeling information complying with this Appendix and the requirements described in Part II of the Standard, is not submitted, EPA may issue a notice of intent to cancel the registration under FIFRA sec. 6(b)(1).

- A. 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 Appendix B-3.

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 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.

<u>Size of Label on Front Panel in Square Inches</u>	<u>Signal Word Minimum Type Size All Capitals</u>	<u>"Keep Out of Reach of Children" Minimum Type Size</u>
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)(i)]

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" - For 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 -

1. Flammability statement. Precautionary statements relating to flammability of a product are required to appear on the label if it meets the criteria in Appendix B-4. 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.
2. Criteria for declaration of non-flammability. The following criteria will be used to determine if a product is non-flammable:
 - a. A "non-flammable gas" is a gas (or mixture of gases) that will not ignite when a lighted match is placed against the open cylinder valve.

- b. A "non-flammable liquid" is one having a flashpoint greater than 350°F (177°C).
- c. A "non-flammable aerosol" is one which meets the following criteria:
 - i. The flame extension is zero inches;
 - ii. There is no flashback; and
 - iii. The flashpoint of the non-volatile liquid component is greater than 350°F (177°C).
- 3. Declaration of non-flammability. Products which meet the criteria for non-flammability specified above may bear the notation "non-flammable" or "non-flammable (gas, liquid, etc.)" on the label. It may appear as a substatement to the ingredients statement, or on a back or side panel, but shall not be highlighted or emphasized (as with an inordinately large type size) in any way that may detract from precaution.
- 4. Other physical/chemical hazard statements. When chemistry data demonstrate hazards of a physical or chemical nature other than flammability, appropriate statements of hazard will be prescribed. Such statements may address hazards of explosivity, oxidizing or reducing capability, or mixing with other substances to produce toxic fumes.

Item 9A. RESTRICTED USE CLASSIFICATION - FIFRA sec. 3(d) provides for the classification of products for restricted use. Such use may be limited to certified applicators or persons under their direct supervision or may be subject to other restrictions that may be imposed by regulation. Based on its review of oryzalin, the Agency has not classified products containing this active ingredient for restricted use.

Item 9B - There is no Item 9B.

Item 9C. 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 - A reentry interval has not been established by the Agency for this chemical.

Item 10B - There is no Item 10B.

Item 10C. 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. Part II of the Standard contains the specific disposal statement for oryzalin and Appendix C sets forth the appropriate container disposal statements.

Item 10D. 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]

- B. 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 Standard and submitted for review.

Chapter 1--Environmental Protection Agency

§162.10 Labeling requirements.

(a) General--(1) Contents of the label. Every pesticide product 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 terms as 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 foreseeable conditions and period of use. If the immediate container is enclosed within a 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.

(3) 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 § 162.15, 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 indirectly implying that the pesticide or device is recommended or endorsed by 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 additional name pursuant to § 162.6(b)(4).

(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 on which it appears and shall run parallel 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 practical 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 required 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	6	6
Above 5 to 10	10	6
Above 10 to 15	12	8
Above 15 to 30	14	10
Over 30	18	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 LD₅₀ 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 LC₅₀ 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 LD₅₀ of 100 mg/kg or less, or a subacute dietary LC₅₀ 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 30°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:

(1) 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 unlikely to be overlooked under customary conditions of purchase and use, the statement "Restricted Use Pesticide" shall appear.

(B) Directly below this statement on the front panel, a summary statement of the terms of restriction imposed as a precondition to registration shall appear. 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." If, however, other regulatory restrictions are imposed, the Administrator will define the appropriate wording for the terms of restriction by regulation.

(k) Advertising. [Reserved]

[40 FR 28268, July 3, 1975; 40 FR 32329, Aug. 1, 1975; 40 FR 38571, Aug. 21, 1975, as amended at 43 FR 5786, Feb. 9, 1978]

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.

ITEM	LABEL ELEMENT	APPLICABILITY OF REQUIREMENT	PLACEMENT ON LABEL		COMMENTS
			REQUIRED	PREFERRED	
7C	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	
7D	Statement of practical treatment	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.	
7E	Referral statement	All products where precautionary labeling appears on other than front panel.	Front panel		
8	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.
8A	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.
8B	Environmental hazards	All products	None	Same as above	Environmental hazards include bee caution where applicable.

ITEM	LABEL ELEMENT	APPLICABILITY OF REQUIREMENT	PLACEMENT ON LABEL		COMMENTS
			REQUIRED	PREFERRED	
8C	Physical or chemical hazards	All pressurized products, others with flash points under 150°F	None	Same as above	
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.
9C	Misuse statement	All products	Immediately following heading of directions for use		
10A	Reentry statement	All cholinesterase inhibitors	In the directions for use	Immediately after misuse statement	
10C	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 other directions for use.
10D	Directions for use	All products	None	None	May be in metric as well as U.S. units

PHYSICAL-CHEMICAL HAZARDS

<u>Criteria</u>	<u>Required Label Statement</u>
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.

APPENDIX C
CONTAINER DISPOSAL INSTRUCTIONS

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.

APPENDIX D
FARMWORKER SAFETY LABEL REQUIREMENTS
(PR NOTICE 83-2)



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

OFFICE OF
PESTICIDES AND TOXIC SUBSTANCES

MAR 29 1983

PR NOTICE 83-2

NOTICE TO MANUFACTURERS, FORMULATORS
AND REGISTRANTS OF PESTICIDES

Attention: Persons Responsible for Federal Registrations of
Pesticides

This notice is to inform you that the labels of all outdoor agricultural use products which are applied to crops whose culture requires hand labor are required to bear the following information under the Farmworker Safety Label Improvement Program. No application for amended registration is required, provided you use the exact wording contained in this Notice. All affected products released for shipment after December 31, 1984 must be relabeled accordingly.

For the purposes of this Label Improvement Program, the terms "reentry intervals", "farmworkers", and "protective clothing" used in this notice are as defined in 40 CFR 170.2. Reentry interval means the period of time immediately following the application of a pesticide to a field when unprotected workers should not enter. Farmworker refers to any person or persons engaged in agricultural hand labor in the field. Protective clothing means, at least, a hat or other suitable head covering, a long sleeved shirt and long legged trousers or a coverall type garment (all of closely woven fabric covering the body, including the arms and legs), shoes and socks.

The term hand labor tasks, as used in this Notice, is defined as commonly recognized crop production activities such as harvesting, detasselling, thinning, weeding, topping, planting, sucker removal, summer pruning, moving irrigation equipment and other hand labor tasks performed in the field by farmworkers who will come in substantial contact with pesticide treated surfaces, such as plants or plant parts. For the purposes of this notice, mixing, loading, flagging, and equipment operation are considered to be part of the application of the pesticide and are not normally considered to be hand crop production tasks, and therefore, are

not subject to these provisions. At a minimum, the following crops have been determined to employ hand labor tasks:

Citrus Fruit	Onions	Figs
Cucurbits	Pome Fruits	Mango
Fruiting Vegetables	Stone Fruits	Olives
Leafy Vegetables	Tobacco	Pineapples
Root Crop Vegetables	Small Fruits (berries, grapes, nuts)	
	Corn (hybrid seed, sweet and pop)	

Registrants are responsible for determining whether use of their products would involve any other crop activities that meet the definition for hand labor tasks normally performed by farmworkers and are, thus, subject to this Notice.

While "scouting" for determining efficacy may result in potential exposure, it is not considered to be a commonly recognized hand labor crop production task customarily performed by farmworkers and therefore would normally be excluded from the hand labor criteria of this Notice. However, if the definition of hand labor would cover scouting for a particular use, then these provisions would apply.

I. PRODUCTS AFFECTED:

All products with outdoor agricultural uses which are applied to crops utilizing hand labor tasks will be required to bear general precautionary label language about farmworker safety (see Section II.A.) In addition, the labels of the following pesticides, either as sole active ingredients or in combination with other pesticides, must bear specific precautionary label language about reentry and farmworker safety (see Section II. A. and B.).

Ethyl Parathion	Monocrotophos	Metasystox-R
Methyl Parathion	Phosalone	Bidrin
Azinphos Methyl	Carbophenothion	Ethion
Demeton	Endrin	

The requirements set forth in this Notice do not apply to: (1) Mosquito abatement treatments and related public pest control programs; (2) Greenhouse treatments; (3) Livestock and other animal treatments; (4) Treatment of golf courses, forest uses and similar nonagricultural areas; (5) Any uses, except pesticides with systemic modes of action, for which soil incorporation is required.

The reentry intervals for the eleven pesticides listed above and EPN were established through regulation at 40 CFR 170. EPN was excluded from this label improvement action because an RPAR is currently under negotiation. Registrants will be notified separately of requirements resulting from the RPAR action.

EPA, as part of the reregistration process, is evaluating the reentry intervals and protective clothing requirements for all pesticides including the ones addressed in this label improvement program. Registrants will be advised through the Registration Standards Program if future label changes are necessary.

II. REQUIRED LABEL CHANGES:

The following statements contain either the exact wording that must appear on the affected product labels, or are explicit in indicating the type of information that must be conveyed in specific portions of the label text. See attached sample product label for proper placement of each statement listed in this Section (A and B).

A. General Worker Protection Statements:

The labels of all products covered by this notice must bear the following general precautionary statements about farmworker safety. See the sample label provided in attachment B for the proper location for these statements.

1. "Do not apply this product in such a manner as to directly or through drift expose workers or other persons. The area being treated must be vacated by unprotected persons."
2. "It is a violation of Federal Law to use this product in a manner inconsistent with its labeling."
3. The labels of all products in Toxicity Category I and II, in addition to the English signal word, must include the Spanish language equivalent on the front panel. The appropriate Spanish signal word, "PELIGRO" (for DANGER) or "AVISO" (for WARNING) must appear in capital letters of the same type size as the equivalent English signal word.

4. Agricultural products in Toxicity Category I and II must bear minimum Spanish language precautionary statements. The following precautionary statement must be placed on the label in proximity to the Spanish signal word:

"PRECAUCION AL USUARIO: Si usted no lee ingles, no use este producto hasta que le etiqueta haya sido explicado ampliamente".

(TRANSLATION: TO THE USER: If you cannot read English, do not use this product until the label has been fully explained to you. The English translation of the Spanish precautionary statement is not required to appear on your product label.)

5. All agricultural use products applied to crops utilizing hand labor tasks, except as specified in Section B (1) of this Notice, must bear the following label statement:

"Do not enter treated areas without protective clothing until sprays have dried (or, if appropriate, dusts have settled)."

6. "Because certain states may require more restrictive reentry intervals for various crops treated with this product, consult your State Department of Agriculture for further information."

7. "Written or oral warnings must be given to workers who are expected to be in a treated area or in an area about to be treated with this product. (Indicate specific oral warnings which inform workers of areas or fields that may not be entered without specific protective clothing, period of time field must be vacated and appropriate actions to take in case of accidental exposure.) When oral warnings are given, warnings shall be given in a language customarily understood by workers. Oral warnings must be given if there is reason to believe that written warnings cannot be understood by workers. Written warnings must include the following information: (Appropriate signal word DANGER or WARNING). Area treated with (name of pesticide) on (date of application). Do not enter without appropriate protective clothing for (insert here reentry interval for your product). (insert here actions to take in case of accidental exposure.)" This statement may either appear on the label (see Attachment B for specific location) or on the labeling accompanying the product.

B. Specific Reentry and Farmworker Safety Statements:

Because of their inherent human toxicity and to reduce risks for crop use patterns utilizing hand labor, the Agency has determined that all products with reentry intervals established through 40 CFR 170 must bear the following label statement:

"Do not enter treated areas for (insert here appropriate reentry time interval from chart below) hours unless appropriate protective clothing is worn."

<u>Reentry Intervals</u>		
Ethyl Parathion...48 hrs.	Monocrotophos....48 hrs.	Demeton...48 hrs.
Metasystox-R.....48 hrs.	Phosalone.....24 hrs.	Bidrin....48 hrs.
Methyl Parathion..48 hrs.	Carbophenothion..48 hrs.	Ethion....24 hrs.
Azinphos Methyl...24 hrs.	Endrin.....48 hrs.	

III. Compliance:

It is the responsibility of the registrants to ensure that the labels of their products, including distributor products, contain specific instructions pertaining to farmworker safety. Existing stocks of products in channels of trade (that is, out of the registrant's physical possession) prior to December 31, 1984, need not be relabeled. All products released for shipment after December 31, 1984, must meet the requirements of this Notice, or they will be deemed misbranded under Section 2(q)(1)(G). Failure to revise product labeling in accordance with this Notice may also result in the initiation of cancellation proceedings.

If you wish to make changes not specified in this Notice, or to modify any of the required statements, you must submit an application for amended registration to the address listed below:

(Product Manager for your product listed in Attachment A)
Registration Division (TS-767-C)
U.S. Environmental Protection Agency

IV. Further Information:

Questions on this Notice may be directed to the appropriate Product Manager or Richard King, Policy & Liaison Staff, Registration Division, at (703) 557-0592.



Douglas D. Campt, Director
Registration Division (TS-767-C)

Attachments

- A. Product Manager Assignments
- B. Sample Product Label

ATTACHMENT B - Sample Label

Label
Statements

A(1)
Choice of
one location

153

A(2)

A(5)

A(6)

B

A(7)

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

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

A(3)
Equivalent
Spanish
Signal
Word

A(4)
Spanish
Statement
Regarding
Inability to
Read English

APPENDIX F

FIFRA §3(c)(2)(B) SUMMARY SHEET
(EPA FORM 8580-1)

FIFRA SECTION 3(C)(2)(B) SUMMARY SHEET		EPA REGISTRATION NO.
PRODUCT NAME		
APPLICANT'S NAME		DATE GUIDANCE DOCUMENT ISSUED
<p>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:</p>		
<input type="checkbox"/> 1. I will submit data in a timely manner 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:		
<input type="checkbox"/> 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		
<input type="checkbox"/> 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:		
<input type="checkbox"/> 4. I request that you amend my registration by deleting the following uses (this option is not available to applicants for new products):		
<input type="checkbox"/> 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

APPENDIX F
CERTIFICATION OF ATTEMPT TO ENTER INTO
AN AGREEMENT WITH OTHER REGISTRANTS
FOR DEVELOPMENT OF DATA
(EPA FORM 8580-6)

CERTIFICATION OF ATTEMPT TO ENTER INTO AN AGREEMENT WITH OTHER REGISTRANTS FOR DEVELOPMENT OF DATA (To qualify, certify <u>ALL</u> 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

APPENDIX G
FORMULATOR'S EXEMPTION STATEMENT

FORMULATOR'S EXEMPTION STATEMENT
(40 CFR 152.85)

EPA File Symbol/Reg. No. _____ Product Name _____

Applicant's Name and Address _____

As an authorized representative of the applicant for registration of the product identified above, I hereby certify that:

(1) This product contains the active ingredient(s): _____

(2) Each active ingredient listed in paragraph (1) is present solely as the result of the incorporation into the product (during formulation or packaging) of another product which contains that active ingredient, which is registered under FIFRA sec. 3, and which is purchased by us from another producer.

(3) Indicate by circling (A) or (B) below which paragraph applies:

(A) An accurate Confidential Statement of Formula (EPA Form 8570-4) 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 active ingredient(s) listed in paragraph (1).

OR

(B) The Confidential Statement of Formula dated _____ on file with the EPA is complete, current and accurate and contains the information required on the current CSF Form No. 8570-4. The registered source(s) of the active ingredient(s) listed in paragraph (1) is/are listed below:

Active ingredient

Source: Product name and Reg. No.

Signature _____

Date _____

Title _____

BIBLIOGRAPHY

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 of 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 Number). 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.

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Citations Considered to be Part of the Data Base Supporting
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<u>MRID</u>	<u>CITATION</u>
00023990	Elanco Products Company (1969) Oryzalin--Fruit and Nut Crops. (Unpublished study received Sep 1, 1976 under 6F1859; CDL: 098067-K)
00026081	Probst, G.W. (1979) Monitoring and Exposure Data on Oryzalin. (Un- published study received Dec 12, 1979 under 1471-96; submitted by Elanco Products Co., Div. of Eli Lilly and Co., Indianapolis, Ind.; CDL:241536-Z)
00026084	Eli Lilly and Company (1972) Technical Report on EL-119: A New Experimental Herbicide. Indianapolis, Ind.: Elanco Products Co. (Also in unpublished submission received Dec 12, 1979 under 1471-96; submitted by Elanco Products Co., Div. of Eli Lilly and Co., Indianapolis, Ind.; CDL:241536-AC)
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00026762	Arthur, B.H.; Worth, H.M.; Hoffman, D.G.; et al. (1972) Guinea Pig Sensitization Study with EL-119: Study G-D-7-72. (Unpublished study received Dec 12, 1979 under 1471-96; submitted by Elanco Products Co., Div. of Eli Lilly and Co., Indianapolis, Ind.; CDL:241537-H)

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00026773	Kitchen, D.N.; Hoffman, D.G.; Todd, G.C.; et al. (1979) The Toxicological Evaluation of Oryzalin (Compound 67019) Given to Mice in the Diet for Three Months: Study M-9276. (Unpublished study received Dec 12, 1979 under 1471-96; submitted by Elanco Products Co., Div. of Eli Lilly and Co., Indianapolis, Ind.; CDL:241537-T)
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00027289	Kitchen, D.N.; Arthur, B.H.; Gibson, W.R.; et al. (1977) Summary of Acute and Subacute Toxicity Studies of Surflan 4 AS. Summary of studies 241537-M through 241537-R. (Unpublished study received Dec 12, 1979 under 1471-96; submitted by Elanco Products Co., Div. of Eli Lilly and Co., Indianapolis, Ind.; CDL:241537-K)
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00038673	Kitchen, D.N.; Arthur, B.H.; Gibson, W.R.; et al. (1977) Acute and Subacute Toxicity Studies of Surflan 4 AS (43% by Weight Compound 67019): Toxicology Submission No. 5. (Unpublished study received on unknown date under 1471-96; submitted by Elanco Products Co., Div. of Eli Lilly and Co., Indianapolis, Ind.; CDL:242443-K)
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00072593	Carter, J.L.; Negilski, D.S.; Kehr, C.C.; et al. (1980) The Toxicity of Compound 67019 (Oryzalin) to Bobwhite Quail in a Five-day Dietary Study: Study No. A010-79. Includes undated method ATY. (Unpublished study received May 7, 1981 under 1471-96; submitted by Elanco Products Co., Div. of Eli Lilly and Co., Indianapolis, Ind.; CDL:245053-A)
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00072595	Sleight, B.H., III (1971) Acute Toxicity of EL-119 to Bluegill (<i>Lepomis macrochirus</i>) and Rainbow Trout (<i>Salmo gairdneri</i>). (Unpublished study received May 7, 1981 under 1471-96; prepared by Bionomics, Inc., submitted by Elanco Products Co., Div. of Eli Lilly & Co., Indianapolis, Ind.; CDL:245055-A)

OFFICE OF PESTICIDE PROGRAMS
REGISTRATION STANDARD BIBLIOGRAPHY
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<u>MRID</u>	<u>CITATION</u>
00072596	Carter, J.L.; Karmak, R.E.; Kehr, C.C.; et al. (1980) The Toxicity of Compound 67019 (Oryzalin) to <i>Daphnia magna</i> in a 48-hour Static Test: Study Nos. 5005-79 and 5012-79. (Unpublished study received May 7, 1981 under 1471-96; submitted by Elanco Products Co., Div. of Eli Lilly & Co., Indianapolis, Ind.; CDL:245056-A)
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00086801	Probst, G.S.; Hill, L.E.; Jordan, W.H.; et al. (1981) The Effect of Oryzalin (Lilly Compound 67019) on the Induction of DNA Repair Synthesis in Primary Cultures of Adult Rat Hepatocytes: Study 810217-337-UDS. (Unpublished study received Nov 19, 1981 under 1471-96; submitted by Elanco Products Co., Div. of Eli Lilly and Co., Indianapolis, Ind.; CDL:246259-A)
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- 00106663 Elanco Products Co. (1968) Environmental Bioassay, Fish: Oryzalin. (Unpublished study received Jun 18, 1972 under 2G1201; CDL:091019-F)
- 00106664 Arthur, B.; Worth, H., ed. (1971) Subacute Dermal Toxicity Study--Rabbits: Study B-705-71. (Unpublished study received Jun 18, 1972 under 2G1201; submitted by Elanco Products Co., Div. of Eli Lilly and Co., Indianapolis, IN; CDL:091019-G)
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OFFICE OF PESTICIDE PROGRAMS
REGISTRATION STANDARD BIBLIOGRAPHY
Citations Considered to be Part of the Data Base Supporting
Registrations Under the Oryzalin Standard

<u>MRID</u>	<u>CITATION</u>
00126843	Cochrane, R.; Jordan, W.; Brannon, D.; et al. (1982) The Toxicity of Oryzalin (EL-119, Compound 67019) in a One-generation Study with Mallards: Study A00482. (Unpublished study received Apr 14, 1983 under 1471-96; submitted by Elanco Products Co., Div. of Eli Lilly and Co., Indianapolis, IN; CDL:071521-C)
000129050	Cochrane, R.; Jordan, W.; Brannon, D.; et al. (1983) The Toxicity of Oryzalin (EL-119, Compound 67019) in a One-generation Reproduction Study with Bobwhite: Study A01282. (Unpublished study received Jun 3, 1983; Jun 8, 1983 under 1471-96; submitted by Elanco Products Co., Div. of Eli Lilly and Co., Indianapolis, IN; CDL:250589-A)
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ENVIRONMENTAL PROTECTION AGENCY
OFFICE OF PESTICIDES AND TOXIC SUBSTANCES

[OPP-36103;FRL]

PESTICIDE REGISTRATION STANDARDS; AVAILABILITY FOR COMMENT

AGENCY: Environmental Protection Agency (EPA).

ACTION: Notice of Availability of draft Standard for comment.

SUMMARY: This notice announces the availability of certain draft pesticide Registration Standard documents for comment. The Agency has completed a review of each listed pesticide and is making available a document describing its regulatory conclusions and actions.

DATE: Written comments on each Registration Standard should be submitted on or before [insert date 60 days after date of publication in the FEDERAL REGISTER].

ADDRESSES: Three copies of comments identified with the docket number listed with each Registration Standard should be submitted to: By mail:

Information Services Section,
Program Management and Support Division (TS-757C),
Office of Pesticide Programs,
Environmental Protection Agency,
401 M St., SW.,
Washington, D.C. 20460.

85P-2132

In person, deliver comments to:

Rm. 236, CM#2,
1921 Jefferson Davis Highway,
Arlington, VA.

Information submitted as a comment in response to this notice may be claimed confidential by marking any part or all of that information as "Confidential Business Information" (CBI). Information so marked will not be disclosed except in accordance with procedures set forth in 40 CFR Part 2. A copy of the comment that does not contain CBI must be submitted for inclusion in the public docket. Information not marked confidential will be included in the public docket without prior notice. The public docket will be available for public inspection in Rm. 236 at the address given above, from 8 a.m. to 4 p.m., Monday through Friday, excluding legal holidays. FOR FURTHER INFORMATION CONTACT: To request a copy of a Registration Standard, contact Frances Mann of the Information Services Section, in Rm. 236 at the address given above (703-557-3262). Requests should be submitted no later than [insert date 30 days after date of publication in FEDERAL REGISTER] to allow sufficient time for receipt before the close of the comment period.

For technical questions related to each Registration Standard, contact the Product Manager listed for that Standard, at the phone number given.

SUPPLEMENTARY INFORMATION: The Environmental Protection Agency conducts a systematic review of pesticides to determine whether they meet the criteria for continued registration under section 3(c)(5) of the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA). That review culminates in the issuance of a Registration Standard, a document describing the Agency's regulatory conclusions and positions on the continued registrability of the pesticide. In accordance with 40 CFR 155.34(c), published in the FEDERAL REGISTER on November 27, 1985 (50 FR 48998), before issuing certain Registration Standards, the Agency makes the draft document available for public comment.

Draft Registration Standards for the following pesticides are now available:

<u>Name of pesticide</u>	<u>Docket number</u>	<u>Contact person</u>
1. Acephate	30560-19-1	William H. Miller Product Manager 16 (703-557-2600)
2. Amitraz	33089-61-1	Jay Ellenberger Product Manager 12 (703-557-2386)
3. Chlordimeform	6164-98-3	Jay Ellenberger
4. Copper sulfate	1344-73-6	Richard Mountfort Product Manager 23 (703-557-1830)
5. Oryzalin	19044-88-3	Robert Taylor Product Manager 25 (703-557-1800)

Copies of each Registration Standard may be obtained from the Agency at the address listed under For Further Information Contact. Because of the length of each Standard and the limited number of copies available for distribution, only one copy can be provided by mail to any one individual or organization. Each Registration Standard is also available for inspection and copying in EPA Regional Offices at the addresses listed below after [insert date 30 days after date of publication in the FEDERAL REGISTER].

LIST OF EPA REGIONAL OFFICES

Pesticides Branch
EPA - Region I
JFK Federal Building
Boston, MA 02203
Contact person: ~~Harold Kazmaier~~ *Andrew Triolo*

Pesticides Branch
EPA - Region II
Woodbridge Avenue
Edison, NJ 08837
Contact person: ~~Fred Kozak~~ *Dave Andreassen*

EPA - Region III
Curtis Building
6th and Walnut Sts.
Philadelphia, PA 19106
Contact person: John Smith

Pesticide and Toxic Substances Branch
EPA - Region IV
345 Courtland St., NE
Atlanta, GA 30365
Contact person: Kent Williams

Toxic Materials Branch
EPA - Region V
230 South Dearborn St.
Chicago, IL 60604
Contact person: Lavarre Uhlken

Pesticide and Toxic Substances Branch
EPA - Region VI
1201 Elm St.
Dallas, TX 75270
Contact person: Norman Dyer

Pesticide and Toxic Substances Branch
EPA - Region VII
324 East 11th St.
Kansas City, MO 64106
Contact person: Leo Alderman

Toxic Substances Branch
EPA - Region VIII
1860 Lincoln St., Suite 900
Denver, CO 80295
Contact person: ~~Bob Harding~~ Dean Gillam

Hazardous Materials Branch
EPA - Region IX
215 Fremont St.
San Francisco, CA 94105
Contact person: ~~Nancy Frost~~ Laurie Perrot

Air & Water Division
EPA - Region X
1200 6th Ave.
Seattle, WA 98101
Contact person: ~~Lyn Frandsen~~ Chuck ShenK

Dated: _____

Director,
Office of Pesticide Programs.