

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

TIDE INTERNATIONAL (USA), INC.,
Petitioner,

v.

UPL NA INC.,
Patent Owner.

Case IPR2020-01113
U.S. Patent No. 7,473,685

DECLARATION OF DAVID A. ROCKSTRAW, Ph.D., P.E.

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II. Introduction

1. My name is David A. Rockstraw. I have been retained by Finnegan, Henderson, Farabow, Garrett & Dunner, L.L.P. for patent owner UPL NA Inc. as an independent expert in connection with the *Inter Partes* Review of U.S. Patent 6,743,685 (the '685 patent) in IPR2020-01113. I am being compensated for the time I spend on this matter, but no part of my compensation is dependent on the outcome of this proceeding.

2. My declaration responds to the arguments presented in the Petition of Tide International (USA), Inc. ("Petition") and to the declaration of William Geigle in support of Tide's Petition. Paper 2; Ex. 1003.

III. Summary of Opinions

3. I conclude that the combinations in Grounds 1-3 of the Petition would not have rendered obvious the granules of claims 1-4 or 7-12 of the '685 patent.

4. First, claims 1-4 all require a granule consisting of 85-98% acephate in combination with a precise set of five excipients—and only five excipients—in specific amounts. Ex. 1001, claims 1-4. But the publications in Grounds 1-3 would have motivated a person of ordinary skill in the art (POSA) to prepare granules with excipients not recited in these claims, including at least a binding agent. Tide failed to show that any combination of publications would have resulted in a granule *without* a binding agent. In other words, no combination would have

motivated a POSA to prepare the granule of claims 1-4 of the '685 patent. *See infra*, Sections X.A.1, XI.A.1, XII.A.I.

5. Indeed, Tide's publications and the background art such as Knowles (Ex. 1024) would have motivated a POSA to add over 4% binding agent to a granule to reduce dustiness. As a result, the combinations of Grounds 1-3 would have failed to motivate a POSA to prepare the granule of claims 7-12, which require 0.01-3% binding agent. *See infra*, Sections X.C.2, XI.C.2, XII.C.2.

6. Next, Tide failed to show that any combination in Grounds 1-3 would have motivated a POSA to prepare a granule containing only 0.01-1% stabilizer, as required by claims 1-4 and 7-12 of the '685 patent. *See infra*, Sections X.A.2, X.C.1, XI.A.2, XI.C.1, XII.A.2, XII.C.1. Tide argues that a POSA would have optimized the amount of a stabilizer using tests such as accelerated aging. But even if a POSA would have been motivated to prepare a chemically stable granule of acephate, none of the publications cited by Tide provide any scientific basis to expect that a POSA would optimize the level of stabilizer to 0.01-1%. In fact, the sole publication cited by Tide that reports stability data for formulations containing acephate (CN '588, Ex. 1007) shows that stabilizers in amounts that greatly exceed the claimed range failed to prevent decomposition of acephate.

7. For claims 7-12, Tide additionally failed to show that the cited publications would have motivated a POSA to include a disintegrating agent to the

granules of Misselbrook. Rather, the art strongly suggests that in formulations comprised largely of a water-soluble pesticide and a water-soluble binder, no disintegrating agent is required. *See infra*, Sections X.C.3, XI.C.3, XII.C.3.

8. Next, Tide's arguments are all driven by hindsight. The art cited by Tide provides no scientific basis for preparing any granule claimed in the '685 patent. To arrive at these granules, a POSA would have needed to make several choices that are not taught in—and at times contradicted by the teachings of—the prior art. *See infra*, Sections X.A.3, X.C.4, XI.A.3, XI.C.4, XII.A.3, XII.C.4.

9. For completeness, I note that the disclosures in two of Tide's four publications were cited and/or discussed during prosecution. In particular, Misselbrook (Ex. 1005) contains the same disclosures as Lescota (Ex. 1020), which was discussed in two rejections by the Examiner. Ex. 1002, 42-43, 113-14. Next, CN '588 (Ex. 1007) is a foreign counterpart to Yamada (*see* Ex. 2003, Ex. 2004), which was cited during prosecution. Ex. 1002, 31, 46. In my opinion, the Examiner properly allowed the claims over these references, and even considering these references in combination with Tide's other references (Mayer and JP '902), a POSA would not have had any scientific rationale for preparing the granules of 1-4 or 7-12 of the '685 patent.

IV. Qualifications

10. I have extensive educational training and industry experience in the field of chemical engineering. Over the past 35 years, I have worked in the chemical processing industries; academia; government labs; and private practice as a consultant, R&D engineer, expert witness, and forensic analyst. I have diverse experience that includes background in commodity chemicals manufacture; energy; water; petrochemicals; pharmaceuticals; agricultural chemicals; fluorochemicals; monomers, polymers and plastics; plutonium processing; membrane/electromembrane processes; safety; biofuels; and processed foods.

11. I currently hold the position titles of (1) Robert Davis Distinguished Professor, (2) New Mexico State University Distinguished Achievement Professor, and (3) Academic Department Head of Chemical & Materials Engineering. I am also the creator and former Director of the NMSBrew Brewery Engineering program at New Mexico State University (“NMSU”), which won the American Institute of Chemical Engineers brewing national championship in 2019, and have recently served as Interim Department Head of the Aerospace & Mechanical Engineering programs. I have been employed at NMSU since 1995 and was tenured in 2000.

12. I hold a Bachelor of Science in Chemical Engineering from Purdue University and a Doctor of Philosophy (Ph.D.) from The University of Oklahoma.

13. I am a Fellow of the American Institute of Chemical Engineers (AIChE), and a former National Director of the National Society of Professional Engineers (also receiving the 2009 Engineering Education Excellence Award from NSPE). I am currently a licensed professional engineer in the states of New Mexico and Texas.

14. I have over twelve years of process R&D experience with DuPont, Conoco, Ethyl, Kraft, and Los Alamos National Laboratory including pilot and scale-up of (1) catalytic and non-catalytic hydrodechlorination reactors and associated process plants for the manufacture of the hydrofluorocarbon refrigerant 1,1,1,2-tetrafluoroethane; (2) salt-supported sodium/potassium eutectic alloy catalyst blend, and subsequent use in 3-phase catalytic coupling reactor to produce isobutylbenzene (an intermediate to ibuprofen for which two patents were issued); (3) heterogeneous (two liquid phases) catalytic reactor and process plant for the depolymerization of polytetramethylene ether glycol, (4) crystal habit modification to reduce bed pressure drop in solids filtration from aqueous plutonium streams, (5) process analysis of a bioethanol production facility based on cheese lactose feedstock, among other projects.

15. At DuPont, I was lead process research engineer for a multi-step process to manufacture methyl 3-hydroxy-2-thiophenecarboxylate, an intermediate to the active compound in a dry flowable herbicide formulation. This process

involved numerous chemical reactions and separations and, ultimately, formulation and granulation of the final product.

16. As Senior Research & Development Engineer for Ethyl Corporation, I developed and patented a reaction system for the manufacture of isobutylbenzene, an intermediate in the production of ibuprofen. The reaction system involved gaseous and liquid reactants with a eutectic metal catalyst (also the subject of a patented invention that is attributed to me). I was trained to operate a commercial granulation/tableting system during this project.

17. As a co-operative engineering student employed at Kraft, Inc., I was responsible for the set-up, operation, and clean-up of a wide variety of extrusion equipment.

18. I am a named inventor on three United States Patents, which are listed in my curriculum vitae (CV), and I have authored or co-authored more than eighty professional papers and conference contributions.

19. Further detail on my education, work, and teaching experience, and the cases in which I have previously given testimony in at least the past six years are contained in my CV (Ex. 2008).

V. Materials Considered

20. In forming my opinions, I considered Tide's petition, Exhibits 1001 to 1035, and all exhibits and information cited or discussed in my declaration,

including those listed in Table 1 (below). I also relied on my experience, education, and knowledge of the art. I further relied on information contained in the publicly accessible database maintained by the U.S. Environmental Protection Agency, available at <https://iaspub.epa.gov/apex/pesticides/f?p=PPLS:1>, which contains information about registered pesticide products, including product labels.

Table 1	
Publication	Exhibit No.
Yamada, U.S. Patent No. 5,488,043	2003
Cummings, WO 98/26656	2005
Chan, U.S. Patent No. 5,075,058	2006
Sanyo Chemical Product Outline	2009

VI. Legal Principles

21. Claim construction. I understand that patent claims must be interpreted from the perspective of a person of ordinary skill in the art in the context of the patent specification.

22. Obviousness. I understand that determining whether a patent claim is obvious requires analysis of four components: (1) the scope and content of the prior art; (2) the differences between the claimed subject matter and the prior art; (3) the level of skill in the art; and (4) objective evidence of non-obviousness.

23. I understand that when assessing the prior art, one should consider whether a person of ordinary skill in the art would have been motivated to combine the disclosures in the prior art to achieve the claimed invention, and whether the person of ordinary skill in the art would have had a reasonable expectation of success in doing so.

24. I am informed that where the prior art “teaches away” from the claimed invention, that may show the invention would not have been obvious. I understand that the prior art teaches away when it would have led a POSA in a direction divergent from the path that was taken by the patent inventors.

25. I am informed that it is improper to use hindsight when evaluating obviousness. In other words, it is improper to use the patent as a roadmap to combining prior art references to arrive at the claimed invention.

VII. Technical Background

A. Introduction

26. The '685 patent describes and claims innovative granular formulations containing a high level of acephate in combination with a precise set of five or seven excipients.

27. Tide repeatedly argues that combining these ingredients and amounts to arrive at a granule containing 85-98%¹ acephate would have been a matter of routine experimentation and optimization. E.g., Petition at 21-23, 26, 27, 29, 34, 36.

28. I disagree. The field of pesticide formulation is an unpredictable art. At times, extensive experimentation is required to arrive at a workable solution.

29. The art here reveals that preparing granules containing 85-98% acephate had proven difficult. Some of these difficulties are described in the background sections of the '685 patent. Ex. 1001, 1:61-2:20. These difficulties underscore the unpredictable nature of pesticide formulations.

30. Certain prior art publications proposed solutions to the problems with acephate formulations. However, the solutions proposed in the prior art differed markedly from the solution provided by the claimed invention, supporting the conclusion that it was not a simple matter of optimizing ingredients and amounts to arrive at the claimed granules.

¹ All percentages in my declaration refer to weight percentages unless otherwise noted.

1. Chan highlights the difficulties with preparing granules containing high levels of acephate.

31. U.S. Patent No. 5,075,058 (“Chan”) (Ex. 2006) assigned to Chevron Research and Technology Company (“Chevron”) underscores the difficulties with preparing granules containing high levels of acephate.

32. Chan explained that as of 1990, commercially available granular acephate (branded ORTHENE®) contained “relatively small amounts of ORTHENE®, typically no more than 5% active ingredient. Attempts to manufacture technical assay (approximately 97% active ingredient) ORTHENE® pellets from the dry ORTHENE® technical powder have heretofore been unsuccessful.” Chan, 2:61-67.

33. As Chan further explained:

An agglomerate form of ORTHENE® which also minimizes airborne contamination due to dust, has been constrained to dilute concentrations of ORTHENE® applied to large particles by spraying and then dried or as a dilute concentration of ORTHENE® combined with binders and anti-caking agents to form agglomerates via processes known to those skilled in the art, such as, pan granulation, extrusion, fluid granulation, pelletizing. The concentration of ORTHENE® via these methods has heretofore been limited to a concentration no greater than about 36% to 50%, with known commercial products typically no more than 5% ORTHENE.

Ex. 2006, 2:3-15.

34. Chan identified at least two issues contributing to the difficulties of preparing granules containing high levels of acephate.

35. First, Chan explained that the “limit on concentration of ORTHENE® was due to the melt property of ORTHENE® limiting the feasible operability of this form of the product.” Ex. 2006, 2:15-17. In other words, acephate’s relatively low melting temperature (81-91 °C) made preparing granules difficult. *See* Ex. 1012, 25 (listing melting point of acephate as 81-91 °C).

36. Second, according to Chan, the concentration of acephate was limited by the “ability of binding agents to form agglomerates, i.e. a minimum amount of any particular binding agent is required in order to meet physical properties of attrition resistance, crush strength and bulk density.” Ex. 2006, 2:17-22.

37. Chan proposed to overcome these difficulties by preparing pellets containing acephate in combination with other active ingredients. Ex. 2006, 5:3-22. For example, Chan stated that it was “particularly advantageous to combine ORTHENE® insecticides in a pellet with other insecticides” Ex. 2006, 5:6-8.

38. Notably, the ’685 patent claims do not recite any insecticide in combination with acephate. The solution provided in the ’685 patent is thus very different from the solution proposed by Chan.

2. Yamada highlights the difficulties with preparing granules containing high levels of acephate.

39. As an added complication, acephate is susceptible to degradation.

40. As explained by Yamada, compared to “other organic phosphoric compounds having an insecticidal activity, acephate has a lower stability in a pesticidal formulation. Accordingly, acephate in the formulation is vigorously decomposed depending on the storage condition and the activity of acephate could not be often exhibited efficiently.” Ex. 2003, 1:15-20.

41. Yamada proposed to overcome this difficulty by combining acephate with specific stabilizers. Ex. 2003, 1:25-67.

42. However, even when such stabilizers were used at levels of about 1 part stabilizer to 1 part acephate, the acephate content degraded over time. Ex. 2003, 3:20-4:43.

43. Notably, Yamada did not describe the preparation of any granule containing 85-98% acephate and 0.01-1% stabilizer, much less indicate whether acephate would be chemically stable in such granules.

44. Yamada thus does not appear to provide a workable solution to the problems with preparing granules containing 85-98% acephate. In fact, Yamada’s wetttable powders contain, at most, 25% acephate. Ex. 2003, 3:30-48.

3. Cummings confirmed the difficulties with preparing non-dusty formulations containing high levels of acephate.

45. PCT publication no. WO 98/26656 (“Cummings”) further supports the difficulties with preparing non-dusty formulations such as pellets containing high levels of acephate. Ex. 2005, 4-5.

46. For example, Cummings disclosed that “[t]he present inventors have conducted considerable experimentation in the area of producing high-strength acephate pellets, and have confirmed the manufacturing difficulties which the Chevron inventors [e.g., Chan] apparently experienced.” Ex. 2005, 4-5.

47. Cummings explained that “acephate technical powder has a tendency to clump and agglomerate over time, and has proven to be difficult to process, as recognized in the art.” Ex. 2005, 10.

48. Cummings developed certain processes to overcome the difficulties with preparing non-dusty pellets containing a high level of acephate, including by controlling the temperature inside the extrusion barrel. Ex. 2005, 15-17.

49. Cummings stated that when using the processes disclosed therein, pellets containing high levels of acephate could be prepared “using only water as a processing aid.” Ex. 2005, 11. According to Cummings, pellets could be prepared containing 97%, 98%, or even 99% acephate *with no other excipients. E.g.* Ex. 2005, 24 (“The purpose of this trial was to test prepare [*sic*] high strength

pellets without any processing aids, such as the Agrimer VA-6.”); *id.*, 31-32 (tables showing acephate concentrations in pellets).

50. Alternatively, pellets containing high levels of acephate could be prepared using a single excipient, Agrimer VA-6, described as a processing aid. *E.g.*, Ex. 2005, 11.

51. Notably, Cummings did not provide a solution to the difficulties with preparing *granules* containing high levels of acephate. Rather, Cummings disclosed processes to prepare pellets.

52. Cummings distinguished the pellets disclosed therein from granules as follows: “In contrast to the pellets of the present invention, the granules disclosed in [patents to ICI Australia Operations Property Ltd., ‘ICI’] are designed to have rapid dispersion and superior suspensibility in water.” Ex. 2005, 5-6. Cummings further noted that the granules in the ICI patents “normally have a surfactant component and/or a binding agent” and did not include acephate or any other insecticides belonging to the same class as acephate. Ex. 2005, 6.

53. Thus, while Cummings disclosed an efficient, low-cost route to preparing chemically stable, non-dusty acephate pellets, it did not describe a method for preparing *granules* containing 85-98% acephate.

4. Tide’s references support the difficulties with preparing granules containing high levels of acephate.

54. It is notable that from among the available patent and non-patent literature, Tide identified a *single* prior art reference providing examples of granules containing 85-95% acephate. Below, I briefly summarize Tide’s four prior art references: Misselbrook (Ex. 1005), CN ’588 (Ex. 1007), Mayer (Ex. 1010), and JP ’902 (Ex. 1009).

a. Misselbrook

55. Misselbrook discloses pesticidal compositions comprising a water-soluble pesticide, preferably emamectin or an agriculturally acceptable salt thereof. Ex. 1005, 2:55-56, 2:66-67. Misselbrook discloses that the composition may be provided as a wettable powder, water-soluble granule, aggregate, matrix, or a monolith such as a brick, pellet, tablet, stick, film, sheet, and the like. *Id.*, 3:22-27. Misselbrook states that preferably, the pesticidal composition is “embedded in a water-soluble matrix or monolith.” *Id.*, 3:28-29.

56. Misselbrook focuses on compositions comprising emamectin benzoate with water-soluble binding agents² such as lactose, sucrose, and glucose that

² I discuss these binding agents in greater detail in Section X.A.1 of my declaration.

optionally comprise additional excipients. *See id.*, 3:34-4:32, 9:20-12:25.

Misselbrook's specific formulations are limited to—at most—60% emamectin benzoate. *Id.* Misselbrook does not disclose how to prepare granules containing 85-98% pesticide or provide any disclosure of specific ingredients and amounts thereof to include in such a granule. *E.g., id.* Misselbrook repeatedly discloses that binding agents such as lactose should be present at levels of at least 30%, e.g., levels that preclude incorporating 85-98% pesticide. *Id.*, 3:36-37, 3:45-4:32.

57. Misselbrook mentions acephate among a list twelve pesticides, and in the same passage, reiterates that emamectin is “particularly preferred.” Ex. 1005, 5:32-43. Misselbrook does not provide any examples or specific formulations containing acephate. Nor does Misselbrook propose any process, method, or formulation to overcome the difficulties described above. I discuss Misselbrook in detail below in the context of Grounds 1-3 of the Petition.

b. CN '588

58. Like Misselbrook, CN '588 does not propose any process, method, or formulation to overcome the difficulties described above. And like Misselbrook, CN '588 does not describe any granules containing acephate. *E.g.*, 1007, 6. Instead, CN '588 generally provides a laundry list of potential preparations, stating that the dry pesticide preparation “can be a dustable powder, non-floating dustable powder, wettable powder, water soluble powder, granule, water soluble granule,

water dispersible granule, dry flowable, tablet or pill.” *Id.*, 5-6. The specific embodiments of CN ’588 are wettable powders containing 25% acephate. *Id.*, 6. While CN ’588 focuses on two purported stabilizers for acephate, the data in the publication shows that acephate decomposed as formulated in the presence 20-30% of the disclosed stabilizer(s). *Id.*, 2 (abstract), 7-8 (showing decomposition rates of acephate from accelerated aging studies). I discuss CN ’588 in greater detail in the context of my specific responses to the arguments in the Petition.

c. Mayer

59. Like Misselbrook and CN ’588, Mayer does not propose any process, method, or formulation to overcome the reported difficulties with preparing granules containing 85-98% acephate. *See generally* Ex. 1010. And like Misselbrook and CN ’588, Mayer does not describe any granules containing acephate. In fact, Mayer fails to mention acephate at all, despite providing a lengthy list of preferred pesticides spanning nearly two columns of the patent. *Id.*, 2:21-3:59. I discuss Mayer in greater detail below.

d. JP ’902

60. JP ’902 describes pesticide granules that “prevent caking and experience very little dusting.” Ex. 1009, 3 (abstract). JP ’902 identifies over 30 insecticides, over 40 fungicides, and over 40 herbicides that may be included in the granules, either alone or in combination. *Id.*, [0006]-[0007].

61. In contrast to the other publications relied on by Tide, which do not disclose any acephate granules, JP '902 provides examples of granules containing acephate (alone or in combination with other active ingredients). *See id.*, [0020], [0021], [0024], [0025], [0027].

62. JP '902 provides two examples of granules containing 95% acephate, Reference Example 4 and Example 6. *Id.*, [0018], [0024].

63. Reference Example 4 (Granules D) contained 95% acephate in the presence of a binder, additional excipients, and 8% water. Ex. 1009, [0018]. When the resulting granules were mixed with water (as they would be when used in the field), most of the product did not disintegrate, e.g., it remained caked at the bottom of the container. *Id.*, [0018], [0030], [0031] (reporting results of disintegration tests). Reference Example 4 (Granules D) thus exemplifies certain difficulties in preparing granules containing 85-98% acephate. An excerpt from JP '902 is included below for reference.

{Evaluation Method}

- The pot was tipped and no caking was observed.
 + The pot was tipped and caking was observed, but the caking readily disintegrated with light tapping. Alternatively, masses of less than 5 mm were observed.
 ++ The pot was tipped, caking was observed, and about half disintegrated with light tapping. Alternatively, masses of 5 mm or more were observed.
 +++ The pot was tipped, caking was observed, and most did not disintegrate even after vigorous tapping.

The results from Test Examples 1 to 3 are shown in Table 1.

[0031]

[Table 1]

Results of Testing Formulations for Disintegration in Water,
 Dispersibility in Water, and Caking

Example	Disintegration in Water	Dispersibility in Water	Caking
Granules A	A	0	++
Granules B	B	5	++
Granules C	A	1	++
Granules D	A	1	+++
Granules E	A	1	-
Granules F	A	1	-
Granules G	A	0	-
Granules H	A	1	-
Granules I	A	1	-
Granules J	A	0	-
Granules K	A	0	-
Granules L	A	1	-
Granules M	A	1	-

Figure 1. JP '902, [0030], [0031], highlighted.

64. Example 6 of JP '902 describes granules containing acephate in combination with a surfactant, a colorant, an anticaking agent, and a binder (lactose), which were kneaded then granulated in the presence of 4% water. Ex. 1009, [0015], [0024]. While JP '902 provides information on the disintegration of this granule, it does not provide any information regarding the chemical stability of acephate in the formulation. It is thus unclear whether JP '902 provided a workable solution to the difficulties with preparing granules containing 85-98%

acephate. I note that Tide does not rely on Example 6 of JP '902 as the starting point in its arguments. Example 6 discloses a very different set of ingredients than claimed in the '685 patent, and Tide does not attempt to show any path (much less a scientifically valid path) for modifying Example 6 to arrive at the granules claimed in the '685 patent.

65. Taken together, the prior art thus highlights the unpredictability and difficulties with preparing granules containing 85-98% acephate and establishes that selecting and optimizing ingredients and amounts to prepare such granules was not a simple matter of routine experimentation, as Tide argues.

B. Acephate Products Registered by December 18, 2001

66. The acephate products registered with the United States Environmental Protection Agency (“EPA”) by December 18, 2001, support the conclusion that granules containing high levels of acephate were difficult to prepare.

67. The active and inactive EPA registrations for acephate are listed in Exhibit 1013 (active registrations) and Exhibit 1014 (inactive registrations). Based on my review of these exhibits and related product labels, it appears that only one granular product containing 85-98% acephate had been registered with EPA as of December 18, 2001. *See* Ex. 1013; Ex. 1014. The formulation of that product is not included in the product label, and thus it is unclear whether or how the registrant

overcame the difficulties reported by others for granules containing high levels of acephate.

68. In Attachments A and B, I have annotated the lists contained in Exhibits 1013 and 1014 to note registrations approved after December 18, 2001, state-specific registrations (which are associated with related EPA product registrations), and registrations related to non-granular formulations, e.g., soluble powders, liquids (e.g., sprays or concentrates), implantable cartridges, pellets, etc. I note that compared to granules, pellets were generally larger, more highly compacted, and required longer times to dissolve or disperse in water. *See e.g.*, Ex. 2005, 5-6 (“In contrast to the *pellets* of the present invention, the *granules* disclosed in these ICI patents are designed to have rapid dispersion and superior suspensibility in water.”). Attachment C contains the references cited in Attachments A and B.

69. Tide argues that from the 1970s to 2001, the EPA had received “hundreds” of registrations for pesticides containing acephate, “several as high as 97 percent by weight.” Petition at 6. As an initial matter, Tide’s reference to “hundreds” of registrations by December 18, 2001, is an overstatement. For example:

- Exhibits 1013 and 1014 list numerous products registered after 2001.

- Exhibits 1013 and 1014 further contain numerous individual *state* registrations, e.g., registrations for using a product registered with EPA in a state such as Alabama.
- Exhibits 1013 and 1014 contain duplicate entries for products that have different brand names but the same EPA registration number, indicating that they are the same product. For example, there are duplicate entries for EPA Reg. No. 37979-1, which is an implantable cartridge designed to be hammered into a tree.

70. As noted in Attachments A and B, prior to December 18, 2001, registrations for formulations containing 85-98% acephate were for soluble powders and/or pellets—*not* granules.

71. In short, while EPA may have registered numerous acephate products prior to December 18, 2001, that says nothing about whether the granules claimed in the '685 patent would have been obvious as of that date. If anything, the products registered to EPA show that granules containing 85-98% acephate were exceptionally rare, further supporting the conclusion that such granules were difficult to prepare.

72. The claims of the '685 patent provide an innovative solution to the problems with preparing granules containing 85-98% acephate. The claimed granules require 85-98% acephate in combination with a precise set of five or

seven excipients, resulting in a chemically stable, non-dusty, dry-flowable formulation. Ex. 1001, 2:44-50.

VIII. Claim Construction

73. Tide proposes to adopt the district court's construction of the terms "dispersing agent," "antifoaming agent," and "stabilizer." Petition at 3-4. I agree with these constructions, which were the claim interpretations that I proposed during claim construction proceedings in district court.

74. Tide additionally proposes constructions for the terms "wetting agent," "binding agent," and "disintegrating agent." Petition at 4. I have adopted these constructions in my declaration.

75. Finally, Tide argued that "consisting of" creates a strong presumption that the claim is "closed," i.e., that the claim excludes other ingredients. I am informed that this is consistent with how U.S. patent claims are interpreted, and that unless the patent or prosecution history clearly shows that the patentee defined "consisting of" to mean something different, a claim "consisting of" recited ingredients excludes other ingredients.

76. The table below summarizes the claim interpretations that I have applied in my analysis.

Claim Term	Parties' Proposed Construction
claim preamble	the claim preambles are not limiting, but the transitional phrase "consisting of" is limiting
"dispersing agent"	"an agent that assists with dispersion"
"antifoaming agent"	"an agent that reduces or prevents the formation of foam"
"stabilizer"	"an agent that promotes physical or chemical stability"
"wetting agent"	"an agent that when added to a liquid, reduces the interfacial tension between the liquid and the surface on which it is spreading"
"binding agent"	"an agent that assists in the binding of particles together in a formulation."
"disintegrating agent"	"an agent that enables a liquid to penetrate the pores of a granule to allow for the dissolution of that particle."
"consisting of"	the phrase "consisting of" means there is a strong presumption that the claim is "closed," meaning no other ingredients should be added.

IX. Level of Skill in the Art

77. In my opinion, a person of ordinary skill in the art would have at least a Ph.D. in chemistry or chemical engineering and at least two years of experience with agrochemicals and related formulations, or a bachelor's degree in chemistry or chemical engineering and three to five years of experience with agrochemicals and related formulations.

78. Mr. Geigle proposed that “a person of ordinary skill in the art for the '685 patent has a bachelor's degree or Ph.D. in chemistry or chemical engineering, with at least two to four years of experience or education specifically in the formulation and development of [solid pesticides subjected to granulation processes]. Alternatively, a person who does not satisfy the identified educational level may still qualify as a person of ordinary skill if they had more relevant work experience.” Ex. 1003, ¶ 18.

79. I find requiring at least two to four years of experience or education “specifically in the formulation and development” of “solid pesticides subjected to granulation processes” is overly limiting. Ex. 1003, ¶ 18. There are other areas of practice in which an understanding of particles, granules, dispersion, wetting, foaming, and/or stability are important, and these fields overlap considerably. However, my analysis would be the same under either definition of a person of ordinary skill in the art.

X. Ground 1: Misselbrook and CN '588 in view of JP '902

A. Claim 1

- 1. The proposed combination would have led a POSA to develop granules containing excipients excluded from claim 1, including a binding agent.**

e. Introduction

80. Claim 1 of the '685 patent recites a granule “consisting of” acephate, a dispersing agent, a wetting agent, an antifoaming agent, a stabilizer, and fillers, in the following amounts:

- (i) 85-98% w/w acephate;
- (ii) 0.1-5.0% w/w a dispersing agent;
- (iii) 0.1-3% w/w a wetting agent;
- (iv) 0.01-0.08% w/w an antifoaming agent;
- (v) 0.01-1% w/w a stabilizer and
- (vi) fillers to make 100%.

Ex. 1001, claim 1.

81. Claim 1 does not recite a “binding agent.” The “consisting of” language in claim 1 indicates that no other ingredients, and no ingredients outside the claimed ranges, are included in the granule. In other words, claim 1 recites a granule that does not include any amount of a binding agent.

82. The art would have discouraged a POSA from attempting to prepare the granule of claim 1, which does not include a binding agent.

83. A POSA would have considered a binding agent and important component of a granule. For example, as of December 18, 2001, it was understood that including a binding agent would reduce dustiness in granules.

84. As Knowles explains, “[t]he quantities and types of binders present in granule formulations are also major contributors to the measured physical properties” of granules. Ex. 1024, 62. Knowles lists “dustiness” as one of three key “dry properties” of granules. Ex. 1024, 62 (“If we consider the dry properties of a granule, then it is clear that there are three areas of interest, namely the crush strength, friability and dustiness.”). The dustiness of a granule is an important safety consideration: a POSA would have sought to prepare non-dusty granules to avoid inhalation hazards. Ex. 10124, 64.

85. Knowles provided data showing that increasing the binder content from 3% to 4.5% reduced dustiness by nearly half, from 3.5 mg/g to 2 mg/g, as shown below. Ex. 1024, 67.

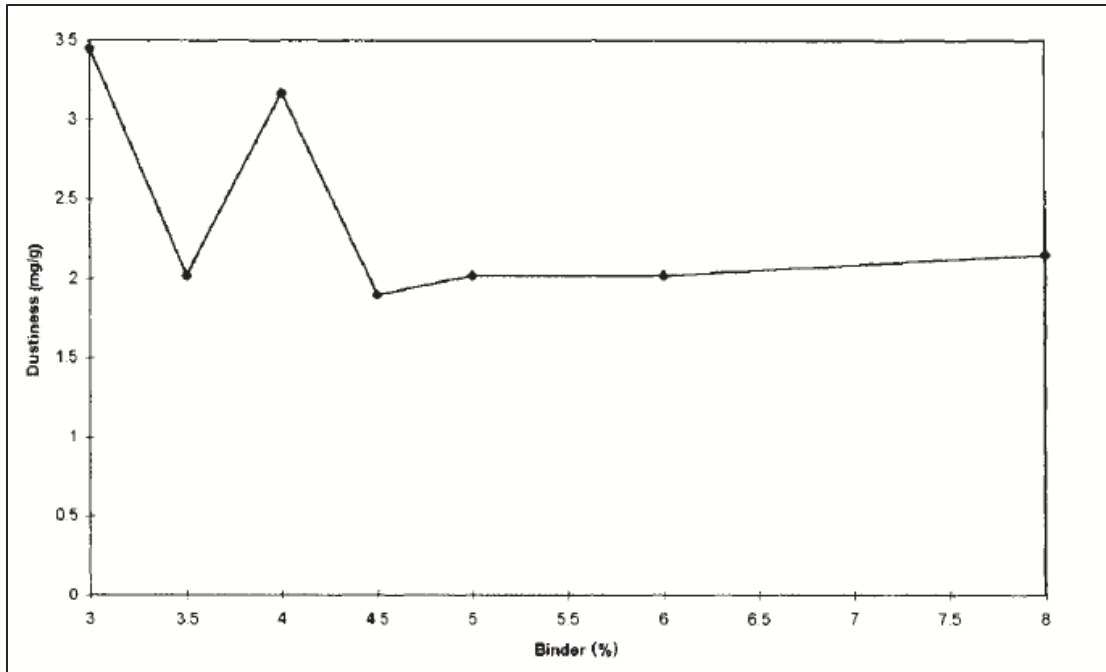


Figure 2. Ex. 1024, 67.

86. While Knowles stated that the quantity of binder is “relatively unimportant over a range of 3-8% w/w” (*id.*), the data show otherwise.

87. Indeed, Knowles reported that “[t]he quantity of dust which is being measured in this type of experiment is usually very small, say 0.1 % w/w of the overall formulation. Adding large quantities of binder in order to tie down this small fraction of particles seems excessive but it is, of course, very important for safety reasons.” Ex. 1024 at 67-68.

88. A POSA would thus have considered a binding agent to be a key component of a non-dusty granule. Tide acknowledges that a POSA would have sought to prepare granules precisely for this benefit. Petition, 21 (“A POSITA

would seek to formulate soluble granule formulations that avoided the dustiness of powdered pesticides and the hazardous storage and disposal of liquid pesticides.”).

89. I note that Tide agrees that Misselbrook, CN '588, and JP '902 would have motivated a POSA to prepare a granule containing a binding agent. Petition at 33-34. The petition and Mr. Geigle's declaration do not explain how the combination of Misselbrook, CN '588, and JP '902 would result in a granule that does *not* contain a binding agent, e.g., a granule that contains only the ingredients recited in claim 1 of the '685 patent.

90. In fact, the art cited by Tide would have discouraged any attempt to prepare a granule containing a high level of acephate without a binder, as discussed below.

f. Misselbrook

91. Misselbrook's formulations all require a binding agent. Misselbrook discloses granules containing water-soluble fillers, preferably “lactose, sucrose, glucose, and the like.” Ex. 1005, 3:2. Misselbrook also states that “[p]referred water-soluble agents include those which are biologically derived. Appropriate water-soluble fillers include lactose, glucose, fructose, mannose, mannitol, sucrose, such as confectioner's sugar, black sugar, brown sugar, soft brown sugar, other sugars or saccharides, microcrystalline cellulose, powdered cellulose” Ex. 1005, 6:3-8. For context, I note that agents such as lactose, glucose, fructose,

mannose, and sucrose were and are all classified as sugars. Sucrose is table sugar, e.g., the sugar contained in confectioner's sugar, black sugar, brown sugar, and soft brown sugar.

92. While Misselbrook refers to these agents as “water-soluble fillers,” a POSA would have known that these agents assist in holding the particles together, i.e., they are binding agents. In fact, one of these preferred agents in Misselbrook—sucrose—was identified as a preferred binding agent in the '685 patent. Ex. 1001, 3:44-45 (disclosing preferred binding agents include “sucrose and starch derivatives or a blend thereof.”).

93. Tide admits that the water-soluble agents in Misselbrook are binding agents. Petition, 60. For example, Tide stated:

- “A POSITA would know in 2001 that *common binding agents include sugars, starches, starch blends*, and their derivatives because they hold particles together using their viscosity.” Petition, 34 (emphasis added).
- “Misselbrook, JP '902, and Mayer—detailed above—teach using agents that are *traditionally binding agents*, or ‘viscosity controlling agents’ and ‘agglomeration auxiliaries,’ such as *sugars* (e.g., *sucrose* and *lactose*), starches, and starch derivatives (e.g., dextrin).” Petition, 60 (emphasis added).

- “JP ’902 teaches adding a ‘water-soluble binder,’ such as dextrin, glucose and sucrose” *Id.* at 33.

94. Tide also identifies Misselbrook’s disclosure of “lactose, glucose, fructose, mannose, mannitol, sucrose, such as confectioner’s sugar, black sugar, brown sugar, soft brown sugar, other sugars or saccharides” as support for their argument against claim 7, which requires a binding agent. Petition, 33.

95. Misselbrook focuses on three binding agents in particular: sucrose, lactose, and glucose. These binding agents are included in the specific formulations described in Misselbrook, as tabulated below.

Example	Binder	Citation
1	anhydrous lactose Direct Tableting Grade	Ex. 1005, 9:41-57
1	lactose	Ex. 1005, 10:9-26
2	anhydrous lactose, Direct Tableting Grade	Ex. 1005, 10:55-64
3	anhydrous lactose	Ex. 1005, 11:15-28
4	hydrous lactose, confectioner’s sugar (sucrose), or powdered glucose	Ex. 1005, 11:45-58.
5	anhydrous lactose, hydrous lactose, or confectioner’s sugar (sucrose)	Ex. 1005, 12:5-15

96. I note that Misselbrook discloses granules containing “Direct Tableting Grade” lactose, i.e., lactose commonly used to bind tablet ingredients together. *E.g.*, Ex. 1005, 9:50, 10:63.

97. Tide acknowledges that the agents identified in Misselbrook hold particles together using their viscosity. Petition, 34. The viscosity of these agents is attributable, at least in part, to their hydroxyl groups and resulting ability to hydrogen bond. All water-soluble agents identified in Misselbrook are capable of hydrogen bonding and assisting in binding of particles together in a formulation. The chemical structures of the three binding agents used in Misselbrook’s examples (lactose, sucrose, and glucose) are depicted below.

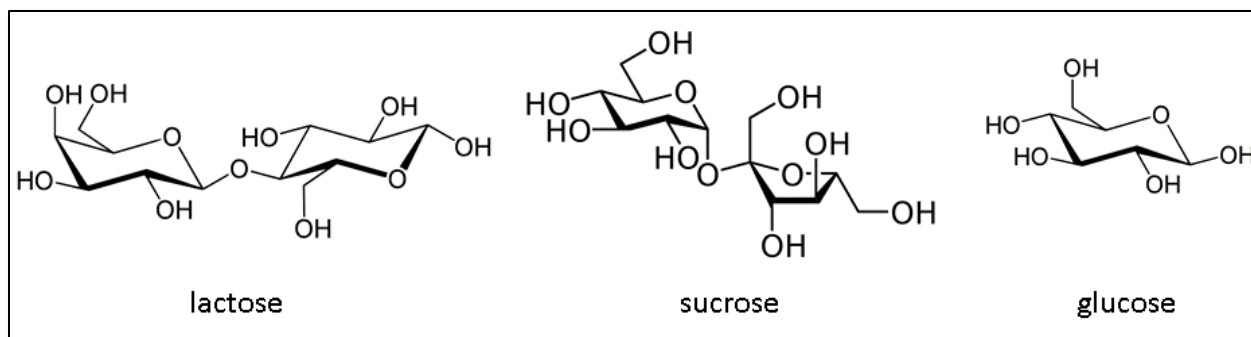


Figure 3. Chemical structures of common binding agents: lactose, sucrose, and glucose.

98. A POSA would have understood that the hydroxyl groups of these agents would be capable of hydrogen bonding to each other and/or to a water-

soluble pesticide such as emamectin benzoate, resulting in particle adhesion and reduced dustiness.

99. The water-soluble binders of Misselbrook are a key feature of that publication. The binding agent lactose is included in Misselbrook's "[p]referred," "[m]ore preferred," "[e]ven more preferred," and "[e]specially preferred" formulations. Ex. 1005, 3:61-4:28.

100. Misselbrook states that the disclosed formulations afford "relatively hard non-dusty granules," consistent with the advantages reported in Knowles for including a binding agent. Ex. 1005, 2:30; Ex. 1024, 62-68.

101. Misselbrook does not provide any examples of a granule where a binding agent (e.g., lactose, sucrose, or glucose) is excluded. Misselbrook simply provides no scientific reason for preparing a granule without a binder.

102. In my opinion, Misselbrook would have discouraged a POSA from preparing the granule of claim 1, which does not include a binder.

103. As discussed below, neither CN '588 nor JP '902 provide any teaching, suggestion, or motivation for *removing* Misselbrook's water-soluble binder.

g. CN '588

104. CN '588 does not report the preparation of *granules* containing acephate. Rather, embodiments of CN '588 are “wetable powder” formulations. Ex. 1007, 6.

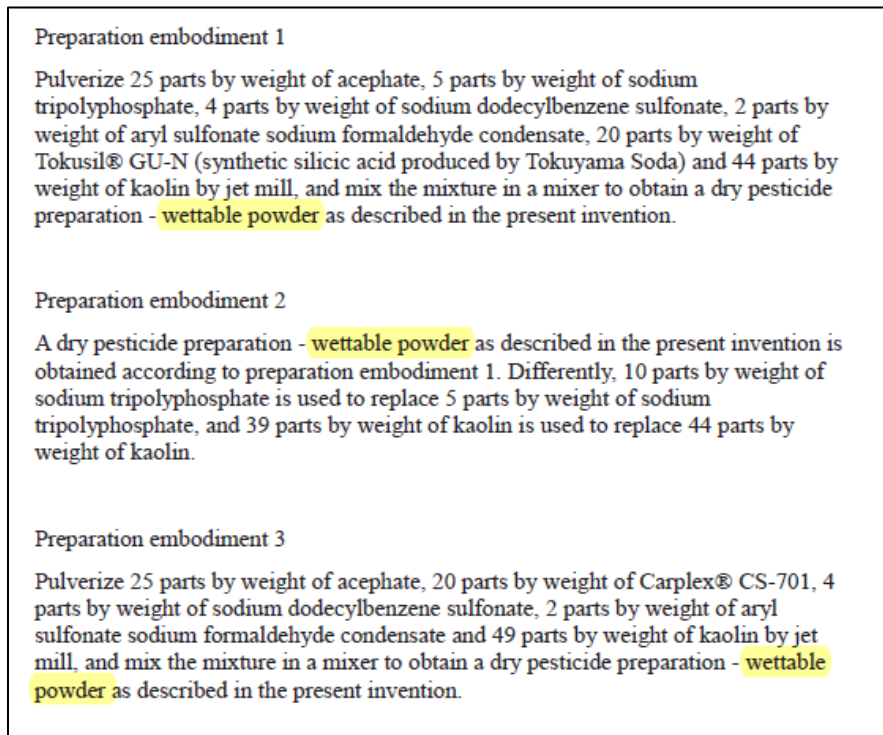


Figure 4. Ex. 1007, 6, highlighted.

105. CN '588 thus does not provide any teaching on the appropriate excipients to include in *granules* containing acephate.

106. Nevertheless, CN '588 does not discourage the use of binders in any formulation. For example, CN '588 suggests incorporating “solid carriers” in pesticide formulations and provides a laundry list of excipients that includes binders such as sucrose and starch. Ex. 1007, 5.

107. In short, CN '588 provides no motivation to remove the binders of Misselbrook.

h. JP '902

108. Like Misselbrook, JP '902 highlights the importance of binders in pesticide granules. Ex. 1009, [0011].

109. JP '902 discloses that “[i]ncluding a water-soluble binder improves the granule strength of pesticide granules of the present invention without undermining disintegration and dispersibility in water.” *Id.* at [0011].

110. JP '902 discloses that water-soluble binders such as glucose and sucrose are preferred. Ex. 1009, [0011].

111. JP '902 also discloses formulations containing lactose, a binding agent. *E.g.*, Ex. 1009, [0018]. While JP '902 does not characterize lactose as a binding agent, a POSA would have understood that lactose assists in the binding of particles together in a formulation, i.e., it is a binding agent. The similar properties and structures of sucrose and lactose (*see* Fig. 3) further show that they would all have been expected to assist with binding particles together in a formulation.

112. All examples in JP '902 all contain binders.³ For example:

- Reference Example 4 contains 95 parts acephate, 1 part dextrin, and 3.4 parts lactose (4.4 parts binder). *Id.*, [0018].
- Example 6 contains 95 parts acephate in combination with 4.2% lactose, a binder. *Id.*, [0024].
- Example 7 contains 50 parts acephate and 47.4 parts lactose, a binder. *Id.*, [0025].
- Example 9 contains 75 parts acephate and 21.4 parts lactose, a binder. *Id.*, [0027].

113. Thus, JP '902 reinforces the teaching of Misselbrook that water-soluble binders should be included in pesticide granules.

i. Conclusion

114. I conclude that the combination of Misselbrook, CN '588, and JP '902 would not have rendered obvious the granule of claim 1, which does not contain a binding agent.

³ JP '902 generally refers to a process to prepare granules in which a binder was not required; however, the product prepared by that process “has poorer disintegration in water and dispersibility in water.” Ex. 1009, [0014].

2. Misselbrook, JP '902, and CN '588 would not have rendered obvious the granule of claim 1 containing 0.01-1% stabilizer.

a. Introduction

115. Claim 1 of the '685 patent requires 0.01-1% stabilizer. Ex. 1001, claim 1. Tide does not provide any legitimate reason why the combination of Misselbrook, CN '588, and JP '902 would have rendered obvious the claimed granule containing 0.01-1% stabilizer.

116. Tide argues that a "POSITA would know acephate may decompose under changed storage conditions as compared to other organophosphorus compounds, and that adding a 'stabilizer' could avoid such decomposition." Petition, 28-29. Tide further argues "a POSITA would undertake routine tests and experimentation to optimize the workable range of the 'stabilizer,' such as accelerated aging tests to determine how the granule's properties change after storage." Petition, 29. Tide's references undermine its argument.

b. Misselbrook

117. Misselbrook mentions the possibility of adding a stabilizer but does not identify any excipients as stabilizers, and further does not suggest any amount of a stabilizer to use. Ex. 1005, 6:55-56 ("the instant pesticidal compositions may also appropriately contain stabilizers, synergists, coloring agents, etc."). Misselbrook does not disclose any granule containing acephate, much less

acephate in combination with 0.01-1% stabilizer. Ex. 1005. In fact, none of Misselbrook's examples contain any excipient identified as a stabilizer. Misselbrook thus provides no motivation to include 0.01-1% stabilizer in an acephate granule.

c. CN '588

118. CN '588 does not provide any motivation to add 0.01-1% stabilizer to a granule containing acephate. Tide states that "CN '588 teaches 'condensed sodium phosphate for stabilizing acephate' at 'generally 0.01 to 10 parts by weight' and 'preferably 0.05 to 1 part by weight.'" Petition at 28.

119. CN '588 provides no motivation or scientific reason for selecting a stabilizer at or near the low end of the disclosed range. In fact, CN '588 shows that even when used in amounts that greatly exceed 1% by weight, the purported stabilizers in CN '588 failed to prevent the decomposition of acephate. Ex. 1007, 6-8. In particular, preparation embodiments 1-3 of CN '588 contained 25 parts acephate to 20 to 30 parts of the purported stabilizers disclosed therein:

- Preparation embodiment 1: 25 parts by weight acephate with 25 parts stabilizer (5 parts sodium tripolyphosphate plus and 20 parts synthetic silicic acid, Tokusil GU-N) (*id.*, 6);

- Preparation embodiment 2: 25 parts by weight acephate with 30 parts stabilizer (10 parts sodium tripolyphosphate plus 20 parts synthetic silicic acid, Tokusil GU-N) (*id.*); and
- Preparation embodiment 3: 25 parts by weight acephate with 20 parts stabilizer (synthetic silicic acid with alkylsilylated silanol groups, Carplex CS-701) (*id.*).

120. Even in the presence of about a 1:1 ratio of acephate to stabilizer, the as-formulated acephate was not chemically stable, as reported in Tables 1-3 showing the results of accelerated aging tests, as shown in Figure 5.

Table 1		
Tested preparation	Decomposition rate (%)	
	40 °C	
	After 1 month	After 3 months
Preparation embodiment 1	0	16
Preparation embodiment 2	1	13
Control preparation embodiment 1	4	31

Table 2		
Tested preparation	Decomposition rate (%)	
	50 °C	
	After 2 weeks	After 1 month
Preparation embodiment 1	3	26
Preparation embodiment 2	2	20
Control preparation embodiment 1	15	44

Table 3		
Tested preparation	Decomposition rate (%)	
	50 °C	
	After 2 weeks	After 1 month
Preparation embodiment 3	1	8
Control preparation embodiment 2	6	33

Figure 5. Tables 1-3 of CN '588. Ex. 1007, 7-8.

121. A POSA would not have been motivated to use 0.01-1% stabilizer in a formulation containing acephate based on CN '588, as the stabilizers of CN '588 failed to prevent decomposition of acephate even when present at 20-30% by weight of the formulation.

122. Moreover, CN '588 undermines Tide's notion that a POSA would somehow "optimize" the level of stabilizer to 0.01-1% based on accelerated aging tests. *See* Petition, 29. CN '588 is the only publication cited by Tide that reports

conducting tests such as accelerated aging on acephate formulations, and the results do not suggest that 0.01-1% stabilizer was optimal. There is simply no suggestion in any of the art cited by Tide that a POSA would optimize the level of stabilizer to 0.01-1%.

d. JP '902

123. JP '902 does not provide any reason to expect that a POSA would optimize the level of stabilizer to 0.01-1%. In JP '902, Tide points to “[p]hosphoric acid” as a purported stabilizer, arguing that JP '902 disclosed “using ‘0.3 parts phosphoric acid’ to prepare granules containing 25% acephate.” Petition, 28 (citing Ex. 1009, [0020]).

124. Tide’s selection of 0.3% phosphoric acid is not based on science and appears to be an attempt to locate the limitations of the claims of the '685 patent in the prior art.

125. JP '902 does not disclose phosphoric acid as a stabilizer for acephate. None of the granules of JP '902 that contain acephate as the only active ingredient include this agent. Ex. 1009, [0018], [0024], [0027]. For example, JP '902 provides examples containing 75% and 95% acephate, and these examples do not include phosphoric acid, much less 0.3% phosphoric acid. *Id.*

126. By contrast, all granules in JP '902 that contain phosphoric acid include Cartap Hydrochloride (a different active ingredient). Ex. 1009, [0020],

[0022], [0023]. A POSA would not have focused on an example containing Cartap Hydrochloride plus 25% acephate when selecting the amount of stabilizer to use in a granule containing 85-98% acephate.

127. JP '902 thus does not teach 0.3% phosphoric acid as a stabilizer for acephate granules. As a result, JP '902 would not have motivated a POSA to include 0.01-1% stabilizer (e.g., 0.3% phosphoric acid, *see* Petition, 28) into an acephate granule.

128. In summary, none of Tide's references provide any scientific rationale for including 0.01-1% stabilizer in a granule containing 85-98% acephate.

129. Tide's argument that a POSA would have arrived at 0.01-1% stabilizer through "routine tests and experimentation to optimize the workable range of the 'stabilizer,' such as accelerated aging tests" has no basis in reality. *See* Petition, 29. None of the art cited by Tide indicates that including 0.01-1% stabilizer in a granule containing acephate provides chemical stability. CN '588 shows the opposite: even levels of 20-30% stabilizer failed to prevent decomposition of acephate during accelerated aging tests, which are the type of tests that Tide argues a POSA would perform to "optimize" the level of stabilizer. Ex. 1007, 6-8; Petition, 29.

3. Improper Hindsight

130. Tide appears to have selectively plucked disclosures from the prior art to cobble together a granule meeting the requirements of claim 1 of the '685 patent. There is no scientific rationale for making all the selections identified in Tide's petition.

a. A POSA would not have looked to Misselbrook for guidance on preparing granules containing a high level of acephate.

131. I disagree that a POSA would have selected Misselbrook as the starting point for developing granules containing a high level of acephate.

132. Misselbrook does not contain any working examples of granules containing acephate, even at low levels. Misselbrook's examples all contain emamectin benzoate. Ex. 1005, 9:20-12:25.

133. Misselbrook repeatedly discloses emamectin benzoate as the preferred, more preferred, even more preferred, and especially preferred pesticide. Ex. 1005, 3:44-51, 3:61-67, 4:1-18, 4:26-32.

134. Misselbrook mentions emamectin benzoate nearly 80 times. Ex. 1005, *passim*. By contrast, Misselbrook mentions acephate among a list twelve pesticides, and in the same passage, reiterates that emamectin is "particularly preferred." Ex. 1005, 5:32-43.

135. Even for emamectin benzoate, Misselbrook did not disclose how to prepare granules containing 85-98% pesticide. Ex. 1005, 9:20-12:25.

Misselbrook's examples and claims are limited to—at most—60% emamectin benzoate.

136. Next, a POSA would have considered Misselbrook's process unsuitable for acephate, as it requires mixing acephate with a substantial amount of water (10-14%) during manufacture. See, e.g., Example 1, col. 9:63 (14% water for pilot scale batch), col. 10:33 (10-12.5% water for larger scale batch). A POSA would have expected that if acephate were used in Misselbrook's process, the result would be a sticky, agglomerated mess (as opposed to granules). A POSA would also have expected that acephate would decompose during manufacture using Misselbrook's process.

137. Misselbrook does not teach or suggest any way to overcome the known difficulties of preparing granules containing a high level of acephate, including ways to handle acephate's relatively low melting point, instability in the presence of water, and tendency to agglomerate. *See supra*, Section VII.A.

138. In short, Misselbrook would not have been a scientifically valid springboard for developing granules containing 85-98% acephate.

b. The combination of Misselbrook, CN '588, and JP '902 would not have motivated a POSA to prepare a granule containing the excipients of claim 1.

139. Even assuming a POSA would have looked to Misselbrook as the starting point for development, Tide's references do not teach any granule containing the five excipients—and only the five excipients—recited in claim 1 of the '685 patent.

140. A POSA would need to make the numerous specific choices not taught by Tide's references to arrive at the granule of claim 1, including:

1. Select acephate, despite (a) Misselbrook disclosure that emamectin benzoate was preferred, more preferred, and especially preferred pesticide (*see* Ex. 1005, 3:44-51, 3:61-67, 4:1-18, 4:26-32); (b) Misselbrook's disclosure of the advantages of using emamectin benzoate against numerous pests (Ex. 1005, 7:56-8:67); and (c) the issues with chemical stability of acephate reflected in CN '588 (Ex. 1007, 7-8 (Tables 1-3));
2. Select a high level of acephate, contrary to Misselbrook's teaching that lower levels of pesticide were preferred, more preferred, and especially preferred (*see* Ex. 1005, 3:44-51, 3:61-67, 4:1-18, 4:26-32);
3. Choose *not* to use a binder, contrary to (a) Misselbrook and JP '902 (*see supra*, Section X.A.1); and (b) the motivation of a POSA to

prepare a non-dusty granule and the general knowledge in the art that binders reduce dustiness (*e.g.*, Ex. 1024, 62-68);

4. Choose to use *five total excipients*, despite the purported motivation of a POSA to reduce manufacturing costs;
5. Choose to use separate wetting and dispersing agents, despite the purported motivation of a POSA to reduce manufacturing costs and the use of a single surfactant in JP '902 (*e.g.*, Ex. 1009, [0024], [0027]);
6. Choose to include 0.01-0.08% antifoaming agent instead of selecting a low-foaming surfactant such as NEWPOL PE-64 (taught in JP '902), despite the purported motivation of a POSA to reduce manufacturing costs (*see* Petition at 27) (*see generally* Ex. 2009, 2 (NEWPOL PE-64 is a “low-foaming” surfactant that “effectively lower[s] surface tension of emulsions”); Ex. 1009, [0027]);
7. Choose to include 0.01-1% stabilizer, contrary to CN '588—the sole reference relied on by Tide that purports to identify a stabilizer for acephate—which demonstrated that much high levels of stabilizer failed to prevent the decomposition of acephate; and despite the teaching of JP '902, which did not include the purported stabilizers described therein in any granule containing acephate as the only active

ingredient; and with no suggestion in the art that a POSA would “optimize” the level of stabilizer to 0.01-1% (as suggested by Tide, Petition, 28-29);

8. Decide to exclude other agents suggested by Misselbrook, CN '588, and or JP '02, including synergists, coloring agents, preservatives, extenders, and other active ingredients (*see* Ex. 1005, 6:55-57 (synergists, coloring agents); Ex. 1007, 5 (suggesting adding “other insecticidal active ingredients, such as synthetic pyrethrin compounds, like Fenpropathrin, Fenvalerate, and S-fenvalerate”); Ex. 1009, [0009] (colorants, preservatives, and extenders)).

141. There were numerous options available in the art, and Tide has not shown a scientifically legitimate path that would have led a POSA to develop the granule of claim 1.

B. Claims 2-4

142. Claims 2-4 of the '685 patent depend from claim 1 and further specify the type of dispersing agent (claim 2), wetting agent (claim 3), and antifoaming agent (claim 4). These claims all require the same elements as claim 1 of the '685 patent. I conclude claims 2-4 would not have been obvious for the same reasons as claim 1, *see* Section X.A.

C. Claim 7

- 1. Misselbrook, CN '588, and JP '902 would not have rendered obvious the granule of claim 7 containing 0.01-1% stabilizer.**

143. For the reasons discussed in paragraphs 115-129, Tide failed to show that Misselbrook, CN '588, and JP '902 would have rendered obvious the granule of claim 7 containing 0.01-1% stabilizer.

- 2. Misselbrook, CN '588, and JP '902 would not have rendered obvious the granule of claim 7 containing 0.1-3% binding agent.**

144. The combination of Misselbrook, CN '588, and JP '902 would not have provided any motivation or rationale for preparing the granule of claim 7 containing 0.1-3% binding agent. I incorporate by reference my discussion of binders in paragraphs 84-113 of my declaration.

a. Misselbrook

145. Misselbrook does not teach a granule containing 0.1-3% binding agent. Misselbrook teaches granules that contain 30-99.9% binder (e.g., sucrose, lactose, or glucose), preferably 40-99.9% lactose, more preferably 40-99% lactose, even more preferably 60-99% lactose, and especially preferred 86% lactose.

Ex. 1005, 3:34-39, 3:61-67, 4:1-16, 4:25-32. Misselbrook's examples all contain 41.4% to 94.6% sucrose, lactose, or glucose. Ex. 1005, 9:40-12:15.

146. There is no teaching, suggestion, or motivation in Misselbrook to select 0.1-3% binding agent. For example, nothing in Misselbrook suggests lowering the concentration of lactose, glucose, or sucrose to prepare a granule.

147. Tide argues that a POSA “would use routine tests . . . and experiments to optimize the workable range of binding agent.” Petition at 34. Tide’s own references undermine this argument, as the sole publication (JP ’902) describing granules containing 85-98% acephate employs over 4% binding agent (Ex. 1009, [0018] (4.4% binder), [0024] (4.2% binder)), and Knowles shows that increasing the binding agent from 3% to 4.5% significantly reduces granule dustiness from 3.5 to 2 mg/g (Ex. 1024, 67). As Knowles explained, “[t]he quantity of dust which is being measured in this type of experiment is usually very small, say 0.1 % w/w of the overall formulation. Adding large quantities of binder in order to tie down this small fraction of particles seems excessive but it is, of course, very important for safety reasons.” Ex. 1024 at 67-68; *see supra*, Figure 2.

b. CN ’588

148. CN ’588 does not inform the analysis. While CN ’588 mentions binding agents among a laundry list of solid carriers, the examples in CN ’588 are wettable powders. Ex. 1007 at 5, 6. CN ’588 simply does not provide any rationale for modifying Misselbrook as Tide proposes.

c. JP '902

149. JP '902 does not disclose 0.1-3% binding agent. At most, like Misselbrook, JP '902 teaches the use of binding agents in amounts that exceed the range of claim 7. For example:

- Reference Example 4 (Granules D) contain 95% acephate and 4.4% binder (1% dextrin and 3.4% lactose). Ex. 1009, [0018].
- Example 6 (Granules J) contains 95% acephate and 4.2% binding agent (lactose). Ex. 1009, [0024].
- Example 9 (Granules M) contains 75% acephate and 22.4% binding agent (1% dextrin and 21.4% lactose). Ex. 1009, [0027].

150. These examples all contain binding agents at levels that exceed the range permitted by claim 7, which recites “0.1 to 3% w/w a binding agent.”

151. Tide did not argue that art disclosing over 4% binding agent rendered obvious claims requiring 0.1-3% binding agent. Petition, 34. Instead, Tide argues a POSA would have selected 1% dextrin as a binder as a starting point based on Reference Example 4 and Example 9 of JP '902. Petition, 34 (citing Ex. 1009, [0018] and [0027]). But Reference Example 4 also contains 3.4 parts lactose, and Example 9 contains 21.4 parts lactose. Ex. 1009, [0018], [0027]. Notably, dextrin is not included at all in Example 6, which contains 95% acephate and 4.2 parts lactose as the binding agent. *Id.*

152. A POSA would have considered Example 6 the most pertinent example of JP '902 when seeking to develop a granule containing 85-98% acephate, as it is the only purportedly inventive example of JP '902 containing that acephate within that range. By contrast, Reference Example 4—cited by Tide—exhibited extensive agglomeration. Ex. 1009, [0018], [0031]. And Example 9, also cited by Tide, contained only 75% acephate. Ex. 1009, [0027]. Tide's focus on 1% dextrin thus appears to be based on hindsight.

153. There is no scientific rationale for selecting 1% binding agent as starting point for developing a granule formulation. As noted above, in JP '902, the examples containing 95% or 75% acephate contain over 4% binding agent, above the range recited in claim 7. This is consistent with the data in Knowles demonstrating that increasing the level of binder from 3% to 4.5% substantially reduces granule dustiness. Ex. 1024, 66-67.

3. Misselbrook, CN '588, and JP '902 would not have rendered obvious the granule of claim 7 containing a disintegrating agent.

154. Misselbrook does not teach incorporating a disintegrating agent into any granule, much less an acephate granule. Misselbrook disclosed granules that consisted primarily of a water-soluble pesticide (preferably emamectin benzoate), a water-soluble binder (preferably sucrose, lactose, or glucose), and *no* disintegrating agent. *See* Ex. 1005, 2:67-3:2, 3:45-4:32, 9:41-12:15.

155. Similarly, JP '902 disclosed that granules containing water-soluble pesticides, water-soluble binders, and *no* disintegrating agent. Ex. 1009, [0024], [0027]. JP '902 disclosed that the granules of the invention had acceptable disintegrating properties when mixed with water, i.e., no disintegrating agent was required. Ex. 1009, [0031]. The disintegration results in JP '902 are included below for reference, where Granules A through D correspond to Reference Examples 1-4, and Granules E through M correspond to Examples 1-9.

{Evaluation Method}

- The pot was tipped and no caking was observed.
- + The pot was tipped and caking was observed, but the caking readily disintegrated with light tapping. Alternatively, masses of less than 5 mm were observed.
- ++ The pot was tipped, caking was observed, and about half disintegrated with light tapping. Alternatively, masses of 5 mm or more were observed.
- +++ The pot was tipped, caking was observed, and most did not disintegrate even after vigorous tapping.

The results from Test Examples 1 to 3 are shown in Table 1.

[0031]

[Table 1]

Results of Testing Formulations for Disintegration in Water,
Dispersibility in Water, and Caking

Example	Disintegration in Water	Dispersibility in Water	Caking
Granules A	A	0	++
Granules B	B	5	++
Granules C	A	1	++
Granules D	A	1	+++
Granules E	A	1	-
Granules F	A	1	-
Granules G	A	0	-
Granules H	A	1	-
Granules I	A	1	-
Granules J	A	0	-
Granules K	A	0	-
Granules L	A	1	-
Granules M	A	1	-

It is clear from Table 1 that the granular water-soluble powders of the present invention have excellent disintegration in water, dispersibility in water, and caking properties.

Figure 6. Ex. 1009, [0031].

156. Based on at least JP '902, a POSA not have perceived any benefit to adding a disintegrating agent to Misselbrook's granules. Misselbrook's granules are similar to those disclosed in JP '902, e.g., they incorporate a water-soluble pesticide, water-soluble binder, and no disintegrant. Ex. 1005, 2:67-3:2, 3:45-4:32,

9:41-12:15. Like the granules in JP '902, a POSA would have expected that a disintegrating agent would not be required to achieve acceptable dissolution of the granular ingredients.

157. A POSA thus would not have had any scientific rationale to add a disintegrating agent to Misselbrook's water-soluble granules.

158. Tide repeatedly argues that a POSA would have been motivated by to reduce costs by increasing the acephate concentration and reducing the amounts of other excipients. Petition, 6 ("most pesticide formulations sought to increase the active ingredient concentration—thereby decreasing manufacturing costs."); *id.*, 21 ("To allay the costs of granulation, a POSITA would aim for higher acephate concentrations to reduce manufacturing costs."); *id.*, 27 (arguing a POSA would be motivated to include the smallest amount needed of an antifoaming agent because of their cost). Consistent with Tide's theme of efficiency and reducing costs, a POSA would not seek to add an extra ingredient such as a disintegrating agent when it was not required.

159. For completeness, I note that CN '588 does not provide any motivation or rationale for adding a disintegrating agent to Misselbrook. While CN '588 mentions disintegrating agents among a laundry list of solid carriers, the examples in CN '588 do not contain a disintegrant, and CN '588 does not disclose

any benefit of adding a disintegrant in a granular formulation. Ex. 1007 at 5, 6.

Indeed, as noted above, CN '588 focuses on wettable powders, not granules.

160. Tide argues that a “POSITA, by 2001 would know the need for disintegrating agents varies based on a granule’s compactness and ingredients, and that adding a binding agent may require adding a disintegrating agent to assist granule dissolution.” Petition at 36.

161. As explained above, the art cited by Tide taught that granules such as those in Misselbrook and JP '902 did not require a disintegrating agent:

- Misselbrook discloses granules containing high levels of binding agents (e.g., sucrose, lactose, or glucose), with no disintegrating agent.
- JP '902 discloses examples containing at least 4% binding agent (e.g., lactose), with no disintegrating agent. Ex. 1009, [0024], [0027].

162. For at least these reasons, I conclude that the combination of Misselbrook, CN '588, and JP '902 would not have rendered obvious claim 7 of the '685 patent.

4. Improper Hindsight

163. As with claim 1, Tide appears to have selectively plucked disclosures from the prior art to cobble together a granule meeting the requirements of claim 7 of the '685 patent. There is no scientific rationale for making all the selections identified in Tide’s petition.

164. First, for the reasons discussed in paragraphs 131-38, I disagree that a POSA would have selected Misselbrook as the starting point for developing granules containing a high level of acephate.

165. Even assuming a POSA would have looked to Misselbrook as the starting point for development, Tide's references do not teach any granule containing the seven excipients—and only the seven excipients—recited in claim 7 of the '685 patent.

166. A POSA would need to make the numerous specific choices not taught by Tide's references to arrive at the granule of claim 1, including:

1. Select acephate, despite (a) Misselbrook's disclosure that emamectin benzoate was preferred, more preferred, and especially preferred pesticide (*see* Ex. 1005, 3:44-51, 3:61-67, 4:1-18, 4:26-32); (b) Misselbrook's disclosure of the advantages of using emamectin benzoate against numerous pests (Ex. 1005, 7:56-8:67); and (c) the issues with chemical stability of acephate reflected in CN '588 (Ex. 1007, 7-8 (Tables 1-3));
2. Select a high level of acephate, contrary to Misselbrook's teaching that lower levels of pesticide were preferred, more preferred, and especially preferred (*see* Ex. 1005, 3:44-51, 3:61-67, 4:1-18, 4:26-32);

3. Select 0.1-3% binder, despite the fact that *none* of Tide's references disclose a granule containing 0.1-3% binder; contrary to JP '902, which teaches a granule containing 95% acephate and 4.2% binding agent (Ex. 1009, [0024]; and contrary to the art teaching that around 4.5% binding agent significantly reduces dustiness, thereby improving worker safety (Ex. 1024, 62-68);
4. Choose to add a disintegrant, contrary to Misselbrook (binder only) and JP '902 (binder only) (*see supra*, paragraphs 154-62);
5. Choose to use *seven total excipients*, despite the purported motivation of a POSA to reduce manufacturing costs;
6. Choose to use separate wetting and dispersing agents, despite the purported motivation of a POSA to reduce manufacturing costs and knowledge of the use of a single surfactant in JP '902 (e.g., Ex. 1009, [0024], [0027]);
7. Choose to include 0.01-0.08% antifoaming agent instead of selecting a low-foaming surfactant such as Newpol PE-64 (taught in JP '902), despite the purported motivation of a POSA to reduce manufacturing costs (*see* Petition at 27) (*see generally* Ex. 2009, 2 (NEWPOL PE-64

is a “low-foaming” surfactant that “effectively lower[s] surface tension of emulsions”); Ex. 1009, [0027]);

8. Choose to include 0.01-1% stabilizer, contrary to CN '588—the sole reference relied on by Tide that purports to identify a stabilizer for acephate—which demonstrated that much high levels of stabilizer failed to prevent the decomposition of acephate; and despite the teaching of JP '902, which did not include the purported stabilizers described therein in any granule containing acephate as the only active ingredient; and with no suggestion in the art that a POSA would “optimize” the level of stabilizer to 0.01-1% (as suggested by Tide, Petition, 28-29);
9. Decide to exclude other agents suggested by Misselbrook, CN '588, and or JP '02, including synergists, coloring agents, preservatives, extenders, and other active ingredients (*see* Ex. 1005, 6:55-57 (synergists, coloring agents); Ex. 1007, 5 (suggesting adding “other insecticidal active ingredients, such as synthetic pyrethrin compounds, like Fenprothrin, Fenvalerate, and S-fenvalerate”); Ex. 1009, [0009] (colorants, preservatives, and extenders)).

167. For this additional reason, I conclude that claim 7 would not have been obvious over Misselbrook, CN '588, and JP '902.

D. Claims 8-12

168. Claims 8-12 of the '685 patent depend from claim 1 and further specify the type of dispersing agent (claim 8), wetting agent (claim 9), binding agent (claim 10), antifoaming agent (claim 11), and stabilizer (claim 12). These claims all require the same elements as claim 7 of the '685 patent. I conclude claims 8-12 would not have been obvious for the same reasons as claim 7, *see* Section X.C.

XI. Ground 2: Misselbrook and Mayer in view of CN '588

A. Claim 1

1. The proposed combination would have led a POSA to develop granules containing excipients excluded from claim 1, including a binding agent.

169. Claim 1 of the '685 patent recites a granule “consisting of” acephate, a dispersing agent, a wetting agent, an antifoaming agent, a stabilizer, and fillers, in the following amounts:

- (i) 85-98% w/w acephate;
- (ii) 0.1-5.0% w/w a dispersing agent;
- (iii) 0.1-3% w/w a wetting agent;
- (iv) 0.01-0.08% w/w an antifoaming agent;

(v) 0.01-1% w/w a stabilizer and

(vi) fillers to make 100%.

Ex. 1001, claim 1.

170. Claim 1 does not recite a “binding agent.” The “consisting of” language in claim 1 indicates that no other ingredients, and no ingredients outside the claimed ranges, are included in the granule. In other words, claim 1 recites a granule that does not include any amount of a binding agent.

171. The art would have discouraged a POSA from attempting to prepare the granule of claim 1, which does not include a binding agent.

172. First, Tide admits that Misselbrook, Mayer, and CN '588 would have motivated a POSA to include a binding agent in a granule. Petition at 49-50. Tide's petition and Mr. Geigle's declaration do not explain how the combination of Misselbrook, Mayer, and CN '588 would result in a granule that does *not* contain a binding agent, e.g., a granule that contains only the ingredients recited in claim 1 of the '685 patent.

173. Tide selected Misselbrook as the purported starting point for developing granules containing a high level of acephate. *E.g.*, Petition, 41 (“POSITA in 2001 would be motivated to look to Mayer and CN '588 to improve upon Misselbrook's soluble granules containing 0.1-90% acephate.”). As discussed in Ground 1, Misselbrook's granules contained a binding agent such as lactose,

sucrose, or glucose. *E.g.*, Ex. 1005, 3:2-3, 3:37, 3:44-51, 9:41-12:15. Misselbrook reported that the formulations disclosed therein—which all contained a binding agent—provided “non-dusty granules.” Ex. 1005, 2:30. I incorporate my discussion of binding agents in Ground 1 by reference. *See supra*, ¶¶ 84-113.

174. Tide failed to explain why a POSA would *remove* the binding agent from Misselbrook. *See* Petition, 39-51. As discussed in Ground 1, a POSA would have understood that binding agents reduce dustiness of granules and reducing dustiness of a formulation was considered an advantage for worker safety. *See supra*, ¶¶ 82-88; Ex. 1024, 62-68. As a result, the general knowledge of a POSA would have motivated the development of granules containing a binding agent.

175. Tide’s secondary references, Mayer and CN ’588, do not provide a reason to remove Misselbrook’s binding agent.

176. Indeed, Tide’s expert concedes that “Mayer does not discourage the use of a binding agent for use in acephate dry granule formulations.” Ex. 1003, ¶ 152. Tide notes that Mayer suggests adding ingredients not recited in claim 1, including agglomeration auxiliaries and viscosity controlling agents, and Tide argues that Mayer’s “agglomeration auxiliaries” and “viscosity controlling agents” include binding agents. Petition, 49. I agree that Mayer does not provide any reason to remove the binding agents from Misselbrook’s granules.

177. As for CN '588, that publication has little or no relevance to the appropriate excipients to include in *granules* containing acephate, because it focuses on formulations for wettable powders. Ex. 1007, 6. Nevertheless, CN '588 does not discourage the use of binding agents. For example, CN '588 suggests incorporating “solid carriers” in pesticide formulations and provides a laundry list of excipients that includes binders such as sucrose and starch. Ex. 1007, 5.

178. Thus, neither Mayer nor CN '588 provide any rationale for removing the binding agent of Misselbrook.

179. For at least this reason, Tide has not shown that Misselbrook, Mayer, and CN '588 would have rendered obvious the granule of claim 1 of the '685 patent.

2. Misselbrook, Mayer, and CN '588 would not have rendered obvious the granule of claim 1 containing 0.01-1% stabilizer.

180. Tide failed to show that Misselbrook, Mayer, and CN '588 would have rendered obvious the claimed granule containing 0.01 to 1% stabilizer.

181. As in Ground 1, Misselbrook mentions the possibility of adding a stabilizer but does not identify any excipients as stabilizers, and further did not suggest any amount of a stabilizer to use. Ex. 1005, 6:55-56 (“the instant pesticidal compositions may also appropriately contain stabilizers, synergists, coloring

agents, etc.”). Misselbrook thus provides no motivation to include 0.01-1% stabilizer. *See supra*, ¶ 117.

182. Mayer similarly provides no motivation to add 0.01-1% stabilizer to Misselbrook’s granule. At most, Mayer suggests that formulations may include “5 to 50% by weight of one or more dispersants, agglomeration auxiliaries, one or more wetting agent, one or more disintegrants and/or one or more stabilizers.” Ex. 1010, 4:53-55. Mayer thus proposes optionally including one or more stabilizers at, e.g., 5 to 50 times the maximum amount permitted by claim 1 (0.01-1% by weight stabilizer). *See* Ex. 1001, claim 1.

183. As explained in Ground 1, CN ’588 does not provide any motivation for adding 0.01-1% stabilizer to a granule containing acephate. *See supra*, ¶ 118. As explained above, the stabilizers of CN ’588 failed to prevent decomposition of acephate even when present at about a 1:1 ratio to acephate. I incorporate by reference my discussion at paragraphs 118-122 of my declaration.

184. Tide argues that “[i]n addition to a POSITA’s knowledge of acephate’s tendency to decompose in changed storage conditions, motivation to achieve higher acephate concentrations, and motivation to look to Mayer and CN ’588 to improve upon Misselbrook, a POSITA would use CN ’588’s disclosed ranges of a stabilizer as a starting point to conduct tests (e.g., accelerated aging) and experiments to optimize the workable range of the stabilizer.” Petition, 46.

185. Tide’s argument that a POSA would somehow arrive at 0.1-1% stabilizer based on tests such as “accelerated aging” has no merit. *See* Petition, 46. Contrary to Tide, there is simply no reason to expect a POSA would have optimized the level of stabilizer to 0.01-1% based on tests such as “accelerated aging.” Petition, 46; *supra*, ¶¶ 116-129.

186. For example, Misselbrook and Mayer fail to disclose any granule containing acephate, much less provide a workable solution to acephate’s tendency to decompose. While CN ’588 attempted to prepare a chemically stable formulation containing acephate, the data show that attempt failed, even when using one or more stabilizers about a 1:1 ratio to acephate. Ex. 1007, 6-8. CN ’588 thus undermines Tide’s argument that a POSA would have optimized the level of stabilizer to 0.01-1%.

187. I conclude that Tide failed to show that a POSA would have been motivated to prepare the claimed granule containing 0.01-1% stabilizer based on Misselbrook, Mayer, and CN ’588.

3. Improper Hindsight

a. Introduction

188. Tide appears to have selectively plucked disclosures from the prior art to cobble together a granule meeting the requirements of claim 1 of the ’685

patent. There is no scientific rationale for making all the selections identified in Tide's petition.

189. As set forth in Ground 1, a POSA would not have looked to Misselbrook for guidance on developing a granule containing a high level of acephate. *Supra*, ¶¶ 131-38.

b. A POSA would not have looked to Mayer for guidance on preparing granules containing a high level of acephate.

190. A POSA would not have looked to Mayer for guidance on preparing granules containing 85-98% acephate.

191. First, Mayer fails to mention acephate at all among the 100+ pesticides disclosed therein, despite the fact that acephate was commercially available at the time Mayer was filed. Mayer provides extensive lists of fungicides, herbicides, and other active ingredients that may be used in the formulations described therein, as shown in Figure 7. Ex. 1010, 2:21-3:53.

Preferred fungicides for use in the compositions of the present invention are the commercially available compounds selected from the group consisting of:

anilazine, azoxystrobin, benalaxyl, benomyl, binapacryl, bitertanol, blastidicin S, Bordeaux mixture, bromuconazole, bupirimate, captafol, captan, carbendazim, carboxin, carpropamid, chlorbenzhiazon, chlorothalonil, chlozolinate, copper-containing compounds such as copper oxychloride, and copper sulfate, cycloheximide, cymoxanil, cypofuram, cyproconazole, cyprodinil, dichlofluanid, dichlone, dichloran, dichlobutrazol, diclocymet, diclomezine, diethofencarb, difenoconazole, diflumetorim, dimethirimol, dimethomorph, diniconazole, dinocap, ditalimfos, dithianon, dodemorph, dodine, edifenphos, epoxiconazole, etaconazole, ethirimol, etridiazole, famoxadone, fenapanil, fenarimol, fenbuconazole, fenfuram, fenhexamid, fenpiclonil, fenpropidin, fenpropimorph, fentin, fentin acetate, fentin hydroxide, ferimzone, fluazinam, fludioxonil, flumetover, fluquinconazole, flusilazole, flusulfamide, flutolanil, flutriafol, folpet, fosetyl-aluminium, fuberidazole, furalaxyl, furametpyr, guazatine, hexaconazole, imazalil, iminocadine, ipconazole, iprodione, isoprothiolane, kasugamycin, kitazin P, kresoxim-methyl, mancozeb, maneb, mepanipyrim, mepronil, metalaxyl, metconazole, methfuroxam, myclobutanil, neoasozin, nickel dimethyldithiocarbamate, nitrothalisopropyl, nuarimol, ofurace, organo mercury compounds, oxadixyl, oxycarboxin, penconazole, pencycuron, phenazineoxide, phthalide, polyoxin D, polyram, probenazole, prochloraz, procyimidione, propamocarb, propiconazole, propineb, pyrazophos, pyrifenoxy, pyrimethanil, pyroquilon, pyroxyfur, quinomethionate, quinoxifen, quinterozone, spiroxamine, SSF-126, SSF-129, streptomycin, sulfur, tebuconazole, teclofalame, tecnazene, tetraconazole, thiabendazole, thifluzamide, thiophanate-methyl, thiram, toiclofomethyl, tolylfluanid, triadimefon, triadimenol, triazbutil, triazoxide, tricyclazole, tridemorph, triflumizole, triforine, triticonazole, validamycin A, vinclozolin, XRD-563, zarilamid, zineb, ziram.

Ex. 1010, 2:21-64

In addition, the formulations according to the invention may contain at least one compound of the following classes of biological control agents such as viruses, bacteria, nematodes, fungi, and other microorganisms which are suitable for the control of insects, weeds or plant diseases, or to induce host resistance in the plants. Examples of such biological control agents are: *Bacillus thuringiensis*, *Verticillium lecanii*, *Autographa californica* NPV, *Beauveria bassiana*, *Ampelomyces quisqualis*, *Bacillus subtilis*, *Pseudomonas fluorescens*, *Steptomyces griseoviridis* and *Trichoderma harzianum*.

Moreover, the formulations according to the invention may contain at least one chemical agent that induces the systemic acquired resistance in plants such as, for example, nicotinic acid or derivatives thereof, 2,2-dichloro-3,3-dimethylpropylcarboxylic acid or BION.

Also preferred compositions can include derivatives of triazolopyrimidines which are disclosed, for example, by European patent application EP-A-0 550 113.

Another group of preferred fungicidal compounds are the benzoylbenzenes which are disclosed, for example, by European patent application EP-A-0 727 141.

Ex. 1010, 2:65-3:18

Preferred herbicides are the commercially available compounds selected from the group consisting of:

2,4-D, 2,4-DB, 2,4-DP, acetochlor, acifluorfen, alachlor, aloxlydim, ametrydione, amidosulfuron, asulam, atrazin, azimsulfuron, benfuresate, bensulfuron, bentazon, bifenox, bromobutide, bromoxynil, butachlor, cafenstrole, carfentrazone, chloridazon, chlorimuron, chlorpropham, chlorsulfuron, chlortoluron, ciamethylin, cinosulfuron, elomazone, clopyralid, cyanazin, cycloate, cyclosulfamuron, cycloxydim, daimuron, desmedipham, di-methazone, dicamba, dichlobenil, diclofop, diflufenican, dimethenamid, dithiopyr, diuron, eptame, esprocarb, ethiozin, fenoxaprop, flumeturon, fluroxypyr, flurtamone, fluthiamid, fomesafen, glufosinate, glyphosate, halosafen, haloxyfop, hexazinone, imazamethabenz, imazamethapyr, imazamox, imazapyr, imazaquin, imazethapyr, ioxynil, isoproturon, isoxaben, isoxaflutole, lactofen, MCPA, MCPP, mefenacet, metabenzthiazuron, metamitron, metazachlor, methidimiron, metolachlor, metribuzin, metsulfuron, molinate, nicosulfuron, norflurazon, oryzalin, oxadiargyl, oxasulfuron, oxyfluorfen, pendimethalin, picloram, pretilachlor, propachlor, propanil, prosulfocarb, pyrazosulfuron, pyridate, qinmerac, quinchlorac, quizalofopethyl, sethoxydim, simetryne, sulcotrione, sulfentrazone, sulfosate, terbutryne, terbutylazin, thiameturon, thifensulfuron, thiobencarb, tralkoxydim, triallate, trisulfuron, tribenuron, triclopyr, trifluralin.

Furthermore preferred are the derivatives of aryloxyphthalonitriles which are disclosed, for example, by European patent application EP-A-0 447 004, in particular, N-(4-fluorophenyl) 6-(3-trifluoromethylphenoxy)-pyrid-2-ylcarboxamide having the proposed common name picolin-fen.

Ex. 1010, 3:19-53

Figure 7. Excerpts of Mayer listing “preferred” fungicides (left), additional active agents (center), and “preferred” herbicides (right).

192. Mayer further identifies a handful of active ingredients as “preferred insecticides,” and acephate (an insecticide) is notably absent from the list, as shown below. Ex. 1010, 3:54-59.

Preferred insecticides are the commercially available compounds selected from the group consisting of:

pyrethroids such as deltamethrin, acrinathrin, tralomethrin, permethrin and cypermethrin, benzoylureas such as diflubenzuron and teflubenzuron, and active substances such as endosulfan and pirimicarb.

Ex. 1010, 3:54-59

Figure 8. Excerpt of Mayer listing “preferred insecticides.” Ex. 1010, 3:54-59.

193. Not only is acephate absent from Mayer’s list, it is not even in the same chemical class as any of Mayer’s preferred insecticides. Acephate is classified as an organophosphate insecticide. *See* Ex. 1012, 3. For comparison, Mayer lists only pyrethroids,⁴ benzoylureas,⁵ endosulfan (a dicyclodiene organochlorine insecticide⁶), and pirimicarb (a carbamate insecticide⁷).

⁴ *See* <https://pubchem.ncbi.nlm.nih.gov/compound/Pyrethrins-and-Pyrethroids>.

⁵ *See* <https://pubchem.ncbi.nlm.nih.gov/compound/Diflubenzuron>.

⁶ *See* <https://pubchem.ncbi.nlm.nih.gov/compound/Endosulfan>.

⁷ *See* <https://pubchem.ncbi.nlm.nih.gov/compound/Pirimicarb>.

194. Mayer discloses that particularly preferred solid formulations contain the herbicide picolinafen alone or in combination with cyanazine and/or pendimethalin. Ex. 1010, 5:53-56. Mayer's examples include fungicides, e.g., dimethomorph and mancozeb (example 1) and dimethomorph and dithianon (example 2) or herbicides, e.g., picolinafen alone or in combination with cyanazine. Ex. 1010, 8:61-14:28. Mayer does not describe any formulations containing any insecticide at all, much less acephate.

195. Tide argues that “[a]lthough Mayer does not explicitly name acephate as a ‘preferred insecticide,’ a POSITA would know that acephate falls squarely within” the broadly defined class of active ingredients that “are solid at room temperature.” Petition, 40, 41. I disagree. The vast majority of active ingredients are solid at room temperature, and the fact that acephate is a solid would not have singled it out from among the universe of solid pesticides described in Mayer.

196. A POSA would have considered Mayer's processes unsuitable for acephate, at least because Mayer's processes involve contacting a powder containing an active ingredient with substantial amounts of water during manufacture (20-30% w/w, 9:28-29), and acephate is not stable in the presence of water. Indeed, Mayer's granules contain 3%, 2.5% or about 2% water even after they are dried. Ex. 1010, 6:14-17, 9:28-45.

197. A POSA thus would not have looked to Mayer for guidance on formulating or preparing granules containing acephate.

c. The combination of Misselbrook, Mayer, and CN '588 would not have motivated a POSA to prepare a granule containing the excipients of claim 1.

198. Even assuming a POSA would have considered Misselbrook and Mayer instructive, Tide's references do not teach any granule containing the five excipients—and only the five excipients—recited in claim 1.

199. A POSA would need to make the numerous specific choices not taught by Tide's references to arrive at the granule of claim 1, including at least:

1. Select acephate, despite (a) Misselbrook disclosure that emamectin benzoate was preferred, more preferred, and especially preferred pesticide (*see* Ex. 1005, 3:44-51, 3:61-67, 4:1-18, 4:26-32); (b) Misselbrook's disclosure of the advantages of using emamectin benzoate against numerous pests (Ex. 1005, 7:56-8:67); (c) the issues with chemical stability of acephate reflected in CN '588 (Ex. 1007, 7-8 (Tables 1-3)); and (d) Mayer's omission of acephate from among the numerous preferred pesticides disclosed therein (Ex. 1010, 2:21-3:59);

2. Select a high level of acephate, contrary to Misselbrook's teaching that lower levels of pesticide were preferred, more preferred, and especially preferred (*see* Ex. 1005, 3:44-51, 3:61-67, 4:1-18, 4:26-32);
3. Choose *not* to use a binder, contrary to (a) Misselbrook (*see supra*, Section X.A.1); and (b) the motivation of a POSA to prepare a non-dusty granule and the general knowledge in the art that binders reduce dustiness (*e.g.*, Ex. 1024, 62-68);
4. Choose to use *five total excipients*, despite the purported motivation of a POSA to reduce manufacturing costs;
5. Choose to use separate wetting and dispersing agents, despite the purported motivation of a POSA to reduce manufacturing costs and the knowledge of a POSA that a single surfactant could be used (*e.g.*, Ex. 1009, [0024], [0027]);
6. Choose to include 0.01-0.08% antifoaming agent instead of selecting a low-foaming surfactant, despite the purported motivation of a POSA to reduce manufacturing costs (*see* Petition at 27) (*see generally* Ex. 2009, 2 (NEWPOL PE-64 is a "low-foaming" surfactant that

“effectively lower[s] surface tension of emulsions”); Ex. 1009, [0027]);

7. Choose to include 0.01-1% stabilizer, contrary to CN '588—the sole reference relied on by Tide that purports to identify a stabilizer for acephate—which demonstrated that much high levels of stabilizer failed to prevent the decomposition of acephate; and contrary to Mayer’s disclosure that stabilizers may optionally be present at 5-50% by weight (Ex. 1010, 4:53-55); and with no suggestion in the art that a POSA would “optimize” the level of stabilizer to 0.01-1% (as suggested by Tide, Petition, 46);
8. Decide to exclude other agents suggested by Misselbrook, Mayer, and CN '588, including synergists, coloring agents, preservatives, extenders, other active ingredients, disintegrants, thickeners, adhesives, and fertilizers (*see* Ex. 1005, 6:55-57 (synergists, coloring agents); Ex. 1007, 5 (suggesting adding “other insecticidal active ingredients, such as synthetic pyrethrin compounds, like Fenprothrin, Fenvalerate, and S-fenvalerate”); Ex. 1010, 7:53-64 (disintegrants); Ex. 1010, 8:47-48 (thickeners, adhesives, fertilizers, and other active ingredients);

200. There were numerous options available in the art, and Tide has not shown a scientifically legitimate path that would have led a POSA to develop the granule of claim 1.

B. Claim 2-4

201. Claims 2-4 depend from claim 1 and thus include the same limitations as claim 1 of the '685 patent. I conclude claims 2-4 would not have been obvious for the same reasons as claim 1, *see* Section XI.A.

C. Claim 7

1. Misselbrook, Mayer, and CN '588 would not have rendered obvious the granule of claim 7 containing 0.01-1% stabilizer.

202. For the reasons discussed in paragraphs 180-87, Tide failed to show that Misselbrook, Mayer, and CN '588 would have rendered obvious the granule of claim 7 containing 0.01-1% stabilizer.

2. Misselbrook, Mayer, and CN '588 would not have rendered obvious the granule of claim 7 containing 0.1-3% binding agent.

203. The combination of Misselbrook, Mayer, and CN '588 would not have provided any motivation or rationale for preparing the granule of claim 7 containing 0.1-3% binding agent. Tide does not explain how this combination would result in 0.1-3% binding agent. Petition, 49-50. In fact, Tide does not point

to a single disclosure in Misselbrook, CN '588, or Mayer regarding amounts of binding agents. *Id.*

204. As in Ground 1, Misselbrook does not teach a granule containing 0.1-3% binding agent. *Supra*, ¶¶ 145-47; *see also supra*, ¶¶ 91-103. Nor does Misselbrook provide any rationale for selecting 0.1-3% binding agent. *Id.* In fact, Misselbrook contains substantially higher levels of a water-soluble binder in all proposed formulations and embodiments. Ex. 1005, Ex. 1005, 3:2-3, 3:37, 3:44-51, 9:41-12:15.

205. As in Ground 1, CN '588 does not provide any rationale for reducing the level of binding agent in Misselbrook. *Supra*, ¶ 148.

206. Similarly, Mayer does not provide any rationale for selecting 0.1-3% binding agent. At most, Mayer discloses “**5 to 50%** by weight of one or more dispersants, agglomeration auxiliaries, one or more wetting agent, one or more disintegrants and/or one or more stabilizers.” Ex. 1010, 4:53-55. While Tide argues that agglomeration auxiliaries include binding agents, Mayer does not suggest including 0.1-3% of these agents.

207. There is no basis to expect that a POSA would have arrived at 0.1-3% binding agent based on “routine tests” for “dust content,” as Tide argues. Petition, 49. Instead, the art indicates that the optimal level of binding agent for reducing dustiness is around 4.5%, as taught by Knowles. Ex. 1024, 67 (showing reduced

dustiness when increasing the level of binding agent from 3 to 4.5%); *supra*, ¶¶ 83-88. This is confirmed by JP '902, which disclosed a granule containing 95% acephate and 4.2% binding agent (lactose). Ex. 1009, [0024].

3. Misselbrook, Mayer, and CN '588 would not have rendered obvious the granule of claim 7 containing a disintegrating agent.

208. As in Ground 1, Misselbrook does not teach incorporating a disintegrating agent into any granule, much less an acephate granule. Misselbrook disclosed granules comprised primarily of a water-soluble pesticide (preferably emamectin benzoate), a water-soluble binder (preferably sucrose, lactose, or glucose), and *no* disintegrating agent. *See* Ex. 1005, 2:67-3:2, 3:45-4:32, 9:41-12:15.

209. As in Ground 1, CN '588 does not provide any motivation or rationale for adding a disintegrating agent to Misselbrook. While CN '588 mentions disintegrating agents among a laundry list of solid carriers, the examples in CN '588 do not contain a disintegrant, and CN '588 does not disclose any benefit of adding a disintegrant in a granular formulation. Ex. 1007 at 5, 6. Indeed, CN '588 focuses on wettable powders, not granules.

210. While Mayer discloses that solid formulations may include disintegrants (*e.g.*, Ex. 1010, 7:53-64), a POSA would not have been motivated to add a disintegrating agent to Misselbrook's granules. Rather, a POSA would not

have perceived any benefit to adding a disintegrating agent to Misselbrook's granules, as explained in paragraphs 154-56.

211. Tide does not provide any scientific rationale for adding a disintegrating agent to Misselbrook in view of Mayer and CN '588. Petition, 50. At most, Tide refers to a POSA's purported "knowledge of disintegrating agents [and] the effect binders have on disintegration." Petition, 50.

212. As explained in Ground 1, based on Misselbrook at JP '902, a POSA would not have perceived any benefit to adding a disintegrating agent to Misselbrook's granules. *Supra*, ¶¶ 154-56. Consistent with Tide's theme of efficiency and reducing costs, a POSA would not seek to add an extra ingredient such as a disintegrant where no benefit was expected.

4. Improper Hindsight

213. As with claim 1, Tide appears to have selectively plucked disclosures from the prior art to cobble together a granule meeting the requirements of claim 7 of the '685 patent. There is no scientific rationale for making all the selections identified in Tide's petition.

214. First, I disagree that a POSA would have selected Misselbrook as the starting point for developing granules containing 85-98% acephate. *Supra*, ¶¶ 131-38. I also disagree that a POSA would have looked to Mayer when developing granules containing 85-98% acephate. *Supra*, ¶¶ 190-97.

215. Even assuming a POSA would have selected Misselbrook as the starting point for development and been guided by Mayer's disclosures, Tide's references do not teach any granule containing the seven excipients—and only the seven excipients—recited in claim 7 of the '685 patent.

216. A POSA would need to make the numerous specific choices not taught by Tide's references to arrive at the granule of claim 1, including at least:

1. Select acephate, despite (a) Misselbrook's disclosure that emamectin benzoate was preferred, more preferred, and especially preferred pesticide (see Ex. 1005, 3:44-51, 3:61-67, 4:1-18, 4:26-32); (b) Misselbrook's disclosure of the advantages of using emamectin benzoate against numerous pests (Ex. 1005, 7:56-8:67); (c) the issues with chemical stability of acephate reflected in CN '588 (Ex. 1007, 7-8 (Tables 1-3)); (d) Mayer's omission of acephate from among the numerous preferred pesticides disclosed therein (Ex. 1010, 2:21-3:59);
2. Select a high level of acephate, contrary to Misselbrook's teaching that lower levels of pesticide were preferred, more preferred, and especially preferred (see Ex. 1005, 3:44-51, 3:61-67, 4:1-18, 4:26-32);
3. Select 0.1-3% binding agent, despite the fact that *none* of Tide's references disclose a granule containing 0.1-3% binding agent;

contrary to JP '902, which teaches a granule containing 95% acephate and 4.2% binding agent (Ex. 1009, [0024]; and contrary to the art teaching that around 4.5% binding agent significantly reduces dustiness, thereby improving worker safety (Ex. 1024, 62-68);

4. Choose to add a disintegrating agent, contrary to Misselbrook (binder only); the knowledge of a POSA that granules containing a water-soluble pesticide and a water-soluble binder did not require a disintegrating agent (*e.g.*, Ex. 1009, [0024], [0031] (Table 1)); and despite the fact that Tide has not identified any specific example of a granule containing both a binding agent and a disintegrating agent;
5. Choose to use *seven total excipients*, despite the purported motivation of a POSA to reduce manufacturing costs;
6. Choose to use separate wetting and dispersing agents, despite the purported motivation of a POSA to reduce manufacturing costs and the knowledge of a POSA that a single surfactant could be used (*e.g.*, Ex. 1009, [0024], [0027]);
7. Choose to include 0.01-1% stabilizer, contrary to CN '588—the sole reference relied on by Tide that purports to identify a stabilizer for

acephate—which demonstrated that much high levels of stabilizer failed to prevent the decomposition of acephate (Ex. 1007, 6-8); and contrary to Mayer’s disclosure that stabilizers may optionally be present at 5-50% by weight (Ex. 1010, 4:53-55); and with no suggestion in the art that a POSA would “optimize” the level of stabilizer to 0.01-1% (as suggested by Tide, Petition, 46);

8. Choose to use 0.01-0.08% antifoaming agent instead of selecting a low-foaming surfactant (*see generally* Ex. 2009, 2 (NEWPOL PE-64 is a “low-foaming” surfactant that “effectively lower[s] surface tension of emulsions”); Ex. 1009, [0027]);
9. Decide to exclude other agents suggested by Misselbrook, Mayer, and CN ’588, including synergists, coloring agents, preservatives, extenders, other active ingredients, thickeners, adhesives, and fertilizers (*see* Ex. 1005, 6:55-57 (synergists, coloring agents); Ex. 1007, 5 (suggesting adding “other insecticidal active ingredients, such as synthetic pyrethrin compounds, like Fenprothrin, Fenvalerate, and S-fenvalerate”); Ex. 1010, 8:47-48 (thickeners, adhesives, fertilizers, and other active ingredients).

217. For this additional reason, I conclude that claim 7 would not have been obvious over Misselbrook, Mayer, and CN '588.

D. Claims 8-12

218. Claims 8-12 depend from claim 7 and thus require the limitations of claim 7 of the '685 patent. I conclude claims 8-12 would not have been obvious for the same reasons as claim 7, *see* Section XI.C.

XII. Ground 3: Misselbrook and JP '902 in view of Mayer

A. Claim 1

1. The proposed combination would have led a POSA to develop granules containing excipients excluded from claim 1, including a binding agent.

219. As discussed in Ground 1, Misselbrook's formulations all requires a water-soluble binder such as sucrose, lactose, or glucose, and JP '902 would have reinforced the motivation to include a water-soluble binder in a granule containing acephate. *Supra*, ¶¶ 91-103, 108-13. As discussed in Ground 2, Mayer does not provide any motivation for removing the binding agent from Misselbrook. *Supra*, ¶¶ 175-76. Indeed, Tide's expert admits that Mayer does not "discourage" the use of binding agents. Ex. 1003, ¶ 152.

220. As in Grounds 1 and 2, Tide admits that the proposed combination would have motivated a POSA to include a binding agent in a granule. Petition, 60-61. Tide does not explain how the combination of Misselbrook, JP '902, and

Mayer would result in a granule that does *not* contain a binding agent, e.g., a granule that contains only the ingredients recited in claim 1 of the '685 patent. In other words, Tide failed to explain why a POSA would *remove* the binding agent from Misselbrook. *See* Petition, 54-59. And as explained above, the art would have discouraged such a modification. *Supra*, ¶¶ 82-103, 108-113, 174.

221. For example, as discussed in Grounds 1 and 2, a POSA would have understood that binding agents reduce dustiness of granules and reducing dustiness of a formulation was considered an advantage for worker safety. *See supra*, ¶¶ 83-88; Ex. 1024, 66-68. As a result, the general knowledge of a POSA would have motivated the development of granules containing a binding agent.

222. For at least this reason, Tide has not shown that Misselbrook, JP '902, and Mayer would have rendered obvious the granule of claim 1 of the '685 patent.

2. The proposed combination would not have rendered obvious the granule of claim 1 containing 0.01-1% stabilizer.

223. Tide failed to show that Misselbrook, JP '902, and Mayer would have rendered obvious the claimed granule containing 0.01-1% stabilizer. Petition, 57-58.

224. As in Grounds 1 and 2, Misselbrook mentions the possibility of adding a stabilizer but did not identify any excipients as stabilizers, and further did not suggest any particular amount of a stabilizer to use. Ex. 1005, 6:55-56 (“the

instant pesticidal compositions may also appropriately contain stabilizers, synergists, coloring agents, etc.”). Misselbrook thus provides no motivation to include 0.01-1% stabilizer.

225. As in Ground 1, in JP '902, Tide points to “JP '902’s disclosed 0.3% amount of stabilizer as a starting point.” Petition, 58 (citing Ex. 1009, [0020]). As explained above, Tide’s selection of “0.3% amount of stabilizer” is not based on science but is rather an attempt to locate the limitations recited in the claims of the '685 patent in the prior art. *Supra*, ¶¶ 124-28. In JP '902, the “0.3% stabilizer” (phosphoric acid) is used only in granules containing Cartap Hydrochloride, one of which happens to also contain 25% acephate. Ex. 1009, [0015]-[0027]. None of the granules of JP '902 that contained acephate as the only active ingredient include this agent. Ex. 1009, [0018], [0021], [0024], [0025]. Thus, POSA would not have considered “0.3% stabilizer” as a starting point when developing a granule containing 85-98% acephate.

226. As in Ground 2, at most, Mayer discloses optionally including “5 to 50% by weight of one or more dispersants, agglomeration auxiliaries, one or more wetting agent, one or more disintegrants and/or one or more stabilizers.” Ex. 1010, 4:53-55. Mayer thus provides no motivation to include 0.01-1% stabilizer in a granule containing acephate.

227. Taken together, none of these references taught or suggested adding 0.01-1% stabilizer to a granule containing 85-98% acephate.

228. Nor does the art provide any support for the implausible notion that a POSA would have optimized the level of stabilizer to 0.01-1% based on “routine tests” such as “accelerated aging.” Petition, 58. This argument is contradicted by Tide’s own references. For example, CN ’588 shows that 20-30% stabilizer failed to prevent the decomposition of acephate using accelerated aging tests. Ex. 1007, 6-8. Unlike CN ’588, Misselbrook, JP ’902, and Mayer do not report any stability testing on acephate formulations and thus provide no basis to expect that the level of stabilizer would have been optimized to 0.01-1%.

229. Therefore, the combination of Misselbrook, JP ’902, and Mayer would not have rendered obvious the claimed granule containing 0.01-1% stabilizer. Contrary to Tide, there is simply no reason to expect that a POSA would optimize the level of stabilizer to 0.01-1% based on tests such as “accelerated aging.” Petition, 58.

3. Improper Hindsight

230. Tide appears to have selectively plucked disclosures from the prior art to cobble together a granule meeting the requirements of claim 1 of the ’685 patent. There is no scientific rationale for making all the selections identified in Tide’s petition.

231. As set forth in Grounds 1 and 2, a POSA would not have looked to Misselbrook or Mayer for guidance on developing a granule containing a high level of acephate. *Supra*, ¶¶ 131-38, 190-97.

232. Even assuming a POSA would have considered Misselbrook and Mayer instructive, Tide's references do not teach any granule containing the five excipients—and only the five excipients—recited in claim 1.

233. A POSA would need to make the numerous specific choices not taught by Tide's references to arrive at the granule of claim 1, including at least:

1. Select acephate, despite (a) Misselbrook disclosure that emamectin benzoate was preferred, more preferred, and especially preferred pesticide (see Ex. 1005, 3:44-51, 3:61-67, 4:1-18, 4:26-32); (b) Misselbrook's disclosure of the advantages of using emamectin benzoate against numerous pests (Ex. 1005, 7:56-8:67); (c) Mayer's omission of acephate from among the numerous preferred pesticides disclosed therein (Ex. 1010, 2:21-3:59);
2. Select a high level of acephate, contrary to Misselbrook's teaching that lower levels of pesticide were preferred, more preferred, and especially preferred (see Ex. 1005, 3:44-51, 3:61-67, 4:1-18, 4:26-32);
3. Choose *not* to use a binder, contrary to (a) Misselbrook and JP '902 (see *supra*, Section X.A.1); and (b) the motivation of a POSA to

prepare a non-dusty granule and the general knowledge in the art that binders reduce dustiness (*e.g.*, Ex. 1024, 62-68);

4. Choose to use *five total excipients*, despite the purported motivation of a POSA to reduce manufacturing costs;
5. Choose to use separate wetting and dispersing agents, despite the purported motivation of a POSA to reduce manufacturing costs and the use of a single surfactant (serving both wetting and dispersing roles) in JP '902 (*e.g.*, Ex. 1009, [0024], [0027]);
6. Choose to include 0.01-0.08% antifoaming agent instead of selecting a low-foaming surfactant such as Newpol PE-64 (taught in JP '902), despite the purported motivation of a POSA to reduce manufacturing costs (*see* Petition at 27) (*see generally* Ex. 2009, 2 (NEWPOL PE-64 is a “low-foaming” surfactant that “effectively lower[s] surface tension of emulsions”); Ex. 1009, [0027]);
7. Choose to include a 0.01-1% stabilizer (which is not suggested or taught in Misselbrook or Mayer), despite the teaching of JP '902, which did not include the purported stabilizer described therein in any granule containing acephate as the only active ingredient; and with no suggestion in the art that a POSA would “optimize” the level of stabilizer to 0.01-1% (as suggested by Tide, Petition, 58);

8. Decide to exclude other agents suggested by Misselbrook, JP '902, and Mayer, including synergists, coloring agents, disintegrants, thickeners, adhesives, fertilizers, other active ingredients, preservatives, and extenders (*see* Ex. 1005, 6:55-57 (synergists, coloring agents); Ex. 1010, 7:53-64 (disintegrants); Ex. 1010, 8:47-48 (thickeners, adhesives, fertilizers, and other active ingredients); Ex. 1009, [0009] (colorants, preservatives, and extenders).

234. There were numerous options available in the art, and Tide has not shown a scientifically legitimate path that would have led a POSA to develop the granule of claim 1.

B. Claims 2-4

235. Claims 2-4 depend from claim 1 and thus include the same limitations as claim 1 of the '685 patent. I conclude claims 2-4 would not have been obvious for the same reasons as claim 1, *see* Section XII.A

C. Claim 7

1. Misselbrook, JP '902, and Mayer would not have rendered obvious the granule of claim 7 containing 0.01-1% stabilizer.

236. For the reasons discussed in paragraphs 223-29, Tide failed to show that Misselbrook, JP '902, and Mayer would have rendered obvious the granule of claim 7 containing 0.01-1% stabilizer.

2. Misselbrook, Mayer, and CN '588 would not have rendered obvious the granule of claim 7 containing 0.1-3% binding agent.

237. The combination of Misselbrook, JP '902, and Mayer would not have provided any motivation or rationale for preparing the granule of claim 7 containing 0.1-3% binding agent.

238. As in Ground 1, Misselbrook does not teach a granule containing 0.1-3% binding agent. Nor does Misselbrook provide any rationale for selecting 0.1-3% binding agent. In fact, Misselbrook contains substantially higher levels of a water-soluble binder in all proposed formulations and embodiments. Ex. 1005, Ex. 1005, 3:2-3, 3:37, 3:44-51, 9:41-12:15. I incorporate by reference my discussion of this issue in Ground 1. *Supra*, ¶¶ 91-103, 145-47.

239. As in Ground 2, Mayer does not provide any rationale for selecting 0.1-3% binding agent. At most, Mayer discloses “5 to 50% by weight of one or more dispersants, agglomeration auxiliaries, one or more wetting agent, one or more disintegrants and/or one or more stabilizers.” Ex. 1010, 4:53-55. While Tide argues that agglomeration auxiliaries include binding agents, Mayer does not suggest including 0.1-3% of these agents.

240. As in Ground 1, JP '902 does not provide any rationale for selecting 0.1-3% binding agent. *Supra*, ¶¶ 149-53; *see also* ¶¶ 108-13. The granules in JP '902 all contain above 3% binding agent. *E.g.*, Ex. 1009, [0018], [0024], [0027].

241. As in Ground 1, Tide did not argue that a granule containing over 4% binding agent would have rendered obvious a granule containing 0.1-3% binding agent. Petition, 60. Rather, Tide again argues a POSA would have selected 1% dextrin as a binder based on Reference Example 4 and Example 9 of JP '902. Petition, 60 (citing Ex. 1009, [0018] and [0027]).

242. Tide's selection of 1% dextrin as a binding agent appears to be improperly based on hindsight. JP '902 discloses one purportedly inventive granule containing 95% acephate (Example 6), and that granule does not contain 1% dextrin; rather, it contains 4.2 % lactose as the binding agent. Ex. 1009, [0024].

243. Tide thus disregards the most pertinent example of JP '902 in its analysis (Example 6), instead focusing on a subset of the binding agents included in Reference Example 4 and Example 9. Petition, 60 (citing Ex. 1009, [0018], [0027]). A POSA would have considered Reference Example 4 and Example 9 less informative than Example 6, as Reference Example 4 does not embody the purported invention of JP '902, and Example 9 contains only 75% acephate. Ex. 1009, [0018], [0024], [0027]. Further, Reference Example 4 and Example 9 do not teach using only 1% dextrin as the binding agent; rather, Reference Example 4 contains 4.4% binding agent (1% dextrin and 3.4% lactose), and Example 9 contains 22.4% binding agent (1% dextrin and 21.4% lactose), respectively. Ex.

1009, [0018], [0027]. Tide's selection of 1% dextrin as the starting point in its analysis thus has no merit.

244. There is no basis to expect that a POSA would have optimized the level of binding agent to 0.1-3% using "routine tests" such as "rate of dispersion, dust content, and granulation attrition/strength," as argued by Tide. Petition, 60. The art suggested that around 4.5% binding agent was optimal, as taught by Knowles. Ex. 1024, 67 (showing reduced dustiness when increasing the level of binding agent from 3 to 4.5%); *supra*, ¶¶ 82-87. And this level of binding agent is consistent with JP '902, which included 4.2% binding agent in a granule containing 95% acephate. Ex. 1009, [0024].

245. To conclude, Tide failed to show that the combination of Misselbrook, JP '902, and Mayer would have resulted in the granule of claim 7 containing only 0.01-3% binding agent.

3. Misselbrook, JP '902, and Mayer would not have rendered obvious the granule of claim 7 containing a disintegrating agent.

246. As in Ground 1, Misselbrook does not provide any rationale for incorporating a disintegrating agent into any granule, much less an acephate granule. *Supra*, ¶ 154.

247. As in Ground 1, a POSA would not have perceived any benefit to adding a disintegrating agent to Misselbrook's granules. Misselbrook's granules

are similar to those disclosed in JP '902, e.g., they largely comprise a water-soluble pesticide, water-soluble binder, and no disintegrant. Ex. 1005, 2:67-3:2, 3:45-4:32, 9:41-12:15; *compare* Ex. 1009, [0018], [0024], [0027]. Like the granules in JP '902, a POSA would have expected that a disintegrating agent would not be required to dissolve the granular ingredients of Misselbrook. A POSA thus would not have had any scientific rationale to add a disintegrating agent to Misselbrook's water-soluble granules. *See supra*, ¶¶ 154-56.

248. As in Ground 2, Mayer does not provide any rationale for adding a disintegrating agent to Misselbrook's granules. *Supra*, ¶¶ 210-11. At most, Mayer discloses that solid formulations may include disintegrants. *E.g.*, Ex. 1010, 7:53-64. That disclosure, however, would not have motivated a POSA to add a disintegrating agent to *Misselbrook's* granules, and factors such as cost and efficiency would have discouraged adding extra, unnecessary ingredients.

4. Improper Hindsight

249. As with claim 1, Tide appears to have selectively plucked disclosures from the prior art to cobble together a granule meeting the requirements of claim 7 of the '685 patent. There is no scientific rationale for making all the selections identified in Tide's petition.

250. As with claim 1, I disagree that a POSA would have selected Misselbrook as the starting point for developing granules containing a high level of

acephate. *Supra*, ¶¶ 131-38. I also disagree that Mayer would have looked to Mayer when developing granules containing high levels of acephate. *Supra*, ¶¶ 190-97.

251. Even assuming a POSA would have selected Misselbrook as the starting point for development and been guided by Mayer's disclosures, Tide's references do not teach any granule containing the seven excipients—and only the seven excipients—recited in claim 7 of the '685 patent.

252. A POSA would need to make the numerous specific choices not taught by Tide's references to arrive at the granule of claim 1, including at least:

1. Select acephate, despite (a) Misselbrook's disclosure that emamectin benzoate was preferred, more preferred, and especially preferred pesticide (see Ex. 1005, 3:44-51, 3:61-67, 4:1-18, 4:26-32); (b) Misselbrook's disclosure of the advantages of using emamectin benzoate against numerous pests (Ex. 1005, 7:56-8:67); (c) Mayer's omission of acephate from among the numerous preferred pesticides disclosed therein (Ex. 1010, 2:21-3:59);
2. Select a high level of acephate, contrary to Misselbrook's teaching that lower levels of pesticide were preferred, more preferred, and especially preferred *see* Ex. 1005, 3:44-51, 3:61-67, 4:1-18, 4:26-32);

3. Select 0.1-3% binding agent, despite the fact that *none* of Tide's references disclose a granule containing 0.1-3% binding agent; contrary to JP '902, which teaches a granule containing 95% acephate and 4.2% binding agent (Ex. 1009, [0024]); and contrary to the art teaching that around 4.5% binding agent significantly reduces dustiness, thereby improving worker safety (Ex. 1024, 62-68);
4. Choose to add a disintegrating agent, contrary to Misselbrook (binder only) and JP '902 (binder only) and the knowledge of a POSA that granules containing a water-soluble pesticide and a water-soluble binder did not require a disintegrating agent (*e.g.*, Ex. 1009, [0024], [0031] (Table 1)); and despite the fact that Tide has not identified any specific example of a granule containing both a binding agent and a disintegrating agent;
5. Choose to use *seven total excipients*, despite the purported motivation of a POSA to reduce manufacturing costs;
6. Choose to use separate wetting and dispersing agents, despite the purported motivation of a POSA to reduce manufacturing costs and the use of a single surfactant in JP '902 (*e.g.*, Ex. 1009, [0024], [0027]);

7. Choose to add 0.01-1% a stabilizer (which is not suggested or taught by Misselbrook or Mayer), despite the teaching of JP '902, which did not include the purported stabilizers described therein in any granule containing acephate as the only active ingredient (Ex. 1009, [0018], [0024], [0027]), and with no suggestion in the art that a POSA would “optimize” the level of stabilizer to 0.01-1% (as suggested by Tide, Petition, 58);
8. Choose to use 0.01-0.08% antifoaming agent instead of selecting a low-foaming surfactant such as Newpol PE-64 (taught in JP '902, Ex. 1009, [0027]) *see generally* Ex. 2009, 2 (NEWPOL PE-64 is a “low-foaming” surfactant that “effectively lower[s] surface tension of emulsions”));
9. Decide to exclude other agents suggested by Misselbrook, JP '902, and Mayer, including synergists, coloring agents, preservatives, extenders, thickeners, adhesives, fertilizers, and other active ingredients (*see* Ex. 1005, 6:55-57 (synergists, coloring agents); Ex. 1009, [0009] (colorants, preservatives, and extenders); Ex. 1010, 8:47-48 (thickeners, adhesives, fertilizers, and other active ingredients)).

253. There were numerous options available in the art, and Tide has not shown a scientifically legitimate path that would have led a POSA to develop the granule of claim 7.

D. Claims 8-12

254. Claims 8-12 depend from claim 7 and thus include the same limitations as claim 7 of the '685 patent. I conclude claims 8-12 would not have been obvious for the same reasons as claim 7, *see* Section XII.A.

XIII. Conclusion

255. In signing this declaration, I understand that the declaration will be filed as evidence in a contested case before the Patent Trial and Appeal Board of the United States Patent and Trademark Office. I acknowledge that I may be subject to cross-examination in this case and that cross-examination will take place within the United States. If cross-examination is required of me, I will appear for cross-examination within the United States during the time allotted for cross-examination.

256. I declare that all statements made herein of my knowledge are true, that all statements made on information and belief are believed to be true, and that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code.

Respectfully submitted,

A handwritten signature in blue ink, appearing to read "D. A. Rockstraw", with a long horizontal flourish extending to the right.

David A. Rockstraw, Ph.D., P.E.

Dated: April 14, 2021

Attachment A



Chemical Name: Acephate

You can use the field below to search specific products or product numbers from your results.

If the result came up blank, you might want to click 'Inactive' or 'Active' button and see if it'll return any row(s).

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Product Name	Accepted Date	EPA Reg No	Current Status	
1300 ORTHENE TR TOTAL RELEASE INSECTICIDE	09/01/2016	<u>499-421</u>	Active (OCT 14, 1997)	12% acephate (ref. 1)
ACE-JET	03/31/2015	<u>74578-2</u>	Active (JUL 21, 2005)	Reg. after Dec. 2001
ACECAP SYSTEMIC INSECTICIDE IMPLANTS	05/04/2010	<u>37979-1</u>	Active (JUL 13, 1979)	Tree implant cartridge (ref. 2)
ACEPHATE 50 FIRE ANT INSECTICIDE	08/18/2017	<u>53883-203</u>	Active (NOV 16, 2006)	Reg. after Dec. 2001
ACEPHATE 75 SP	01/29/2013	<u>70506-1</u>	Active (FEB 08, 1999)	SP, soluble powder
ACEPHATE 75 SP AGRICULTURAL & FIRE ANT INSECTICIDE	04/22/2015	<u>53883-133</u>	Active (JAN 14, 2005)	Reg. after Dec. 2001
ACEPHATE 75 WSP	01/29/2013	<u>70506-1</u>	Active (FEB 08, 1999)	water soluble powder
ACEPHATE 75 WSP INSECTICIDE	01/29/2013	<u>70506-1</u>	Active (FEB 08, 1999)	water soluble powder
ACEPHATE 75 WSP INSECTICIDE	11/22/2017	<u>34704-863</u>	Active (AUG 26, 2004)	Reg. after Dec. 2001

ACEPHATE 75SP	05/22/2013	<u>66330-354</u>	Active (APR 11, 1996)	SP, soluble powder
ACEPHATE 75SP HOMEOWNER	06/03/2009	<u>66330-358</u>	Active (MAY 02, 1996)	SP, soluble powder
ACEPHATE 80S SEED TREATER	06/03/2009	<u>66330-359</u>	Active (APR 29, 1996)	80% acephate; soluble powder
ACEPHATE 90 DF INSECTICIDE	01/29/2013	<u>70506-76</u>	Active (APR 13, 2006)	Reg. after Dec. 2001
ACEPHATE 90 PRILL	10/12/2016	<u>66222-123</u>	Active (MAY 18, 2005)	Reg. after Dec. 2001
ACEPHATE 90 SP	01/29/2013	<u>70506-2</u>	Active (FEB 08, 1999)	SP, soluble powder
ACEPHATE 90 WDG	05/22/2013	<u>66330-370</u>	Active (DEC 19, 2007)	Reg. after Dec. 2001
ACEPHATE 90 WDG	01/19/2017	<u>34704-1051</u>	Active (JAN 28, 2010)	Reg. after Dec. 2001
ACEPHATE 90 WSP	01/29/2013	<u>70506-2</u>	Active (FEB 08, 1999)	water soluble powder
ACEPHATE 90 WSP	11/28/2017	<u>34704-862</u>	Active (AUG 26, 2004)	Reg. after Dec. 2001
ACEPHATE 90 WSP INSECTICIDE	-	<u>MS030007</u>	Active (SEP 17, 2003)	Reg. after Dec. 2001
ACEPHATE 90% PRILLS	02/11/2016	<u>53883-253</u>	Active (APR 01, 2009)	Reg. after Dec. 2001
ACEPHATE 90% WSP	12/11/2014	<u>83222-2</u>	Active (MAY 10, 2007)	Reg. after Dec. 2001
ACEPHATE 90EG	05/22/2013	<u>66330-370</u>	Active (DEC 19, 2007)	Reg. after Dec. 2001
ACEPHATE 90SP	05/22/2013	<u>66330-356</u>	Active (APR 15, 1996)	SP, soluble powder
ACEPHATE 90SP INSECTICIDE	10/25/2017	<u>34704-880</u>	Active (AUG 16, 2005)	Reg. after Dec. 2001
ACEPHATE 90SP MANUFACTURING USE PRODUCT	01/29/2013	<u>91813-20</u>	Active (SEP 21, 2005)	Reg. after Dec. 2001
ACEPHATE 90WDG	05/22/2013	<u>66330-370</u>	Active (DEC 19, 2007)	Reg. after Dec. 2001
ACEPHATE 97 EG	05/22/2013	<u>66330-360</u>	Active (JUN 22, 2001)	granule with 97%
ACEPHATE 97 EG	06/25/2013	<u>34704-903</u>	Active (FEB 15, 2006)	Reg. after Dec. 2001
ACEPHATE 97 WDG	09/12/2017	<u>66222-266</u>	Active (OCT 20, 2016)	Reg. after Dec. 2001

ACEPHATE 97% PRILLS	03/04/2013	<u>83222-31</u>	Active (APR 16, 2010)	Reg. after Dec. 2001
ACEPHATE 97UP INSECTICIDE	01/29/2013	<u>70506-8</u>	Active (OCT 21, 2002)	Reg. after Dec. 2001
ACEPHATE 97UP INSECTICIDE	08/04/2009	<u>ID090013</u>	Active (OCT 29, 2009)	Reg. after Dec. 2001
ACEPHATE 97UP INSECTICIDE	09/30/2009	<u>OR090024</u>	Active (AUG 19, 2015)	Reg. after Dec. 2001
ACEPHATE 97UP INSECTICIDE	-	<u>OR170002</u>	Active (OCT 13, 2017)	Reg. after Dec. 2001
ACEPHATE 97UP INSECTICIDE	-	<u>ID170005</u>	Active (NOV 17, 2017)	Reg. after Dec. 2001
ACEPHATE INFUSIBLE INSECTICIDE	06/17/2013	<u>74779-5</u>	Active (MAR 07, 2007)	Reg. after Dec. 2001
ACEPHATE PCO SP INSECTICIDE	06/09/2009	<u>66330-355</u>	Active (MAY 08, 1996)	SP, soluble powder
ACEPHATE PRO 75 WSP	01/29/2013	<u>70506-1</u>	Active (FEB 08, 1999)	water soluble powder
ACEPHATE SYSTEMIC TREE & ORNAMENTAL INSECTICIDE	12/07/2009	<u>74779-6</u>	Active (JUN 27, 2007)	Reg. after Dec. 2001
ACEPHATE TECHNICAL	06/23/2011	<u>91813-12</u>	Active (FEB 03, 1999)	not formulated Reg.
ACEPHATE TECHNICAL	02/14/2013	<u>53883-103</u>	Active (JUN 20, 2003)	after Dec. 2001 Reg.
ACEPHATE TECHNICAL	06/01/2011	<u>83558-35</u>	Active (DEC 09, 2004)	after Dec. 2001 Reg.
ACEPHATE TECHNICAL	08/06/2018	<u>81964-1</u>	Active (AUG 26, 2005)	after Dec. 2001
ARBOR X THENE	02/06/2012	<u>64014-1</u>	Active (APR 02, 1992)	Injection system (ref. 3)
AVATAR 97	01/29/2013	<u>70506-8</u>	Active (OCT 21, 2002)	Reg. after Dec. 2001
AVATAR PLX	08/24/2017	<u>94396-29</u>	Active (MAR 03, 2015)	Reg. after Dec. 2001
AX ACEPHATE 90 WDG	03/02/2016	<u>89167-27</u>	Active (JAN 02, 2013)	Reg. after Dec. 2001
AX ACEPHATE 97	09/16/2013	<u>89167-35</u>	Active (SEP 16, 2013)	Reg. after Dec. 2001
Acenthrin Insecticide	10/12/2018	<u>70506-339</u>	Active (FEB 15, 2018)	Reg. after Dec. 2001

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Product Name	Accepted Date	EPA Reg No	Current Status	
Acephate 90 Prill Select	05/10/2018	<u>89442-40</u>	Active (MAY 10, 2018)	Reg. after Dec. 2001
Acephate Technical	08/30/2018	<u>85678-52</u>	Active (AUG 30, 2018)	Reg. after Dec. 2001
BOLT INFUSIBLE ORNAMENTAL TREE & SHRUB INSECTICIDIE	06/17/2013	<u>74779-5</u>	Active (MAR 07, 2007)	Reg. after Dec. 2001
BOLT SYSTEMIC TREE & ORNAMENTAL INSECTICIDE	12/07/2009	<u>74779-6</u>	Active (JUN 27, 2007)	Reg. after Dec. 2001
BONIDE SYSTEMIC INSECT CONTROL	11/18/2015	<u>4-490</u>	Active (NOV 18, 2015)	Reg. after Dec. 2001
BONIDE SYSTEMIC INSECT CONTROL II	11/18/2015	<u>4-490</u>	Active (NOV 18, 2015)	Reg. after Dec. 2001
BORER-STOP ECOTAB	07/20/2005	<u>75748-1</u>	Active (JUL 20, 2005)	Reg. after Dec. 2001
BRACKET 90 WSP	04/30/2013	<u>1381-238</u>	Active (JUL 02, 2008)	Reg. after Dec. 2001
BRAVO ULTREX	05/04/2010	<u>37979-1</u>	Active (JUL 13, 1979)	Tree implant cartridge (ref. 2)

DENDREX	02/06/2012	<u>64014-1</u>	Active (APR 02, 1992)	Injection system (ref. 3)
DEXOL ALL-IN-1 ROSE & FLOWER CARE	06/11/2018	<u>192-223</u>	Active (JUN 11, 2018)	Reg. after Dec. 2001
DEXOL GUARD FLOWER & SHRUB CARE	09/21/2016	<u>192-211</u>	Active (MAY 26, 2000)	1.5% acephate (ref. 4)
DEXOL GUARD FLOWER & SHRUB CARE	06/11/2018	<u>192-223</u>	Active (JUN 11, 2018)	Reg. after Dec. 2001
DEXOL ROSE & FLOWER 3-WAY	06/11/2018	<u>192-223</u>	Active (JUN 11, 2018)	Reg. after Dec. 2001
DEXOL SYSTEMIC GRANULES FOR PLANT INSECT CONTROL	03/29/2007	<u>192-210</u>	Active (JUN 08, 2000)	1.5% acephate (ref. 22)
DEXOL SYSTEMIC PLANT CARE	09/21/2016	<u>192-211</u>	Active (MAY 26, 2000)	1.5% acephate (ref. 4)
DREXEL ACEPHATE 75 WSP	04/09/2013	<u>19713-400</u>	Active (FEB 04, 1997)	water soluble powder
DREXEL ACEPHATE 75SP HOMEOWNER	01/19/2010	<u>19713-497</u>	Active (AUG 06, 1998)	SP, soluble powder
DREXEL ACEPHATE 80 SEED PROTECTANT	02/22/2017	<u>19713-408</u>	Active (JUL 22, 1997)	80% acephate
DREXEL ACEPHATE 90S	05/14/2018	<u>19713-544</u>	Active (JUN 10, 2004)	Reg. after Dec. 2001
DREXEL ACEPHATE PCO SP INSECTICIDE	08/16/2007	<u>19713-495</u>	Active (SEP 02, 1998)	SP, soluble powder
DREXEL ACEPHATE TECHNICAL	04/08/2010	<u>19713-410</u>	Active (SEP 18, 1997)	not formulated
EXCEL SYSTEMIC INSECT CONTROL GRANULES	12/15/2009	<u>71376-2</u>	Active (AUG 23, 2005)	Reg. after Dec. 2001
EXCEL SYSTEMIC ROSE & FLOWER CARE	09/19/2019	<u>71376-1</u>	Active (AUG 09, 2004)	Reg. after Dec. 2001
GARDENER'S CHOICE ROSE GUARD	06/11/2018	<u>192-223</u>	Active (JUN 11, 2018)	Reg. after Dec. 2001
GARDENERS' CHOICE ROSE GUARD	09/21/2016	<u>192-211</u>	Active (MAY 26, 2000)	1.5% acephate (ref. 4)
ISOTOX INSECT KILLER FORMULA II	05/05/2010	<u>239-2461</u>	Active (AUG 03, 1979)	9.4% acephate (ref. 5)
LANCER GOLD INSECTICIDE	03/07/2014	<u>70506-242</u>	Active (OCT 05, 2011)	formulation Reg. after Dec. 2001

LEPITECT INFUSIBLE ORNAMENTAL TREE & SHRUB INSECTICIDE	06/17/2013	<u>74779-5</u>	Active (MAR 07, 2007)	Reg. after Dec. 2001
LEPITECT INFUSIBLE TREE & ORNAMENTAL INSECTICIDE	06/17/2013	<u>74779-5</u>	Active (MAR 07, 2007)	Reg. after Dec. 2001
LEPITECT SYSTEMIC TREE & ORNAMENTAL INSECTICIDE	12/07/2009	<u>74779-6</u>	Active (JUN 27, 2007)	Reg. after Dec. 2001
LILLY MILLER READY TO USE SYSTEMIC ROSE & FLOWER CARE	09/19/2019	<u>71376-1</u>	Active (AUG 09, 2004)	Reg. after Dec. 2001
MARTIN'S SURRENDER FIRE ANT KILLER INSECTICIDE	04/22/2015	<u>53883-133</u>	Active (JAN 14, 2005)	Reg. after Dec. 2001
ORTHENE 15 GRANULAR	09/14/2012	<u>5481-8976</u>	Active (FEB 05, 1993)	15% acephate (ref. 6)
ORTHENE 75 S SOLUBLE POWDER	03/27/2013	<u>5481-8971</u>	Active (JUL 31, 1989)	SP, soluble powder
ORTHENE 75 S SOLUBLE POWDER	-	<u>AL940001</u>	Active (APR 09, 2007)	State Registration
ORTHENE 75 S SOLUBLE POWDER	-	<u>AR810050</u>	Active (APR 09, 2007)	State Registration
ORTHENE 75 S SOLUBLE POWDER	-	<u>AZ920008</u>	Active (APR 09, 2007)	State Registration
ORTHENE 75 S SOLUBLE POWDER	-	<u>CA790138</u>	Active (APR 09, 2007)	State Registration
ORTHENE 75 S SOLUBLE POWDER	-	<u>ID010016</u>	Active (APR 09, 2007)	State Registration
ORTHENE 75 S SOLUBLE POWDER	-	<u>NJ960004</u>	Active (APR 09, 2007)	State Registration
ORTHENE 75 S SOLUBLE POWDER	-	<u>PA930004</u>	Active (APR 09, 2007)	State Registration
ORTHENE 75 S SOLUBLE POWDER	-	<u>PR910002</u>	Active (APR 09, 2007)	State Registration
ORTHENE 75 S SOLUBLE POWDER	-	<u>VA870007</u>	Active (APR 09, 2007)	State Registration
ORTHENE 75 S SOLUBLE POWDER	-	<u>VA920003</u>	Active (APR 09, 2007)	State Registration

ORTHENE 75 S SOLUBLE POWDER	-	<u>VA930005</u>	Active (JUN 11, 2007)	State Registration
ORTHENE 90S	03/27/2013	<u>5481-8974</u>	Active (JUL 31, 1989)	soluble powder
ORTHENE 97	06/08/2015	<u>5481-8978</u>	Active (MAR 18, 1998)	pellets (ref. 7)
ORTHENE 97	12/30/2009	<u>OR090025</u>	Active (FEB 02, 2016)	Reg. after Dec. 2001
ORTHENE 97	12/30/2009	<u>OR090026</u>	Active (FEB 02, 2016)	Reg. after Dec. 2001

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Product Name	Accepted Date	EPA Reg No	Current Status	
ORTHENE 97	-	WA050015	Active (NOV 05, 2009)	State Registration
ORTHENE 97	-	NC050003	Active (OCT 07, 2011)	State Registration
ORTHENE 97	-	ID060025	Active (OCT 25, 2006)	State Registration
ORTHENE 97 PELLETS	06/08/2015	5481-8978	Active (MAR 18, 1998)	pellets (ref. 7)
ORTHENE 97 PELLETS	-	AZ030002	Active (JUL 15, 2003)	State Registration
ORTHENE 97 PELLETS	10/07/2011	NC030003	Active (OCT 07, 2011)	State Registration
ORTHENE 97 PELLETS	-	NC030004	Active (OCT 07, 2011)	State Registration
ORTHENE 97 PELLETS	-	NJ000005	Active (APR 25, 2007)	State Registration
ORTHENE 97 PELLETS	-	OH000007	Active (APR 25, 2007)	State Registration
ORTHENE 97 PELLETS	09/10/2009	WA090021	Active (JAN 07, 2020)	State Registration
ORTHENE 97 PELLETS	08/23/2010	CA100010	Active (SEP 24, 2010)	State Registration

ORTHENE 97 PELLETS	-	<u>LA130007</u>	Active (FEB 26, 2019)	State Registration
ORTHENE 97 PELLETS	-	<u>OR160010</u>	Active (SEP 20, 2016)	State Registration
ORTHENE 97 PELLETS	-	<u>AR170003</u>	Active (SEP 27, 2017)	State Registration
ORTHENE 97 PELLETS	-	<u>WA170010</u>	Active (JAN 07, 2020)	State Registration
ORTHENE 97 PELLETS	-	<u>MS190001</u>	Active (AUG 08, 2019)	State Registration
ORTHENE 97 ST	06/08/2015	<u>5481-8978</u>	Active (MAR 18, 1998)	pellet (ref. 7)
ORTHENE FIRE ANT KILLER II	06/27/2016	<u>239-2632</u>	Active (MAY 13, 1998)	50% acephate (ref. 8)
ORTHENE FIRE ANT KILLER I	06/27/2016	<u>239-2632</u>	Active (MAY 13, 1998)	50% acephate (ref. 8)
ORTHENE INSECT KILLER	05/05/2010	<u>239-2461</u>	Active (AUG 03, 1979)	9.4% acephate (ref. 5)
ORTHENE PCO FORMULA II	12/07/2011	<u>5481-8973</u>	Active (JUL 31, 1989)	pellets (ref. 9)
ORTHENE PCO PELLETS	12/07/2011	<u>5481-8973</u>	Active (JUL 31, 1989)	pellets (ref. 9)
ORTHENE READY-SPRAY ORNAMENTAL INSECT KILLER	05/05/2010	<u>239-2461</u>	Active (AUG 03, 1979)	9.4% acephate (ref. 5)
ORTHENE SYSTEMIC INSECT CONTROL	05/05/2010	<u>239-2461</u>	Active (AUG 03, 1979)	9.4% acephate (ref. 5)
ORTHENE TECHNICAL	04/20/2012	<u>5481-8975</u>	Active (NOV 06, 1989)	not formulated
ORTHENE TOBACCO INSECT SPRAY	09/14/2012	<u>5481-8972</u>	Active (JUL 31, 1989)	liquid/spray
ORTHENE TURF AND ORNAMENTAL SPRAY	03/27/2013	<u>5481-8971</u>	Active (JUL 31, 1989)	liquid/spray
ORTHENE TURF, TREE & ORNAMENTAL 97 SPRAY	06/08/2015	<u>5481-8978</u>	Active (MAR 18, 1998)	liquid/spray
ORTHENE TURF, TREE & ORNAMENTAL 97 SPRAY	04/14/2010	<u>TX100006</u>	Active (JUN 08, 2010)	State Registration
ORTHENE TURF, TREE & ORNAMENTAL 97 SPRAY	05/14/2010	<u>MI100001</u>	Active (JUL 26, 2010)	State Registration
ORTHENE TURF, TREE & ORNAMENTAL WSP	03/27/2013	<u>5481-8971</u>	Active (JUL 31, 1989)	water soluble powder

ORTHENE TURFGRASS & CONTAINER GROWN NURSERY STOCK 15 GRANULAR	08/13/2012	<u>5481-8977</u>	Active (OCT 12, 1994)	15% acephate (ref. 10)
ORTHO BLOOM GARD	05/05/2010	<u>239-2461</u>	Active (AUG 03, 1979)	9.4% acephate (ref. 5)
ORTHO BUG-B-GON JAPANESE BEETLE KILLER CONCENTRATE	05/05/2010	<u>239-2461</u>	Active (AUG 03, 1979)	9.4% acephate (ref. 5)
ORTHO BUG-B-GON SYSTEMIC INSECT KILLER	05/05/2010	<u>239-2461</u>	Active (AUG 03, 1979)	9.4% acephate (ref. 5)
ORTHO BUG-B-GON SYSTEMIC INSECT KILLER CONCENTRATE	05/05/2010	<u>239-2461</u>	Active (AUG 03, 1979)	9.4% acephate (ref. 5)
ORTHO ORTHENE FIRE ANT KILLER II	06/27/2016	<u>239-2632</u>	Active (MAY 13, 1998)	50% acephate (ref. 8)
ORTHO ORTHENE FIRE ANT KILLER I	06/27/2016	<u>239-2632</u>	Active (MAY 13, 1998)	50% acephate (ref. 8)
Omni Brand Acephate 97 SG	05/02/2018	<u>5905-620</u>	Active (MAY 02, 2018)	Reg. after Dec. 2001
PAYLOAD 15 GRANULAR	09/14/2012	<u>5481-8976</u>	Active (FEB 05, 1993)	15% acephate (ref. 6)
PINPOINT 15 GRANULAR	08/13/2012	<u>5481-8977</u>	Active (OCT 12, 1994)	15% acephate (ref. 10)
PRESCRIPTION TREATMENT BRAND 1300 ORTHENE* TR MICRO TOTAL RELEASE INSECTICIDE	09/01/2016	<u>499-421</u>	Active (OCT 14, 1997)	12% acephate (ref. 1)
PRESCRIPTION TREATMENT BRAND TAME/ORTHENE TR	08/20/2013	<u>499-441</u>	Active (OCT 22, 2002)	Reg. after Dec. 2001
QUALI-RO ACEPHATE 90% PRILLS	02/11/2016	<u>53883-253</u>	Active (APR 01, 2009)	Reg. after Dec. 2001
STARTUP ACE97 SEED TREATMENT	01/29/2013	<u>70506-8</u>	Active (OCT 21, 2002)	Reg. after Dec. 2001
STartUP ACE98 Seed Treatment	04/03/2020	<u>70506-352</u>	Active (SEP 18, 2019)	Reg. after Dec. 2001
SURRENDER	04/22/2015	<u>53883-133</u>	Active (JAN 14, 2005)	Reg. after Dec. 2001

SURRENDER BRAND FIRE ANT KILLER ACEPHATE 75%	04/22/2015	<u>53883-133</u>	Active (JAN 14, 2005)	Reg. after Dec. 2001
SURRENDER FIRE ANT KILLER INSECTICIDE	04/22/2015	<u>53883-133</u>	Active (JAN 14, 2005)	Reg. after Dec. 2001
SYSTEMIC PLANT CARE	06/11/2018	<u>192-223</u>	Active (JUN 11, 2018)	Reg. after Dec. 2001

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Product Name	Accepted Date	EPA Reg No	Current Status
TAME/ORTHENE TR AND DISCRIPTOR TOTAL RELEASE INSECTICIDE	08/20/2013	499-441	Active (OCT 22, 2002) Reg. after Dec. 2001
TIDE ACEPHATE 90 WDG	11/27/2012	84229-7	Active (NOV 25, 2009) Reg. after Dec. 2001
TIDE ACEPHATE 90 WSG	07/31/2014	80697-12	Active (JUL 31, 2014) Reg. after Dec. 2001
TIDE ACEPHATE 90SG	07/31/2014	80697-12	Active (JUL 31, 2014) Reg. after Dec. 2001
TIDE ACEPHATE 97 GS COTTONSEED	09/18/2014	80697-13	Active (SEP 18, 2014) Reg. after Dec. 2001
TIDE ACEPHATE 97 SG	09/18/2014	80697-13	Active (SEP 18, 2014) Reg. after Dec. 2001
WHITMIRE MICRO-GEN PT 1320 TR	09/01/2016	499-421	Active (OCT 14, 1997) 12% acephate (ref. 1)
WHITMIRE TC 136	08/20/2013	499-441	Active (OCT 22, 2002) Reg. after Dec. 2001

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Attachment B



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You can use the field below to search specific products or product numbers from your results.

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Product Name	Accepted Date	EPA Reg No	Current Status	
ACECAP SYSTEMIC INSECTICIDE IMPLANTS	-	HI810001	Inactive (OCT 10, 1989)	State registration; implant
ACEPHATE 75% SP	01/05/2011	81964-2	Inactive (JUL 15, 2011)	Soluble powder
ACEPHATE 75SP	-	AL020008	Inactive (FEB 06, 2013)	State registration
ACEPHATE 75SP	-	CO000003	Inactive (FEB 06, 2013)	State registration
ACEPHATE 75SP	-	CO000004	Inactive (SEP 15, 2009)	State registration
ACEPHATE 75SP	-	ID020019	Inactive (FEB 06, 2013)	State registration
ACEPHATE 75SP	-	UT000001	Inactive (FEB 06, 2013)	State registration
ACEPHATE 75SP	-	WI020018	Inactive (FEB 06, 2013)	State registration
ACEPHATE 90 SP	-	AR040001	Inactive (JUN 17, 2004)	State registration
ACEPHATE 90 SP	-	LA040007	Inactive (AUG 09, 2004)	State registration

ACEPHATE 90 SP	-	<u>LA050008</u>	Inactive (SEP 15, 2009)	State registration
ACEPHATE 90 SP COTTON INSECTICIDE	04/25/2007	<u>66222-122</u>	Inactive (APR 13, 2018)	SP, soluble powder
ACEPHATE 90 SP COTTON INSECTICIDE	-	<u>MS050010</u>	Inactive (MAR 17, 2015)	State registration
ACEPHATE 90 WDG	09/27/2011	<u>72693-4</u>	Inactive (AUG 26, 2015)	Reg. after Dec. 2001
ACEPHATE 90% SP	11/27/2012	<u>81964-3</u>	Inactive (NOV 15, 2018)	SP, soluble powder
ACEPHATE 90SP	-	<u>MS020019</u>	Inactive (FEB 06, 2013)	State registration
ACEPHATE 90SP	-	<u>MS020021</u>	Inactive (AUG 22, 2006)	State registration
ACEPHATE 90SP	-	<u>LA050005</u>	Inactive (FEB 06, 2013)	State registration
ACEPHATE 90WDG	12/19/2012	<u>85678-29</u>	Inactive (AUG 03, 2016)	Reg. after Dec. 2001
ACEPHATE 97DF	05/03/2013	<u>85678-26</u>	Inactive (AUG 03, 2016)	Reg. after Dec. 2001
ACEPHATE E 75 INSECTICIDE	02/12/2009	<u>228-662</u>	Inactive (OCT 25, 2011)	Reg. after Dec. 2001
ACEPHATE E 75 WP INSECTICIDE	02/12/2009	<u>228-662</u>	Inactive (OCT 25, 2011)	Reg. after Dec. 2001
ACEPHATE E 90 EG INSECTICIDE	08/22/2007	<u>228-661</u>	Inactive (OCT 25, 2011)	Reg. after Dec. 2001
ACEPHATE E-AG 90 EG INSECTICIDE	08/22/2007	<u>228-661</u>	Inactive (OCT 25, 2011)	Reg. after Dec. 2001
ACEPHATE G-PRO 97 INSECTICIDE	12/14/2004	<u>79676-15</u>	Inactive (JUL 18, 2006)	Reg. after Dec. 2001
ACEPHATE PRO 75 SP INSECTICIDE	02/26/2009	<u>72159-6</u>	Inactive (JUL 15, 2011)	Reg. after Dec. 2001
ACEPHATE PRO 90 SP INSECTICIDE	02/26/2009	<u>72159-10</u>	Inactive (JUL 15, 2011)	Reg. after Dec. 2001
ACEPHATE TECHNICAL	09/13/2007	<u>66330-357</u>	Inactive (OCT 25, 2011)	Reg. after Dec. 2001
ACEPHATE TECHNICAL	03/13/2013	<u>85678-16</u>	Inactive (AUG 03, 2016)	Reg. after Dec. 2001
ACEPHATE TREE, TURF & ORNAMENTAL SPRAY 97	05/24/2005	<u>228-440</u>	Inactive (OCT 25, 2011)	Reg. after Dec. 2001

BIFENTHRIN NURSERY G	-	<u>AR050006</u>	Inactive (MAR 22, 2017)	State registration
BONIDE SYSTEMIC INSECTICIDE GRANULES	01/22/2002	<u>4-444</u>	Inactive (MAR 11, 2009)	Reg. after Dec. 2001
BONIDE SYSTEMIC INSECTICIDE GRANULES WITH FERTILIZER 8-12-4	03/04/2002	<u>4-445</u>	Inactive (MAR 11, 2009)	Reg. after Dec. 2001
CHEMINOVA ACEPHATE 75SP	-	<u>67760-65</u>	Inactive (OCT 14, 2008)	Soluble powder
CHEMINOVA ACEPHATE 90SP	06/15/2005	<u>67760-66</u>	Inactive (OCT 14, 2008)	Soluble powder
CLEAN CROP ACEPHATE 80 DF SEED PROTECTANT	05/17/1991	<u>34704-694</u>	Inactive (JUL 18, 2006)	80% acephate
DIBROM 8 EMULSIVE	-	<u>FL890008</u>	Inactive (JAN 09, 1997)	State registration
ECO2000-FB	05/22/2006	<u>1677-192</u>	Inactive (JUL 16, 2007)	likely powder, sold in vial (ref. 11)
GULF MOTH PROOFER	11/12/1987	<u>239-2537</u>	Inactive (MAY 01, 1987)	3% acephate (ref. 12)
GUSTAFSON ACEPHATE 90 SEED PROTECTANT	-	<u>7501-137</u>	Inactive (SEP 30, 1991)	no label (ref. 13)
HI-YIELD (R) ACEPHATE	06/19/2009	<u>7401-463</u>	Inactive (OCT 25, 2011)	Reg. after Dec. 2001
ISOTOX INSECT KILLER FORMULA III	10/19/1989	<u>239-2575</u>	Inactive (JUL 29, 1999)	not specified (Ref. 14)
ISOTOX INSECT KILLER FORMULA IV	05/14/2004	<u>239-2595</u>	Inactive (OCT 14, 2008)	8% acephate
MICRO TRIPLE-KILL "GO" DUST	-	<u>4841-6168</u>	Inactive (MAY 03, 1982)	Powders (Dust)
MICRO TRIPLE-KILL "OF" 5 DUST	-	<u>4841-6129</u>	Inactive (MAY 03, 1982)	
MICRO TRIPLE-KILL "OF" DUST	-	<u>4841-6167</u>	Inactive (MAY 03, 1982)	
MICRO TRIPLE-KILL "OL" DUST	-	<u>4841-6140</u>	Inactive (JUN 14, 1982)	
MICRO TRIPLE-KILL O DUST	-	<u>4841-6135</u>	Inactive (JUN 14, 1982)	
MICRO TRIPLE-KILL OL 5 DUST	-	<u>4841-6130</u>	Inactive (JUN 14, 1982)	

6/3/2020

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MULTITUDE 75WSP
INSECTICIDE

08/12/2005

228-448

Inactive (OCT
25, 2011)

water soluble powder

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Product Name	Accepted Date	EPA Reg No	Current Status
ORTHENE 2.5 PROFESSIONAL SPRAY	12/01/1982	239-2464	Inactive (DEC 31, 1987)
ORTHENE 75 S SOLUBLE POWDER	-	AL850005	Inactive (OCT 10, 1989)
ORTHENE 75 S SOLUBLE POWDER	-	AR760004	Inactive (JUN 15, 1981)
ORTHENE 75 S SOLUBLE POWDER	-	AR810047	Inactive (SEP 30, 1991)
ORTHENE 75 S SOLUBLE POWDER	-	AR860003	Inactive (OCT 10, 1989)
ORTHENE 75 S SOLUBLE POWDER	-	AZ770019	Inactive (JUL 15, 1982)
ORTHENE 75 S SOLUBLE POWDER	-	AZ770025	Inactive (AUG 23, 1982)
ORTHENE 75 S SOLUBLE POWDER	-	AZ790025	Inactive (OCT 14, 2008)
ORTHENE 75 S SOLUBLE POWDER	-	AZ790031	Inactive (OCT 10, 1989)
ORTHENE 75 S SOLUBLE POWDER	-	AZ790042	Inactive (FEB 05, 1985)

spray/liquid

State registrations for soluble powder product

ORTHENE 75 S SOLUBLE POWDER	-	AZ800026	Inactive (JUN 24, 1985)	*
ORTHENE 75 S SOLUBLE POWDER	-	AZ940007	Inactive (JUL 19, 1995)	*
ORTHENE 75 S SOLUBLE POWDER	-	CA770298	Inactive (JUL 18, 1982)	*
ORTHENE 75 S SOLUBLE POWDER	-	CA790126	Inactive (JUL 16, 1984)	*
ORTHENE 75 S SOLUBLE POWDER	-	CA790172	Inactive (OCT 10, 1989)	*
ORTHENE 75 S SOLUBLE POWDER	-	CA790179	Inactive (OCT 29, 1984)	*
ORTHENE 75 S SOLUBLE POWDER	-	CA790186	Inactive (OCT 10, 1989)	*
ORTHENE 75 S SOLUBLE POWDER	-	CA790207	Inactive (OCT 10, 1989)	*
ORTHENE 75 S SOLUBLE POWDER	-	CA790230	Inactive (DEC 04, 1984)	*
ORTHENE 75 S SOLUBLE POWDER	-	CA800174	Inactive (NOV 12, 1985)	*
ORTHENE 75 S SOLUBLE POWDER	-	CA820087	Inactive (OCT 10, 1989)	*
ORTHENE 75 S SOLUBLE POWDER	-	CA870020	Inactive (JUL 29, 2002)	*
ORTHENE 75 S SOLUBLE POWDER	-	CA870064	Inactive (JUL 11, 2001)	*
ORTHENE 75 S SOLUBLE POWDER	-	CA870071	Inactive (MAY 31, 2018)	*
ORTHENE 75 S SOLUBLE POWDER	-	CA870074	Inactive (SEP 30, 1991)	*
ORTHENE 75 S SOLUBLE POWDER	-	CO790009	Inactive (JAN 18, 1991)	*
ORTHENE 75 S SOLUBLE POWDER	-	CO800005	Inactive (OCT 10, 1989)	*
ORTHENE 75 S SOLUBLE POWDER	-	CO810018	Inactive (JAN 18, 1991)	*
ORTHENE 75 S SOLUBLE POWDER	-	CO980004	Inactive (JUN 16, 2008)	*
ORTHENE 75 S SOLUBLE POWDER	-	DE800002	Inactive (JAN 18, 1991)	*
ORTHENE 75 S SOLUBLE POWDER	-	DE850002	Inactive (OCT 10, 1989)	*

State registrations for soluble powder product

ORTHENE 75 S SOLUBLE POWDER	-	FL790033	Inactive (DEC 13, 1984)
ORTHENE 75 S SOLUBLE POWDER	-	FL800053	Inactive (JAN 18, 1991)
ORTHENE 75 S SOLUBLE POWDER	-	FL820076	Inactive (OCT 10, 1989)
ORTHENE 75 S SOLUBLE POWDER	-	FL820084	Inactive (OCT 21, 1987)
ORTHENE 75 S SOLUBLE POWDER	-	FL830029	Inactive (JAN 18, 1991)
ORTHENE 75 S SOLUBLE POWDER	-	FL860007	Inactive (JAN 18, 1991)
ORTHENE 75 S SOLUBLE POWDER	-	FL870021	Inactive (JAN 18, 1991)
ORTHENE 75 S SOLUBLE POWDER	-	FL880006	Inactive (JAN 18, 1991)
ORTHENE 75 S SOLUBLE POWDER	-	FL890009	Inactive (SEP 30, 1991)
ORTHENE 75 S SOLUBLE POWDER	-	FL890016	Inactive (FEB 07, 1994)
ORTHENE 75 S SOLUBLE POWDER	-	FL890017	Inactive (APR 13, 2018)
ORTHENE 75 S SOLUBLE POWDER	-	FL890018	Inactive (APR 13, 2018)
ORTHENE 75 S SOLUBLE POWDER	-	FL890019	Inactive (APR 13, 2018)
ORTHENE 75 S SOLUBLE POWDER	-	FL890022	Inactive (APR 13, 2018)
ORTHENE 75 S SOLUBLE POWDER	-	FL910011	Inactive (JUL 21, 2005)
ORTHENE 75 S SOLUBLE POWDER	-	FL940002	Inactive (APR 13, 2018)
ORTHENE 75 S SOLUBLE POWDER	-	GA880004	Inactive (APR 13, 2018)
ORTHENE 75 S SOLUBLE POWDER	-	GA940001	Inactive (JUL 09, 1997)
ORTHENE 75 S SOLUBLE POWDER	-	GA960002	Inactive (APR 13, 2018)

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Product Name	Accepted Date	EPA Reg No	Current Status
ORTHENE 75 S SOLUBLE POWDER	-	HI790004	Inactive (OCT 10, 1989)
ORTHENE 75 S SOLUBLE POWDER	-	HI870004	Inactive (NOV 17, 1994)
ORTHENE 75 S SOLUBLE POWDER	-	ID800044	Inactive (AUG 12, 1985)
ORTHENE 75 S SOLUBLE POWDER	-	ID800057	Inactive (DEC 16, 1985)
ORTHENE 75 S SOLUBLE POWDER	-	IL800005	Inactive (MAY 28, 1985)
ORTHENE 75 S SOLUBLE POWDER	-	KS800008	Inactive (JUN 16, 1985)
ORTHENE 75 S SOLUBLE POWDER	-	LA820036	Inactive (OCT 10, 1989)
ORTHENE 75 S SOLUBLE POWDER	-	LA860003	Inactive (OCT 10, 1989)
ORTHENE 75 S SOLUBLE POWDER	-	MA840003	Inactive (OCT 10, 1989)
ORTHENE 75 S SOLUBLE POWDER	-	MA960002	Inactive (JUL 21, 2005)
ORTHENE 75 S SOLUBLE POWDER	-	MD800015	Inactive (JAN 18, 1991)

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ORTHENE 75 S SOLUBLE POWDER	-	MD850002	Inactive (OCT 10, 1989)
ORTHENE 75 S SOLUBLE POWDER	-	MI790024	Inactive (JUL 26, 1984)
ORTHENE 75 S SOLUBLE POWDER	-	MN790007	Inactive (OCT 10, 1989)
ORTHENE 75 S SOLUBLE POWDER	-	MO800017	Inactive (OCT 10, 1989)
ORTHENE 75 S SOLUBLE POWDER	-	MO800018	Inactive (JUN 24, 1985)
ORTHENE 75 S SOLUBLE POWDER	-	MS760002	Inactive (MAY 27, 1981)
ORTHENE 75 S SOLUBLE POWDER	-	MS790022	Inactive (AUG 02, 1984)
ORTHENE 75 S SOLUBLE POWDER	-	MS800039	Inactive (MAY 30, 1985)
ORTHENE 75 S SOLUBLE POWDER	-	MS810056	Inactive (OCT 10, 1989)
ORTHENE 75 S SOLUBLE POWDER	-	MS820023	Inactive (JUL 09, 1997)
ORTHENE 75 S SOLUBLE POWDER	-	MS820042	Inactive (JAN 18, 1991)
ORTHENE 75 S SOLUBLE POWDER	-	MS890011	Inactive (OCT 15, 2004)
ORTHENE 75 S SOLUBLE POWDER	-	MT790031	Inactive (SEP 11, 1984)
ORTHENE 75 S SOLUBLE POWDER	-	NC850005	Inactive (OCT 10, 1989)
ORTHENE 75 S SOLUBLE POWDER	-	NC870006	Inactive (OCT 14, 2008)
ORTHENE 75 S SOLUBLE POWDER	-	NC930003	Inactive (OCT 14, 2008)
ORTHENE 75 S SOLUBLE POWDER	-	ND800003	Inactive (APR 08, 1985)
ORTHENE 75 S SOLUBLE POWDER	-	ND810020	Inactive (JAN 18, 1991)
ORTHENE 75 S SOLUBLE POWDER	-	NE780024	Inactive (SEP 25, 1983)
ORTHENE 75 S SOLUBLE POWDER	-	NE820015	Inactive (OCT 10, 1989)
ORTHENE 75 S SOLUBLE POWDER	-	NE840001	Inactive (JAN 18, 1991)

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ORTHENE 75 S SOLUBLE POWDER	-	NJ780007	Inactive (JUN 22, 1983)
ORTHENE 75 S SOLUBLE POWDER	-	NJ790024	Inactive (AUG 27, 1984)
ORTHENE 75 S SOLUBLE POWDER	-	NM750001	Inactive (JAN 22, 1991)
ORTHENE 75 S SOLUBLE POWDER	-	NM790007	Inactive (OCT 10, 1989)
ORTHENE 75 S SOLUBLE POWDER	-	NM800010	Inactive (JUL 09, 1997)
ORTHENE 75 S SOLUBLE POWDER	-	NM870001	Inactive (OCT 10, 1989)
ORTHENE 75 S SOLUBLE POWDER	-	NV800008	Inactive (JUL 24, 1985)
ORTHENE 75 S SOLUBLE POWDER	-	NY780017	Inactive (OCT 10, 1989)
ORTHENE 75 S SOLUBLE POWDER	-	NY790008	Inactive (SEP 30, 1991)
ORTHENE 75 S SOLUBLE POWDER	-	OH790006	Inactive (APR 19, 1984)
ORTHENE 75 S SOLUBLE POWDER	-	OK770012	Inactive (OCT 10, 1989)
ORTHENE 75 S SOLUBLE POWDER	-	OK800012	Inactive (JUL 21, 2005)
ORTHENE 75 S SOLUBLE POWDER	-	OK810020	Inactive (JUL 09, 1997)
ORTHENE 75 S SOLUBLE POWDER	-	OK890004	Inactive (JUL 09, 1997)
ORTHENE 75 S SOLUBLE POWDER	-	OK890005	Inactive (JUL 29, 2002)
ORTHENE 75 S SOLUBLE POWDER	-	OR010034	Inactive (APR 13, 2018)
ORTHENE 75 S SOLUBLE POWDER	-	OR800072	Inactive (JUL 29, 1985)
ORTHENE 75 S SOLUBLE POWDER	-	OR800091	Inactive (DEC 02, 1985)

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Product Name	Accepted Date	EPA Reg No	Current Status
ORTHENE 75 S SOLUBLE POWDER	-	OR810031	Inactive (APR 15, 1986)
ORTHENE 75 S SOLUBLE POWDER	-	OR830040	Inactive (JAN 22, 1991)
ORTHENE 75 S SOLUBLE POWDER	-	OR890015	Inactive (JAN 30, 1998)
ORTHENE 75 S SOLUBLE POWDER	-	OR930013	Inactive (DEC 27, 1998)
ORTHENE 75 S SOLUBLE POWDER	-	OR930014	Inactive (DEC 27, 1998)
ORTHENE 75 S SOLUBLE POWDER	-	OR970003	Inactive (DEC 04, 2002)
ORTHENE 75 S SOLUBLE POWDER	-	OR970006	Inactive (JUL 12, 2010)
ORTHENE 75 S SOLUBLE POWDER	-	SC860003	Inactive (OCT 10, 1989)
ORTHENE 75 S SOLUBLE POWDER	-	SC880001	Inactive (MAR 17, 2015)
ORTHENE 75 S SOLUBLE POWDER	-	SD790011	Inactive (OCT 10, 1989)
ORTHENE 75 S SOLUBLE POWDER	-	SD810011	Inactive (OCT 10, 1989)

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ORTHENE 75 S SOLUBLE POWDER	-	SD870002	Inactive (SEP 30, 1991)
ORTHENE 75 S SOLUBLE POWDER	-	SD870003	Inactive (OCT 10, 1989)
ORTHENE 75 S SOLUBLE POWDER	-	TN790005	Inactive (OCT 10, 1989)
ORTHENE 75 S SOLUBLE POWDER	-	TN790018	Inactive (MAY 17, 1984)
ORTHENE 75 S SOLUBLE POWDER	-	TN930002	Inactive (JUL 29, 1999)
ORTHENE 75 S SOLUBLE POWDER	-	TN980001	Inactive (JUL 21, 2005)
ORTHENE 75 S SOLUBLE POWDER	-	TX790014	Inactive (OCT 04, 2010)
ORTHENE 75 S SOLUBLE POWDER	-	TX790020	Inactive (OCT 10, 1989)
ORTHENE 75 S SOLUBLE POWDER	-	TX810035	Inactive (JUL 09, 1997)
ORTHENE 75 S SOLUBLE POWDER	-	TX830021	Inactive (OCT 10, 1989)
ORTHENE 75 S SOLUBLE POWDER	-	TX830022	Inactive (APR 13, 2018)
ORTHENE 75 S SOLUBLE POWDER	-	TX840012	Inactive (OCT 10, 1989)
ORTHENE 75 S SOLUBLE POWDER	-	TX890003	Inactive (JUL 09, 1997)
ORTHENE 75 S SOLUBLE POWDER	-	TX900001	Inactive (APR 13, 2018)
ORTHENE 75 S SOLUBLE POWDER	-	TX980005	Inactive (SEP 04, 2002)
ORTHENE 75 S SOLUBLE POWDER	-	UT800008	Inactive (JUN 23, 1985)
ORTHENE 75 S SOLUBLE POWDER	-	UT980002	Inactive (JUN 16, 2008)
ORTHENE 75 S SOLUBLE POWDER	-	WA800062	Inactive (JUL 30, 1985)
ORTHENE 75 S SOLUBLE POWDER	-	WA800099	Inactive (OCT 10, 1989)
ORTHENE 75 S SOLUBLE POWDER	-	WA810029	Inactive (OCT 10, 1989)
ORTHENE 75 S SOLUBLE POWDER	-	WA810064	Inactive (JAN 08, 2014)

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ORTHENE 75 S SOLUBLE POWDER	-	WA890026	Inactive (OCT 17, 1994)
ORTHENE 75 S SOLUBLE POWDER	-	WA950035	Inactive (JUL 16, 2007)
ORTHENE 75 S SOLUBLE POWDER	-	WA960024	Inactive (JAN 08, 2014)
ORTHENE 75 S SOLUBLE POWDER	-	WI020016	Inactive (JUL 16, 2007)
ORTHENE 75 S SOLUBLE POWDER	-	WI960007	Inactive (JUL 21, 2005)
ORTHENE 75 S SOLUBLE POWDER	-	WY790007	Inactive (SEP 18, 1984)
ORTHENE 75 S SOLUBLE POWDER	-	WY810003	Inactive (JAN 18, 1991)
ORTHENE 75 S SOLUBLE POWDER	-	WI060002	Inactive (APR 13, 2018)
ORTHENE 75 S SOLUBLE POWDER (WATER SOLUBLE PACKETS)	-	WA050002	Inactive (NOV 15, 2018)
ORTHENE 75 S SOLUTION POWDER	-	FL810044	Inactive (OCT 10, 1989)
ORTHENE 75 WSP (INSECTICIDE IN A WATER SOLUBLE BAG)	05/18/1998	59639-89	Inactive (JUN 03, 2015)
ORTHENE 75 WSP (INSECTICIDE IN A WATER SOLUBLE BAG)	-	MA960003	Inactive (JUL 21, 2005)
ORTHENE 75 WSP (INSECTICIDE IN A WATER SOLUBLE BAG)	-	OR970007	Inactive (FEB 17, 2006)
ORTHENE 75 WSP (INSECTICIDE IN A WATER SOLUBLE BAG)	-	WA960025	Inactive (FEB 17, 2006)
ORTHENE 75 WSP (INSECTICIDE IN A WATER SOLUBLE BAG)	-	WI020017	Inactive (JUL 16, 2007)
ORTHENE 75 WSP (INSECTICIDE IN A WATER SOLUBLE BAG)	-	WI960008	Inactive (JUL 21, 2005)

This page contains state registrations for soluble powder plus one EPA registration for a water soluble product.

ORTHENE 75 WSP (INSECTICIDE IN A WATER SOLUBLE BAG)	-	<u>NJ960005</u>	Inactive (JUL 18, 2006)
ORTHENE 75S SOLUBLE POWDER	-	<u>GA810013</u>	Inactive (JAN 18, 1991)

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Product Name	Accepted Date	EPA Reg No	Current Status	
ORTHENE 75S SOLUBLE POWDER	-	ID810018	Inactive (APR 28, 1986)	State registration
ORTHENE 80 SEED PROTECTANT	05/24/1994	59639-29	Inactive (MAR 04, 2005)	80% acephate
ORTHENE 80 WSP SEED PROTECTANT	12/15/1995	59639-85	Inactive (MAR 04, 2005)	water soluble powder
ORTHENE 85 CONCENTRATE	01/25/1979	239-2447	Inactive (DEC 31, 1987)	liquid formulation
ORTHENE 90 S	-	AR890008	Inactive (OCT 04, 2010)	State registration
ORTHENE 90 S	-	AR900002	Inactive (SEP 30, 1991)	State registration
ORTHENE 90 S	-	AZ000008	Inactive (OCT 10, 2001)	State registration
ORTHENE 90 S	-	LA890004	Inactive (SEP 30, 1991)	State registration
ORTHENE 90 S	-	LA890014	Inactive (JUL 09, 1997)	State registration
ORTHENE 90 S	-	MO900001	Inactive (NOV 12, 1992)	State registration
ORTHENE 90 S	-	MS890004	Inactive (SEP 30, 1991)	State registration

ORTHENE 90 S	-	<u>MS970010</u>	Inactive (OCT 04, 2010)	State registration
ORTHENE 90 S	-	<u>OK890002</u>	Inactive (OCT 04, 2010)	State registration
ORTHENE 90 S	-	<u>TN900004</u>	Inactive (SEP 30, 1991)	State registration
ORTHENE 90 S	-	<u>TX910003</u>	Inactive (OCT 04, 2010)	State registration
ORTHENE 90 S	-	<u>TX940001</u>	Inactive (OCT 04, 2010)	State registration
ORTHENE 90 S	-	<u>TX970011</u>	Inactive (APR 13, 2018)	State registration
ORTHENE 90 S	-	<u>9639-33</u>	Inactive (AUG 14, 2003)	soluble powder
ORTHENE 90 WSP	05/18/1998	<u>59639-86</u>	Inactive (JUN 03, 2015)	water soluble powder
ORTHENE 90 WSP	-	<u>TX960003</u>	Inactive (JUL 16, 2007)	State registration
ORTHENE 90S	-	<u>LA050004</u>	Inactive (OCT 04, 2010)	State registration
ORTHENE 90S	-	<u>AR050005</u>	Inactive (OCT 04, 2010)	State registration
ORTHENE 97	09/14/2009	<u>ID090016</u>	Inactive (MAR 14, 2019)	State registration
ORTHENE 97	09/15/2009	<u>WA090022</u>	Inactive (APR 13, 2018)	State registration
ORTHENE 97	-	<u>TN050001</u>	Inactive (MAR 14, 2019)	State registration
ORTHENE 97	-	<u>WA050014</u>	Inactive (APR 13, 2018)	State registration
ORTHENE 97	-	<u>OR060019</u>	Inactive (APR 13, 2018)	State registration
ORTHENE 97	-	<u>WI060003</u>	Inactive (APR 13, 2018)	State registration
ORTHENE 97	-	<u>ID060019</u>	Inactive (MAR 17, 2015)	State registration
ORTHENE 97	-	<u>WA060017</u>	Inactive (JAN 08, 2014)	State registration
ORTHENE 97 PELLETS	-	<u>CO000006</u>	Inactive (OCT 04, 2010)	State registration
ORTHENE 97 PELLETS	-	<u>DE000001</u>	Inactive (JUL 11, 2001)	State registration

ORTHENE 97 PELLETS	-	<u>OH000006</u>	Inactive (OCT 15, 2004)	State registration
ORTHENE 97 PELLETS	-	<u>OR000020</u>	Inactive (JUL 12, 2010)	State registration
ORTHENE 97 PELLETS	-	<u>OR010035</u>	Inactive (APR 13, 2018)	State registration
ORTHENE 97 PELLETS	-	<u>TN000001</u>	Inactive (JUL 16, 2007)	State registration
ORTHENE 97 PELLETS	-	<u>TX000005</u>	Inactive (APR 13, 2018)	State registration
ORTHENE 97 PELLETS	-	<u>UT000003</u>	Inactive (APR 13, 2018)	State registration
ORTHENE 97 PELLETS	-	<u>WA000021</u>	Inactive (JAN 08, 2014)	State registration
ORTHENE 97 PELLETS	-	<u>WI000003</u>	Inactive (JUL 16, 2007)	State registration
ORTHENE 97 PELLETS	-	<u>ID060099</u>	Inactive (OCT 04, 2010)	State registration
ORTHENE FOREST SPRAY	05/07/1976	<u>239-2443</u>	Inactive (DEC 31, 1987)	liquid/spray
ORTHENE FOREST SPRAY	-	<u>AZ800025</u>	Inactive (OCT 10, 1989)	State registration
ORTHENE FOREST SPRAY	-	<u>CA800175</u>	Inactive (NOV 12, 1985)	State registration
ORTHENE FOREST SPRAY	-	<u>CO800014</u>	Inactive (OCT 10, 1989)	State registration
ORTHENE FOREST SPRAY	-	<u>ID800045</u>	Inactive (OCT 10, 1989)	State registration
ORTHENE FOREST SPRAY	-	<u>ME770002</u>	Inactive (OCT 10, 1989)	State registration
ORTHENE FOREST SPRAY	-	<u>MT820004</u>	Inactive (OCT 10, 1989)	State registration
ORTHENE FOREST SPRAY	-	<u>ND810003</u>	Inactive (MAR 19, 1986)	State registration
ORTHENE FOREST SPRAY	-	<u>NE800020</u>	Inactive (OCT 10, 1989)	State registration

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Product Name	Accepted Date	EPA Reg No	Current Status
ORTHENE FOREST SPRAY	-	NJ790004	Inactive (OCT 10, 1989) State registration State
ORTHENE FOREST SPRAY	-	NM800023	Inactive (OCT 10, 1989) registration State
ORTHENE FOREST SPRAY	-	NV800009	Inactive (OCT 10, 1989) registration State
ORTHENE FOREST SPRAY	-	OK810009	Inactive (OCT 10, 1989) registration State
ORTHENE FOREST SPRAY	-	OR770035	Inactive (JUN 15, 1982) registration State
ORTHENE FOREST SPRAY	-	OR800073	Inactive (OCT 10, 1989) registration State
ORTHENE FOREST SPRAY	-	SD810010	Inactive (OCT 10, 1989) registration State
ORTHENE FOREST SPRAY	-	UT800007	Inactive (JUN 23, 1985) registration State
ORTHENE FOREST SPRAY	-	WA800063	Inactive (OCT 10, 1989) registration State
ORTHENE FOREST SPRAY	-	WY800006	Inactive (OCT 10, 1989) registration
ORTHENE GRANULES	07/28/1988	239-2472	Inactive (MAR 11, 2009) 1.5% acephate (ref. 16)

ORTHENE INSECT SPRAY	11/02/1982	<u>239-2436</u>	Inactive (JUL 21, 2005)	liquid/spray
ORTHENE INSECT SPRAY	-	<u>IL820009</u>	Inactive (OCT 10, 1989)	State registration
ORTHENE INSECT SPRAY	-	<u>MI790018</u>	Inactive (MAY 07, 1984)	State registration
ORTHENE INSECT SPRAY	-	<u>NY780014</u>	Inactive (OCT 10, 1989)	State registration
ORTHENE INSECT SPRAY	-	<u>NY790007</u>	Inactive (OCT 10, 1989)	State registration
ORTHENE INSECT SPRAY	-	<u>OH790007</u>	Inactive (MAY 09, 1984)	State registration
ORTHENE INSECT SPRAY	-	<u>OR770020</u>	Inactive (JAN 18, 1991)	State registration
ORTHENE INSECT SPRAY	-	<u>WA770009</u>	Inactive (OCT 10, 1989)	State registration
ORTHENE MFG	04/12/1984	<u>62499-26</u>	Inactive (JUN 16, 1992)	75% acephate (ref. 17)
ORTHENE ORNAMENTAL INSECT SPRAY	01/30/2002	<u>239-2440</u>	Inactive (JUL 21, 2005)	liquid/spray
ORTHENE PROFESSIONAL ROACH SPRAY	03/14/1983	<u>239-2482</u>	Inactive (OCT 10, 1989)	liquid/spray
ORTHENE SPECIALTY CONCENTRATE	03/26/1990	<u>59639-30</u>	Inactive (NOV 03, 1998)	liquid
ORTHENE SPECIALTY CONCENTRATE	-	<u>ME820005</u>	Inactive (JAN 22, 1991)	State registration
ORTHENE SPECIALTY CONCENTRATE	-	<u>NM820014</u>	Inactive (OCT 10, 1989)	State registration
ORTHENE SPECIALTY CONCENTRATE	-	<u>OR830056</u>	Inactive (JAN 22, 1991)	State registration
ORTHENE SYSTEMIC INSECT SPRAY	01/30/2003	<u>239-2406</u>	Inactive (JUL 21, 2005)	liquid/spray
ORTHENE SYSTEMIC INSECT SPRAY	-	<u>NY790006</u>	Inactive (OCT 10, 1989)	liquid/spray
ORTHENE SYSTEMIC ROSE & FLOWER CARE 8-8-8	07/28/1988	<u>239-2453</u>	Inactive (MAR 11, 2009)	1.5% acephate (ref. 18)
ORTHENE TECHNICAL	-	<u>62499-23</u>	Inactive (JUN 16, 1992)	not formulated
ORTHENE TOBACCO INSECT SPRAY	-	<u>GA820006</u>	Inactive (MAR 18, 1987)	liquid/spray

ORTHENE TOBACCO INSECT SPRAY	-	KY790010	Inactive (OCT 10, 1989)	State registration
ORTHENE TOBACCO INSECT SPRAY	-	KY800007	Inactive (OCT 10, 1989)	State registration
ORTHENE TOBACCO INSECT SPRAY	-	KY910002	Inactive (AUG 10, 1993)	State registration
ORTHENE TOBACCO INSECT SPRAY	-	NC800010	Inactive (APR 23, 1985)	State registration
ORTHENE TOBACCO INSECT SPRAY	-	NC820006	Inactive (MAR 25, 1987)	State registration
ORTHENE TOBACCO INSECT SPRAY	-	NC910004	Inactive (AUG 10, 1993)	State registration
ORTHENE TOBACCO INSECT SPRAY	-	SC810005	Inactive (MAR 31, 1986)	State registration
ORTHENE TOBACCO INSECT SPRAY	-	TN810011	Inactive (OCT 10, 1989)	State registration
ORTHENE TOBACCO INSECT SPRAY	-	TN810013	Inactive (OCT 10, 1989)	State registration
ORTHENE TOBACCO INSECT SPRAY	-	TN820011	Inactive (OCT 10, 1989)	State registration
ORTHENE TOBACCO INSECT SPRAY	-	TN870014	Inactive (NOV 17, 1994)	State registration
ORTHENE TOBACCO INSECT SPRAY	-	VA790024	Inactive (OCT 10, 1989)	State registration
ORTHENE TOBACCO INSECT SPRAY	-	VA810019	Inactive (OCT 10, 1989)	State registration
ORTHENE TOBACCO INSECT SPRAY	-	VA910007	Inactive (AUG 10, 1993)	State registration
ORTHENE TREE AND ORNAMENTAL SPRAY	07/26/2002	59639-28	Inactive (JUN 03, 2015)	liquid/spray
ORTHENE TREE AND ORNAMENTAL SPRAY	-	AR840013	Inactive (JAN 18, 1991)	State registration
ORTHENE TREE AND ORNAMENTAL SPRAY	-	AR840014	Inactive (JAN 18, 1991)	State registration
ORTHENE TREE AND ORNAMENTAL SPRAY	-	CA770064	Inactive (APR 20, 1982)	State registration
ORTHENE TREE AND ORNAMENTAL SPRAY	-	CA770486	Inactive (OCT 10, 1989)	State registration

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Chemical Name: Acephate

You can use the field below to search specific products or product numbers from your results.

If the result came up blank, you might want to click 'Inactive' or 'Active' button and see if it'll return any row(s).

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Product Name	Accepted Date	EPA Reg No	Current Status
ORTHENE TREE AND ORNAMENTAL SPRAY	-	CA780078	Inactive (JAN 22, 1991)
ORTHENE TREE AND ORNAMENTAL SPRAY	-	CA780162	Inactive (SEP 30, 1991)
ORTHENE TREE AND ORNAMENTAL SPRAY	-	CA780187	Inactive (OCT 10, 1989)
ORTHENE TREE AND ORNAMENTAL SPRAY	-	CA790045	Inactive (OCT 10, 1989)
ORTHENE TREE AND ORNAMENTAL SPRAY	-	CA790100	Inactive (OCT 10, 1989)
ORTHENE TREE AND ORNAMENTAL SPRAY	-	CA830027	Inactive (OCT 10, 1989)
ORTHENE TREE AND ORNAMENTAL SPRAY	-	CO780001	Inactive (FEB 08, 1983)
ORTHENE TREE AND ORNAMENTAL SPRAY	-	CO780010	Inactive (MAR 29, 1983)
ORTHENE TREE AND ORNAMENTAL SPRAY	-	CO790010	Inactive (MAY 15, 1984)
ORTHENE TREE AND ORNAMENTAL SPRAY	-	FL800005	Inactive (OCT 10, 1989)
ORTHENE TREE AND ORNAMENTAL SPRAY	-	FL820091	Inactive (NOV 12, 1992)

This page contains only state registrations for a liquid/spray product.

ORTHENE TREE AND ORNAMENTAL SPRAY	-	GA830003	Inactive (OCT 10, 1989)
ORTHENE TREE AND ORNAMENTAL SPRAY	-	HI770028	Inactive (JUL 27, 1982)
ORTHENE TREE AND ORNAMENTAL SPRAY	-	HI790006	Inactive (OCT 10, 1989)
ORTHENE TREE AND ORNAMENTAL SPRAY	-	IN800011	Inactive (OCT 10, 1989)
ORTHENE TREE AND ORNAMENTAL SPRAY	-	KS800009	Inactive (OCT 10, 1989)
ORTHENE TREE AND ORNAMENTAL SPRAY	-	LA820034	Inactive (OCT 10, 1989)
ORTHENE TREE AND ORNAMENTAL SPRAY	-	MD820016	Inactive (OCT 10, 1989)
ORTHENE TREE AND ORNAMENTAL SPRAY	-	MS830003	Inactive (JAN 18, 1991)
ORTHENE TREE AND ORNAMENTAL SPRAY	-	NE780029	Inactive (SEP 28, 1983)
ORTHENE TREE AND ORNAMENTAL SPRAY	-	NY780013	Inactive (OCT 10, 1989)
ORTHENE TREE AND ORNAMENTAL SPRAY	-	OH790015	Inactive (OCT 10, 1989)
ORTHENE TREE AND ORNAMENTAL SPRAY	-	OR770003	Inactive (JAN 18, 1991)
ORTHENE TREE AND ORNAMENTAL SPRAY	-	OR780028	Inactive (OCT 10, 1989)
ORTHENE TREE AND ORNAMENTAL SPRAY	-	OR800001	Inactive (OCT 10, 1989)
ORTHENE TREE AND ORNAMENTAL SPRAY	-	OR800005	Inactive (OCT 10, 1989)
ORTHENE TREE AND ORNAMENTAL SPRAY	-	WA770002	Inactive (FEB 14, 1982)
ORTHENE TREE AND ORNAMENTAL SPRAY	-	WA790028	Inactive (JAN 22, 1991)
ORTHENE TREE AND ORNAMENTAL SPRAY	-	WA790095	Inactive (OCT 10, 1989)
ORTHENE TREE AND ORNAMENTAL SPRAY	-	WA800023	Inactive (OCT 10, 1989)
ORTHENE TURF, TREE & ORNAMENTAL SPRAY 97	12/31/2009	CO090007	Inactive (MAY 31, 2018)

This page contains only state registrations for a liquid/spray product.

ORTHENE TURF, TREE & ORNAMENTAL SPRAY 97	04/02/2008	<u>MI080002</u>	Inactive (OCT 04, 2010)	State registration
ORTHENE TURF, TREE & ORNAMENTAL SPRAY WSP	-	<u>UT980003</u>	Inactive (MAR 17, 2015)	State registration
ORTHENE TURF, TREE & ORNAMENTAL SPRAYB WSP	07/22/1994	<u>59639-88</u>	Inactive (JUL 29, 1999)	water soluble powder
ORTHENE TURF, TREE & ORNAMENTAL SPRAYB WSP	-	<u>CO980003</u>	Inactive (APR 13, 2018)	State registration
ORTHENE TURF, TREE & ORNAMENTAL SPRAYB WSP	-	<u>OH970007</u>	Inactive (OCT 04, 2010)	State registration
ORTHENE TURF, TREE & ORNAMENTAL SPRAYB WSP	-	<u>TX980004</u>	Inactive (MAR 14, 2019)	State registration
ORTHENE TURF, TREE & ORNAMENTAL WSP	12/31/2009	<u>CO090006</u>	Inactive (FEB 14, 2019)	State registration
ORTHENE TURF, TREE, & ORNAMENTAL SPRAY	-	<u>OH970006</u>	Inactive (JUL 29, 2002)	State registration
ORTHENEX INSECT & DISEASE CONTROL FORMULA II	11/12/1987	<u>239-2574</u>	Inactive (JUL 29, 1999)	label incomplete; multiple active ingredients; likely powder (ref. 19)
ORTHENEX INSECT & DISEASE CONTROL FORMULA III	05/14/2004	<u>239-2594</u>	Inactive (OCT 14, 2008)	4% acephate (ref. 20)
ORTHO MULTIPURPOSE ROSE & FLOWER SPRAY	01/19/1984	<u>239-2468</u>	Inactive (DEC 31, 1987)	liquid/spray
ORTHO ORTHENE GARDEN SPRAY	05/29/1984	<u>239-2470</u>	Inactive (DEC 31, 1987)	liquid/spray
ORTHO ORTHENE PROFESSIONAL ROACH SPRAY	03/14/1983	<u>239-2482</u>	Inactive (OCT 10, 1989)	liquid/spray
ORTHO ORTHENE PROFESSIONAL SP CONCENTRATE	01/30/1981	<u>239-2462</u>	Inactive (DEC 22, 1987)	liquid concentrate
ORTHO ORTHENE SYSTEMIC INSECT CONTROL	-	<u>IL820010</u>	Inactive (OCT 10, 1989)	State registration
ORTHO ORTHENEX INSECT & DISEASE CONTROL	09/11/2008	<u>239-2476</u>	Inactive (JUN 01, 2011)	0.25% acephate (ref. 21)

ORTHO ORTHENEX INSECT & DISEASE CONTROL CONCENTRATE	05/14/2004	<u>239-2594</u>	Inactive (OCT 14, 2008)	4% acephate (ref. 20)
ORTHO PHALTAN 50 WETTABLE	-	<u>FL820087</u>	Inactive (OCT 21, 1987)	State registration
ORTHO SYSTEMIC INSECT KILLER CONCENTRATE	05/14/2004	<u>239-2595</u>	Inactive (OCT 14, 2008)	8% acephate (ref. 15)

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Chemical Name: Acephate

You can use the field below to search specific products or product numbers from your results.

If the result came up blank, you might want to click 'Inactive' or 'Active' button and see if it'll return any row(s).

Q
Go

Active
Inactive
Search Again

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Product Name	Accepted Date	EPA Reg No	Current Status
ORTHO SYSTEMIC ROSE & FLORAL SPRAY	09/11/2008	239-2476	Inactive (JUN 01, 2011)
ORTHO SYSTEMIC ROSE&FLOWER SPRAY	-	239-2439	Inactive (DEC 31, 1987)
ORTHO(R)ORTHENEX (R)INSECT & DISEASE CONTROL	09/11/2008	239-2476	Inactive (JUN 01, 2011)
ORTHO(R)ROSEPRIDE(R)INSECT, DISEASE & MITE CONTROL	09/11/2008	239-2476	Inactive (JUN 01, 2011)
ORTHOcide BOTRAN 10-5 DUST	-	CA790236	Inactive (DEC 04, 1984)
PAYLOAD 15 GRANULAR	-	AZ940002	Inactive (MAR 04, 2005)
PAYLOAD 15 GRANULAR	-	NM930001	Inactive (JUL 16, 2007)
PAYLOAD 15 GRANULAR	-	NM930002	Inactive (JUL 17, 2007)
PAYLOAD 15 GRANULAR	-	OK950001	Inactive (JUL 16, 2007)
PAYLOAD 15 GRANULAR	-	OK950002	Inactive (JUL 16, 2007)
PAYLOAD 15 GRANULAR	-	TX950003	Inactive (MAR 17, 2015)

spray

spray

0.25% acephate

0.25% acephate

State registrations, 15% acephate

PAYLOAD 15 GRANULAR	-	<u>VA940005</u>	Inactive (MAY 02, 1996)	State registrations, 15% acephate
PINPOINT 15 GRANULAR	-	<u>AL960001</u>	Inactive (MAR 28, 2001)	
PINPOINT 15 GRANULAR	-	<u>FL960007</u>	Inactive (APR 12, 2001)	
PINPOINT 15 GRANULAR	-	<u>GA970002</u>	Inactive (APR 22, 2003)	
PINPOINT 15 GRANULAR	-	<u>LA950011</u>	Inactive (JUL 31, 2000)	
PINPOINT 15 GRANULAR	-	<u>MI960007</u>	Inactive (JUL 09, 1997)	
PINPOINT 15 GRANULAR	-	<u>MS960016</u>	Inactive (NOV 26, 2001)	
PINPOINT 15 GRANULAR	-	<u>SC960001</u>	Inactive (FEB 13, 2001)	
PINPOINT 15 GRANULAR	-	<u>TX960011</u>	Inactive (JUL 17, 2001)	
POWER-X	06/19/1998	<u>70228-1</u>	Inactive (JUL 11, 2001)	
PRECISE ACEPHATE	05/21/2009	<u>84886-1</u>	Inactive (SEP 14, 2018)	4% acephate
PRECISE ACEPHATE	02/12/2009	<u>84886-2</u>	Inactive (SEP 14, 2018)	4% acephate
PRECISE ACEPHATE GREENHOUSE & NURSERY INSECTICIDE	02/12/2009	<u>84886-2</u>	Inactive (SEP 14, 2018)	4% acephate
PRECISE ACEPHATE GREENHOUSE AND NURSERY SYSTEMIC INSECTICIDE	02/12/2009	<u>84886-2</u>	Inactive (SEP 14, 2018)	4% acephate
PRECISE GREENHOUSE AND NURSERY SYSTEMIC INSECTICIDE	05/21/2009	<u>84886-1</u>	Inactive (SEP 14, 2018)	4% acephate
PRECISE NURSERY SYSTEMIC INSECTICIDE	05/21/2009	<u>84886-1</u>	Inactive (SEP 14, 2018)	4% acephate
PROKIL METHOMYL 2 ACEPHATE 3 DUST	-	<u>AZ790027</u>	Inactive (OCT 10, 1989)	State reg.
TENKOZ ACEPHATE 90 INSECTICIDE	-	<u>LA040008</u>	Inactive (AUG 30, 2004)	State reg.
TENKOZ ACEPHATE 90 INSECTICIDE	-	<u>LA050007</u>	Inactive (SEP 15, 2009)	State reg.
TRACE MOUNTAIN - ACEPHATE 90 SP	09/24/2009	<u>86154-3</u>	Inactive (JUL 15, 2011)	Soluble powder

VALENT DIQUAT WATER WEED KILLER	-	<u>AL890004</u>	Inactive (NOV 17, 1994)	state reg.
VALENT ORTHENE MFG	01/15/1999	<u>59639-42</u>	Inactive (MAR 06, 2002)	75% acephate
WHITE GUARD 90 SP COTTON INSECTICIDE	04/25/2007	<u>66222-122</u>	Inactive (APR 13, 2018)	soluble powder
WHITE GUARD 90 SP COTTON INSECTICIDE	-	<u>LA050009</u>	Inactive (MAR 17, 2015)	state reg.
WHITMIRE PT 1300	03/21/1988	<u>499-210</u>	Inactive (AUG 25, 2000)	spray
WHITMIRE PT 1300 ORTHENE DIRECTED SPRAY INSECTICIDE	12/26/1995	<u>499-380</u>	Inactive (JUL 11, 2001)	spray
WHITMIRE PT 1300 ORTHENE TOTAL RELEASE INSECTICIDE	11/08/2001	<u>499-369</u>	Inactive (SEP 29, 2004)	3% acephate
WHITMIRE PT 1300 TOTAL RELEASE INSECTICIDE	03/21/1988	<u>499-250</u>	Inactive (JUL 11, 2001)	3% acephate
WHITMIRE PT 280	07/10/1984	<u>499-230</u>	Inactive (JUL 11, 2001)	1% acephate
WHITMIRE PT 289 ORTHENE	09/10/2007	<u>499-373</u>	Inactive (FEB 14, 2019)	1% acephate

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11 DECEMBER 2016

Attachment C

Reference No. 1

PM 04

499-421

09/01/99

SSJ 8055
1/6



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

SEP 1 1999

OFFICE OF
PREVENTION, PESTICIDES AND
TOXIC SUBSTANCES

Mr. H. Wayne Moran
Manager, Regulatory and Government Affairs
Whitmire MicroGen
35678 Tree Court Industrial Blvd.
St. Louis, MO 63122

Dear Mr. Moran:

Subject: Request For Deviance From PR Notice 98-6 Labeling
Whitmire Micro-Gen PT 1320 TR
EPA Reg. No. 499-421
Your Application of February 11, 1999

The labeling amendment referred to above, submitted in connection with registration under the Federal Insecticide, Fungicide, and Rodenticide Act, As Amended (FIFRA), is acceptable, provided that you::

Submit one copy of your final printed label incorporating the following corrections before you release the product for shipment.

1. Add the Worker Protection Standard ventilation labeling requirements as specified under 40 CFR 170.110 (c).
2. In lieu of the statement specified in PR Notice 98-6, "Do not use in a room 5 ft. x 5 ft.", you must add a statement specifically limiting the size of the greenhouse in which the product can be used. Your cover letter states that this statement is not applicable to the subject product because the current label limits the size of the greenhouse in which the product may be used to 1500 square feet and that use in greenhouses smaller than 1500 sq. ft. would likely result in misuse of the product. However, the wording contained on the submitted label does not specifically limit the greenhouse size and does not prohibit use in greenhouses smaller than 1500 feet.
3. Add the statement, " Do not place cans within 10 horizontal feet of any ignition source such as pilot lights, other open flames, or running electrical appliances that cycle off and on".

Internet Address (URL) • <http://www.epa.gov>

Recycled/Recyclable • Printed with Vegetable Oil Based Inks on Recycled Paper (Minimum 25% Postconsumer)

2/6

If this condition is not complied with, the registration will be subject to cancellation in accordance with FIFRA sec. 6(e). Your release for shipment of the product bearing the amended label constitutes acceptance of this condition.

A stamped copy of the label is enclosed for your records.

Sincerely,



Marilyn A. Mautz
Biologist
Insecticide-Rodenticide Branch
Registration Division (7504C)

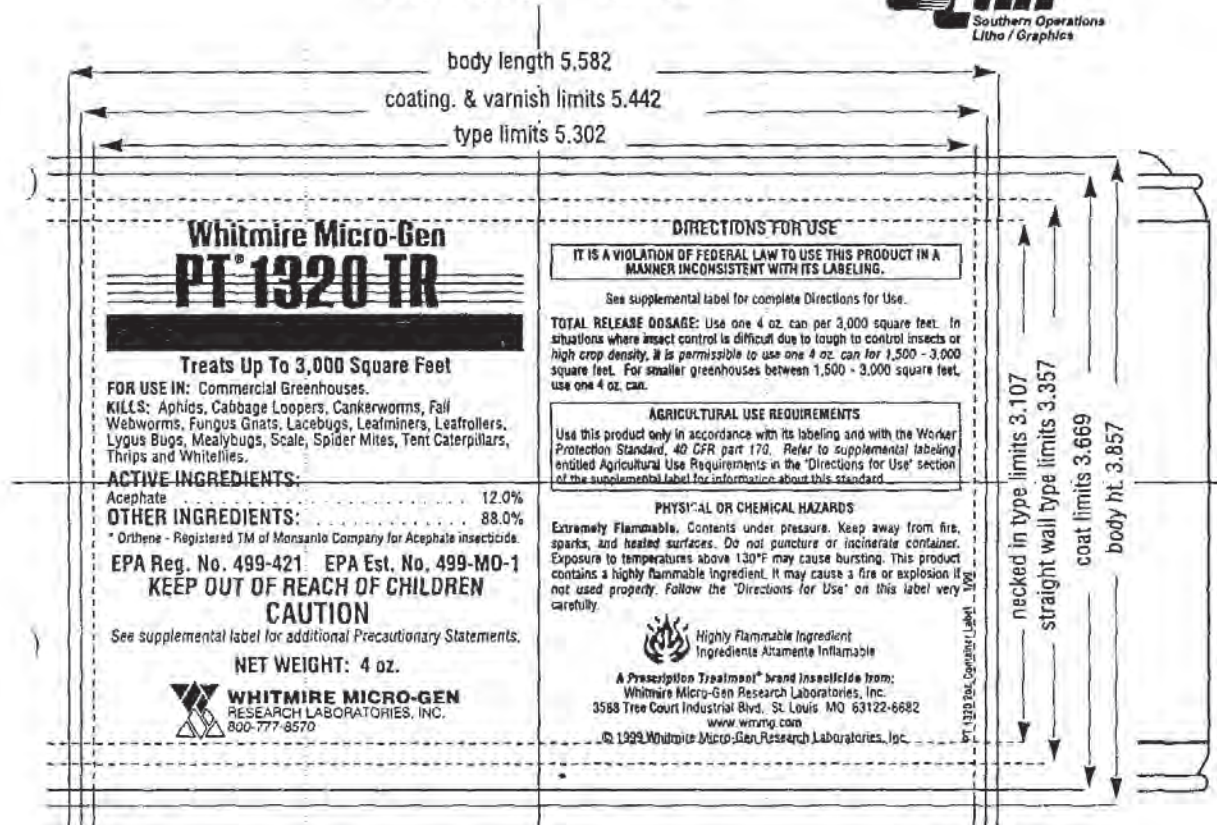
3/6

ACCEPTED
with COMMENTS
in EPA Letter Dated:

SEP 1 1999

Refer to Federal Insecticide, Fungicide and Rodenticide Act and amendments for this pesticide registered under EPA Reg. No. 499-421

112 X 312 10/18/94



APPLICATOR AND OTHER HANDLERS MUST WEAR: Long-sleeved shirt and long pants, chemically-resistant gloves, such as Barrier laminate ≥ 14 mils or Butyl rubber ≥ 14 mils, shoes plus socks, and a respirator with either an organic vapor-removing cartridge with a prefilter approved for pesticides (MSHA/NIOSH approval number prefix TC-23C) or a canister approved for pesticides (MSHA/NIOSH approval number prefix TC-14G) or a NIOSH approved respirator with an organic vapor (OV) cartridge or canister with any N, R, P or HE prefilter. Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

USER SAFETY RECOMMENDATIONS

Users should:

- Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.
- Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

ENVIRONMENTAL HAZARDS

This product is toxic to fish. Do not apply directly to water, or to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment washwaters. Apply this product only as specified on this label.

PHYSICAL OR CHEMICAL HAZARDS

Extremely 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. This product contains a highly flammable ingredient. It may cause a fire or explosion if not used properly. Follow the "Directions for Use" on this label very carefully.

Highly Flammable ingredient
Irritant
Inflammable

Contains no CFCs or other ozone depleting substances. Federal regulations prohibit CFC propellants in aerosols.

 A Prescription Treatment® brand insecticide from: Whitmire Micro-Gen Research Laboratories, Inc. 3588 Free Court Industrial Blvd. St. Louis, MO 63122-6682 www.wrmg.com

© 1999 Whitmire Micro-Gen Research Laboratories, Inc.

Whitmire Micro-Gen PT 1320 TR

FOR USE IN: Commercial Greenhouses.

KILLS: Aphids, Cabbage Looppers, Cankerworms, Fall Webworms, Fungus Gnats, Lacebugs, Leafminers, Leafrollers, Lygus Bugs, Mealybugs, Scale, Spider Mites, Tent Caterpillars, Thrips and Whiteflies.

MAY BE USED ON: Bedding Plants, Cut Flowers, Flowering Hanging Basket, Foliage, Potted Flowering Plants and Ornamentals.

Orthane - Registered TM of Monsanto Company for Acetophate Insecticide

ACTIVE INGREDIENT: Acetophate 12.0%

OTHER INGREDIENTS: 88.0%

EPA Reg. No. 499-421 EPA Est. No. 499-MO-1
**KEEP OUT OF REACH OF CHILDREN
CAUTION**

FIRST AID

IF IN EYES: Flush eyes with plenty of water. Call a physician if irritation persists.

IF SWALLOWED: Call a physician or Poison Control Center immediately. Drink one or two glasses of water and induce vomiting by touching back of throat with finger. Do not induce vomiting or give anything by mouth to an unconscious person.

IF INHALED: Remove person to fresh air. Apply artificial respiration if indicated. Get medical attention.

IF ON SKIN: Wash with plenty of soap and water. Get medical attention.

NOTE TO PHYSICIAN: If symptoms of cholinesterase inhibition are present, atropine sulfate is anticholinergic. 2-PAM is also anticholinergic and may be administered in conjunction with atropine.

This product contains an organophosphate insecticide. See side panel for additional precautionary statements.

NET WEIGHT: 12 oz.


WHITMIRE MICRO-GEN
RESEARCH LABORATORIES, INC.
800-777-8570

DIRECTIONS FOR USE

IT IS A VIOLATION OF FEDERAL LAW TO USE THIS PRODUCT IN A MANNER INCONSISTENT WITH ITS LABELING.

See supplemental label for complete Directions for Use. **TOTAL RELEASE DOSAGE:** Use one 12 oz. can per 9,000 square feet, in situations where insect control is difficult due to tough to control insects or high crop density, it is permissible to use one 12 oz. can for 4,500 - 9,000 square feet. For smaller greenhouses between 4,500 - 9,000 square feet, use one 12 oz. can.

TO ACTIVATE CANS: Starting farthest away from exit door, activate each can by pressing tab down and locking it. Leave the greenhouse at once. The entire contents will release automatically.

AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170. Refer to supplemental labeling entitled Agricultural Use Requirements in the "Directions for Use" section of the supplemental label for information about this standard.

STORAGE AND DISPOSAL

Do not contaminate water, food or feed by storage or disposal.

STORAGE: Store in a cool dry place away from heat or open flame.

PESTICIDE DISPOSAL: Wastes resulting from use of this product may be disposed of on site or at an approved waste disposal facility.

CONTAINER DISPOSAL: This container may be recycled in the low but growing number of communities where aluminum aerosol can recycling is available. Before offering for recycling, empty the can by using the product according to the label (DO NOT PUNCTURE). If recycling is not available, wrap the container and discard in the trash.

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS AND DOMESTIC ANIMALS

CAUTION: Harmful if swallowed or absorbed through skin. Causes moderate eye irritation. Avoid contact with eyes, skin and clothing. Wash thoroughly with soap and water after handling.

PERSONAL PROTECTIVE EQUIPMENT

Some materials that are chemical-resistant to this product are listed below. If you want more options, follow the instructions for Category B on an EPA chemical resistance category selection chart.

PT 1320 TR 1997 Container Label 1/99

Whitmire Micro-Gen

PT 1320 TR

Supplemental Label

FOR USE IN: Commercial Greenhouses.

KILLS: Aphids, Cabbage Loopers, Cankerworms, Fall Webworms, Fungus Gnats, Lacebugs, Leafminers, Leafrollers, Lygus Bugs, Mealybugs, Scale, Spider Mites, Tent Caterpillars, Thrips and Whiteflies.

MAY BE USED ON: Bedding Plants, Cut Flowers, Flowering Hanging Baskets, Foliage, Potted Flowering Plants and Ornamentals.

* Ortheme - Registered TM of Monsanto Company for Acephate Insecticide

ACTIVE INGREDIENT:

Acephate: 12.0%

OTHER INGREDIENTS:

..... 88.0%

EPA Reg. No. 499-421 EPA Est. No. 499-MO-1

**KEEP OUT OF REACH OF CHILDREN
CAUTION**

FIRST AID

IF IN EYES: Flush eyes with plenty of water. Call a physician if irritation persists.
IF SWALLOWED: Call a physician or Poison Control Center immediately. Drink one or two glasses of water and induce vomiting by touching back of throat with finger. Do not induce vomiting or give anything by mouth to an unconscious person.
IF INHALED: Remove person to fresh air. Apply artificial respiration if indicated. Get medical attention.

IF ON SKIN: Wash with plenty of soap and water. Get medical attention.

This product contains an organophosphate insecticide.

NOTE TO PHYSICIAN: If symptoms of cholinesterase inhibition are present, atropine-sulfate is antidotal. 2-PAM is also antidotal and may be administered in conjunction with atropine.

See page 3 for additional precautionary statements.

A Prescription Treatment® brand insecticide from:
Whitmire Micro-Gen Research Laboratories, Inc.
3568 Tree Court Industrial Blvd.
St. Louis MO 63122-6882
www.wrmrg.com

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WHITMIRE MICRO-GEN
RESEARCH LABORATORIES, INC.
800-777-8570

5/6



Whitmire Micro-Gen PT® 1320 TF

DIRECTIONS FOR USE

IT IS A VIOLATION OF FEDERAL LAW TO USE THIS PRODUCT IN A MANNER INCONSISTENT WITH ITS LABELING.

PREAPPLICATION DIRECTIONS: For best results, apply during early evening when foliage is dry and temperature is between 60°-80° F. Shut off all exhaust fans and close all windows, doors and ventilators. All human occupants and pets should be removed before treatment. Greenhouse should be ventilated before reentry.

TOTAL RELEASE DOSAGE

Use one 4 oz. can per 3,000 square feet. In situations where insect control is difficult due to tough to control insects or high crop density, it is permissible to use one 4 oz. can for 1,500 - 3,000 square feet. For smaller greenhouses between 1,500 - 3,000 square feet, use one 4 oz. can.

Use one 12 oz. can per 9,000 square feet. In situations where insect control is difficult due to tough to control insects or high crop density, it is permissible to use one 12 oz. can for 4,500 - 9,000 square feet. For smaller greenhouses between 4,500 - 9,000 square feet, use one 12 oz. can.

TO ACTIVATE CANS: Starting farthest away from exit door, activate each can by pressing tab down and locking it. Leave the greenhouse at once. The entire contents will release automatically.

AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE). The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of 24 hours.

Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your State of Tribe, consult the agency responsible for pesticide regulation.

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water, is: Chemical-resistant gloves, such as Barrier laminate ≥ 14 mils or Butyl rubber ≥ 14 mils or Nitrile rubber ≥ 14 mils or Neoprene rubber ≥ 14 mils or PVC ≥ 14 mils or viton ≥ 14 mils, coveralls, and shoes plus socks.

FOR USE IN COMMERCIAL GREENHOUSES ON ORNAMENTAL PLANTS

Bedding plants (such as): Impatiens, marigolds, petunias, geraniums, garden mums, verbena, New Guinea impatiens, and dahlia.
Cut flowers (such as): roses, chrysanthemums, carnations, snapdragons, and orchids.
Flowering hanging baskets (such as): Luch-sia, and lantana.
Foliage (such as): Boston fern, dracaena, ficus, schefflera, and philodendron.
Potted flowering plants (such as): poinsettia, chrysanthemums, florist's azaleas, lilies, African violets, geraniums, hibiscus, kalan-choes, begonias, gloxinia, cyclamen, cineraria, calceolaria, and exacium.

Ornamentals (such as): azalea, barberry, coloneaster, euonymus, holly, ivy, juniper, oak, pine, rhododendron, roses, spiraea, spruce, viburnum and yew.

This product has been tested on a wide range of plants and in our opinion has demonstrated excellent plant safety. However, not all varieties or strains of the plants listed have been tested. Therefore, before treating a large number of plants, spray a few plants and observe for plant damage and for performance prior to full scale application.

PLANT SAFETY NOTICE: Good greenhouse management must overrule the use of PT-1320 TF when any conditions might be created by tightly closing greenhouses that would harm plant foliage or flowers. Example: Creation of high temperatures or humidity conditions. Do not use PT-1320 TF in greenhouses with unvented or defective gas heating systems or when open combustion exists.

STORAGE AND DISPOSAL

Do not contaminate water, food or feed by storage or disposal.

STORAGE: Store in a cool dry place away from heat or open flame.

PESTICIDE DISPOSAL: Wastes resulting from use of this product may be disposed of on site or at an approved waste disposal facility.

CONTAINER DISPOSAL: This container may be recycled in the few but growing number of communities where aluminum aerosol can recycling is available. Before offering for recycling, empty the can by using the product according to the label. (DO NOT PUNCTURE). If recycling is not available, wrap the container and discard in the trash.

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS AND DOMESTIC ANIMALS

CAUTION: Harmful if swallowed or absorbed through skin. Causes moderate eye irritation. Avoid contact with eyes, skin and clothing. Wash thoroughly with soap and water after handling.

PERSONAL PROTECTIVE EQUIPMENT

Some materials that are chemical-resistant to this product are listed below. If you want more options, follow the instructions for Category B on an EPA chemical resistance category selection chart.

APPLICATOR AND OTHER HANDLERS MUST WEAR: Long-sleeved shirt and long pants, chemical-resistant gloves, such as Barrier laminate ≥ 14 mils or Butyl rubber ≥ 14 mils and shoes plus socks. Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washing, use detergent and hot water. Keep and wash PPE separately from other laundry.

USER SAFETY RECOMMENDATIONS

- Users should:
- Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.
 - Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
 - Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

ENVIRONMENTAL HAZARDS

This product is toxic to fish. Do not apply directly to water, or to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment washwaters. Apply this product only as specified on this label.

PHYSICAL OR CHEMICAL HAZARDS

Extremely 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. This product contains a highly flammable ingredient. It may cause a fire or explosion if not used properly. Follow the "Directions for Use" on this label very carefully.



Highly Flammable Ingredient
Ingrédients Altamente Inflamáveis

ADDITIONAL PRECAUTIONS: Contents of container must be at room temperature before use. Therefore, cans must be stored at room temperature (above 65° F) for 24 hours before application. Make sure spray is unobstructed above units by foliage or other physical objects in order to obtain maximum distribution of fog.



Contains no CFCs or other ozone depleting substances. Federal regulations prohibit CFC propellants in aerosols.

6/6

Reference No. 2

PM 04

37979-1

12/2/97

Page 175

ACECAP® 97 Systemic Insecticide Implants

EPA Reg. No. 37979-1

Finished Label: Page 1 of 4 Pages.

ACECAP ACECAP 97 ACECAP

ACECAP 97

SYSTEMIC INSECTICIDE TREE IMPLANTS

FOR CONTROL OF CERTAIN DESTRUCTIVE
RESTS OF ORNAMENTAL TREES

NO MIXING,
MEASURING,
OR SPRAYING
REQUIRED

10 PAK
THIS PACKAGE
CONTAINS 10
IMPLANTS

ACCEPTED

DEC 2 1997

Under the Federal Insecticide, Fungicide, and Plant Pesticide Act as amended and the pesticide registration provisions of the Act, EPA



EASY TO INSTALL

IMPLANTS WILL EFFECTIVELY TREAT UP TO A 4" TRUNK DIAMETER

Production Lot No. _____

NET CONTENTS: 8.75 GRAMS

ACTIVE INGREDIENT BY WT.

Acephate (0, S-Dimethyl Acetyl-phosphoramide/thioate) ...	97%
INERT INGREDIENTS ...	3%
TOTAL	100%

Each Cartridge contains .875 gram Active ingredient.

KEEP OUT OF REACH OF CHILDREN

CAUTION

READ LABEL BEFORE USING. SEE BACK PANEL FOR ADDITIONAL PRECAUTIONARY STATEMENTS.

275

ACECAP® 97 Systemic Insecticide Implants

EPA Reg. No. 37979-1

Finished Label: Page 2 of 4 Pages.

ACECAP 97 SYSTEMIC INSECTICIDE IMPLANTS

FOR RESIDENTIAL USE — FOR USE ON ORNAMENTAL TREES: GROWING IN INTERIOR PLANTSCAPES, ORNAMENTAL GARDENS OR PARKS, OR ON GOLF COURSES OR LAWNS AND GROUNDS. THIS PRODUCT MAY BE USEFUL IN AN INTEGRATED PEST MANAGEMENT PROGRAM, OR WHERE FOLIAR SPRAYS OR SOIL APPLIED SYSTEMICS MAY BE OBJECTIONABLE. APPLICATION IS MADE BY IMPLANTING INTO THE TREE TRUNK BASE AS INSTRUCTED BELOW.

INSECT PESTS CONTROLLED:

Aphids, Bagworms, Bronze Birch Borer, Budworms, California Oakworm, Cankerworm (spring & fall), Casebearer, Citrus Blackfly, Eastern Tent Caterpillar, Elm Leaf Beetle Larvae, Fall Webworm, Gypsy Moth Larvae, Honeylocust Mite, Lace Bug, Leaf Folder, Leaf Miners, Mapleworm, Mimosa Webworm, Nantucket Pine Tip Moth Larvae, Pine Needleminer, Scale (crawlers), Spruce Budworm, Spruce Coneworm, Thrips, Whitefly, Zimmerman Pine Moth.

TREES TO BE TREATED (Host Plants):

Ash, Alder, Banyon, Birch, Non-Bearing Cherry, Non-Bearing Citrus, Cottonwood, Dogwood, Elm, Ficus, Flame, Hawthorn, Hemlock, Holly, Kentucky Coffee tree, Larch, Lilac, Linden, Locust, Maple, Mimosa, Oak, Non-Bearing Olive, Pines (fir & spruce), Plane, Plumeria, Poplar, Redbud, Redwood, Sycamore, Tulip, Non-Bearing Walnut, Willow. **NOTE:** Non-Bearing refers to trees that will not bear fruit within one year of application.

RECOMMENDED APPLICATION:

With the exception of the following insects, apply ACECAPS when insects first appear: (1) For Budworm, Zimmerman Pine Moth and Gypsy Moth apply just prior to anticipated larvae feeding. (2) For Elm Leaf Beetle Larvae apply after eggs are present or during early larvae feeding. (3) For Aphids and White Fly apply when wingless forms are first present. (4) For Spruce Coneworm apply at budswell. (5) Bronze Birch Borer — apply implants in late May, early June, when adult borers are emerging from the trunk. Insecticide controls for Bronze Birch Borer may be more effective if overall tree stress symptoms are reduced . . . i.e. fertilize the infested birch trees in spring or fall; water regularly, especially during dry periods; and mulch around the tree base to increase moisture retention and cool the tree roots.

NOTE! DO NOT implant into trees where fruit, nuts or syrup is to be used for sale or consumption. **DO NOT** implant into trees having less than 3 inches (7.6 cm) trunk diameter (DBH). For trees having trunk diameter of 1-1/2 inches (3.8 cm) to 3 inches (7.6 cm) use MIN-IMPLANTS. **DO NOT** use ACECAP Systemic Implants on trees other than those listed on this label. **DO NOT** use on Flowering Crabapple as foliage injury may occur.

FOR BEST RESULTS USE TOOLS AND TECHNIQUES AS RECOMMENDED IN THE APPLICATION INSTRUCTIONS INCLUDED IN EACH CARTON, AND IN EACH FOIL PACKAGE.

APPLICATION RATES AND PLACEMENT

TO DETERMINE NUMBER OF IMPLANTS REQUIRED — Determine the tree diameter, multiply by 3.14 and divide by 4 (inches) or 10.16 (cm). **EXAMPLE:** 13 inches (33 cm) DBH x 3.14 = 40.8 inches (103.7 cm) circumference ÷ 4 (inches) or 10.16 (cm) = 10 (i.e. use 10 ACECAP implants). For trees of less than 3 inch trunk diameter, use one MIN-IMPLANT per inch DBH.

ACECAP Systemic Implants are to be implanted around the trunk base at 4 inch (10.16 cm) intervals. Using a tape measure, drill 3/8 inch (25 cm) diameter implant holes at a 4 inch (10.16 cm) spacing, spiraling up and around the trunk base. Holes should be drilled 1-1/4 inches (3.2 cm) into the tree trunk from the cambium surface, to assure the cartridge can be implanted beneath the bark and the cambium surface. Cartridges left extending outward into the bark will still provide control, however, will delay wound closure.

Applications timed with maximum upward flow of tree sap produce the most successful results. The characteristic may vary with the tree species, geographic area, time of year, time of day, individual tree vigor, or light intensity at time of treatment. If soil moisture conditions are dry, thorough deep root watering prior to or immediately following implant treatment will enhance chemical uptake.

 Manufactured in U.S.A. by
Creative Sales, Inc.
Fremont, NE 68025 U.S.A.
Ref. U.S. Patent Nos. 3,706,161; 4,308,699; 4,342,175

ACECAP, Reg. T.M.
Creative Sales, Inc.



EPA Reg. No. 37979-1

OPEN ALONG THIS LINE

EPA Est. No. 37979-NB-1

Form No. 6-95-4

ACECAP® 97 Systemic Insecticide Implants

EPA Reg. No. 37979-1

Finished Label : Page 3 of 4 Pages.

PRECAUTIONARY STATEMENTS
HAZARDS TO HUMANS & DOMESTIC ANIMALS
CAUTION

Material within gelatin capsule may cause eye irritation. Harmful if swallowed or absorbed through skin. Do not get in eyes, on skin, or on clothing. Avoid breathing vapors. In case of eye contact, flush eyes with fresh water for at least 15 minutes. If irritation persists, get medical attention. If swallowed, drink a large amount of water and induce vomiting if conscious. For skin contact, wash with soap and water.

NOTE TO PHYSICIAN: Acephate is a cholinesterase inhibitor. If signs of cholinesterase inhibition occur, atropine is antidotal. 2-PAM may also be used in conjunction with atropine, but should never be used alone.

ENVIRONMENTAL HAZARDS
 This pesticide is toxic to birds. Keep out of lakes, ponds or streams. Do not contaminate water by cleaning of equipment or disposal of wastes.

FOR EMERGENCY INFORMATION CALL —
1-800-759-7739

DIRECTIONS FOR USE

"No Worker Protection Standard worker entry restrictions or worker notification requirements apply when this product is directly injected into agricultural plants." It is a violation of Federal law to use this product in a manner inconsistent with its labeling.
REFER TO SPECIFIC INSTRUCTIONS FOR USE.

REGARDING RETREATMENT

ACECAP Systemic Implants may be utilized in an integrated pest management program, and combined where needed, over several seasons with conventional foliar or soil applications. **DO NOT REPEAT IMPLANT TREATMENTS WHERE A TREE HAS NOT SHOWN THE ABILITY TO ADEQUATELY CALLOUS OVER THE PRIOR TREATMENT.**

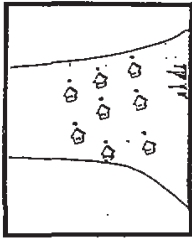
STORAGE AND DISPOSAL
 Store in a cool, dry place. Protect from excessive heat. Keep foil packages sealed until ready for use. Do not re-use the plastic implant cartridges; they are designed to be implanted into and left in the tree. Do not re-use empty container or container wrappings. Wrap and place in trash collection.

CONDITIONS OF SALE

- (1) Creative Sales, Inc. warrants that this material conforms to the chemical description on the label and is reasonably fit for use as directed hereon. We make no further warranty of **FITNESS** or of **MERCHANTABILITY** and no agent or representative is to do so concerning this material.
- (2) Critical and unforeseeable factors beyond the manufacturer's control prevent us from eliminating all risks in connection with the use of chemicals. Such risks include, but are not limited to lack of complete control. Buyer and user acknowledge and assume all risks and liability (except those indicated under 1 above) resulting from handling, storage and use of this material.

Additional Tips

When re-treatment is necessary, place the new implants in a spiral pattern between, and above or below the previous treatment. Do not attempt to drill into and remove the cartridges implanted previously. Note the positioning of three applications.



When using ACECAPS containing systemic insecticide, the implant treatment may be combined over several seasons with a conventional spray or soil treatment insect control program. **DO NOT REPEAT IMPLANT TREATMENTS WHERE TREE HAS NOT SHOWN THE ABILITY TO ADEQUATELY CLOSE OVER THE PRIOR TREATMENT.**

FOLLOW CAUTIONS WHERE INDICATED

DO:

- Use proper drill bit
- Remove shavings from hole
- Recess cartridge end below the inner bark
- Sterilize the drill bit (using Lysol aerosol, or similar type, disinfectant) between trees being treated
- Water thoroughly if weather conditions are dry
- Carefully read the Application Timing for optimum results (see back panel)
- **ALWAYS READ & FOLLOW LABEL DIRECTIONS FOR PRODUCT BEING USED**

DO NOT enlarge the hole diameter

DO NOT use a sharp end punch

DO NOT remove previously implanted cartridges

DO NOT break plastic gelatin

DO NOT place implant too deep

Application Timing

The "effect" of systemic implants is maximized when implants are in place in the tree during the period of optimum xylem activity, to transfer the chemical from the implants into the crown of the tree. The chemicals used possess little (if any) phloem activity, therefore, it is suggested **APPLICATION BE AVOIDED AS TREES ARE GOING INTO DORMANCY!** Guidelines are offered here for optimum results.

ACECAP® SYSTEMIC INSECTICIDE

There are two key points to remember when using ACECAP implants...

1. It takes 4-7 days for the insecticide to "reach" effective levels in the foliage of the tree (as little as 2 days if trees are in a healthy vegetative growth condition).
2. Maximum duration of control documented is 18 weeks, and optimum control of severe infestations is 10-12 weeks.

Duration of insect control in conifers (pine, spruce, fir) has been documented for a year.

THEREFORE, ACECAP IMPLANTS SHOULD BE MADE JUST PRIOR TO EXPECTED INSECT ACTIVITY, OR AT EARLIEST INDICATION OF INSECT ACTIVITY! Application of ACECAPS is normally not recommended during tree dormancy (as with nutrient implants) when attempting to control targeted insect pests on the foliage; however, treatment during dormancy for certain pine seed cone insects may be advantageous.

APPLICATION GUIDE FOR ACECAP® SYSTEMIC TREE IMPLANTS

ACECAP® 97 Systemic Insecticide Implants

EPA Reg. No. 37979-1

Finished Label: Page 4 of 4 pages.

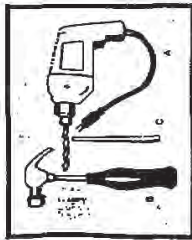


Creative Sales, Inc.
222 N. Park Ave.
Fremont, NE 68025 U.S.A.

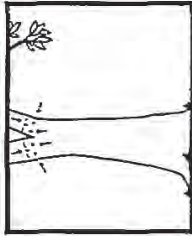
ACECAP and MEDICAP ... Reg. TM's
Creative Sales, Inc.

ACECAP ... Systemic Insect Control For Trees

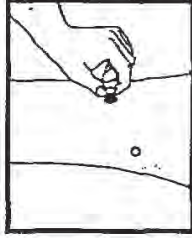
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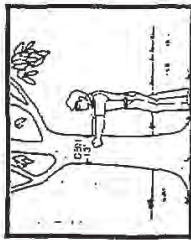
1. First select the proper tools. You will need:
 A. Electric or rechargeable drill (using a sharp spiral drill bit as shown). Always refer to package in use for recommended drill bit size (i.e. 1/4", 3/8", or 1/2" inch).
 B. Hammer C. Flat end punch, or dowel rod. D. Tree Wound Dressing (see #11).



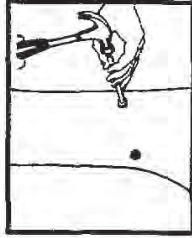
5. NOTE: On large trees where there is no main stem or trunk and multiple branching occurs, treat each stem as if it were a separate tree. This will assure adequate distribution of chemical throughout the tree.



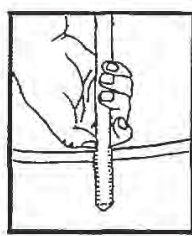
9. Place the implant cartridge into the pre-drilled holes, simply pressing them into the tree trunk. Be sure to press the cartridges in as far as possible.



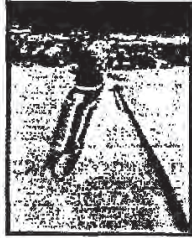
2. The number of implants required is based on the tree trunk size at 4 ft. above the ground ... (commonly referred to as DBH), and the specific recommendations for the product being used. The circumference of the tree trunk (in inches at 4 ft. above the ground) can be determined by using a tape measure; or calculated from the DBH ... see #3 below. In either case, after determining the circumference, divide the circumference by the recommended spacing for the product being used (i.e. 3', 4' or 6 inches), and apply the implants evenly around the base of the tree (refer to #3 and #6).



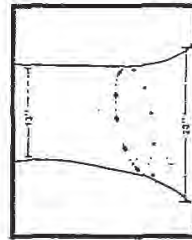
10. Using a hammer and a flat end punch or dowel rod ... carefully drive the cartridge into the tree, recessing the large end slightly beneath the cambium surface, which is below the bark. See #11.



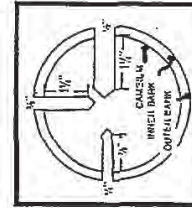
7. Using a measuring instrument (i.e. flat end of pen or pencil as a depth gauge), insert completely into each hole and mark the depth by placing your thumb against the outer bark. Based on implant diam. and thickness of bark, holes should be drilled as illustrated below.



11. The cartridge head securely plugs the small wound made to the tree trunk, however on thin barked trees (i.e. birch, ficus, etc.) it is recommended that a light wound dressing be applied over the implant site. This provides further protection until the cambium closes over. Having no scientific evidence that wound dressings aid in the healing of tree bark, we might suggest that a latex paint (aerosol or brush applied) be used.



3. NOTE: If you are calculating the tree size and rate of application from the tree trunk diameter (DBH) ... using example shown to the left, DBH is 13 inches (33 cm) x 3.14 = 40.8 inches (103.7 cm) circumference = 4 inches (10.16 cm) implant spacing ... i.e. use 10 IMPLANTS. If the tree base is larger than the DBH (as illustrated) be sure to place the recommended number of implants evenly around the tree base ... note #6.



8. NOTICE: Hole depth is from inside the inner bark.

TREE SIZE	RECOMMENDED SIZE OF IMPLANT DIA.	DRILL EACH HOLE DEPTH
1 1/2" - 3" (3.8 - 7.6 cm)	1/4" (6.4 cm)	1/2" (2.23 cm)
3" and up (7.6 cm & up)	"Sandwich" 3/8" (9.5 cm) & 1/2" (1.27 cm)	1 1/2" (3.2 cm)
8" and up (20.3 cm & up)	"Super" 1/2" (1.27 cm)	1 1/2" (3.2 cm)

* 1/2" implants suitable only in MEGACAP FE.



Cross section of tree 2 years following treatment.

12. The application process is now completed ... natural sap flow will "systemically" absorb the chemical and distribute it throughout the tree. The active layer of cambium will soon grow over and close the implant site. The cartridges are to be left inside the tree.

Reference No. 3

US ENVIRONMENTAL PROTECTION AGENCY OFFICE OF PESTICIDES PROGRAMS REGISTRATION DIVISION (TS-767) WASHINGTON, DC 20460	EPA REGISTRATION NO.	DATE OF ISSUANCE
	64014-1	APR 2 1992
	TERM OF ISSUANCE	
NOTICE OF PESTICIDE: <input checked="" type="checkbox"/> REGISTRATION <input type="checkbox"/> REREГИSTRATION (Under the Federal Insecticide, Fungicide, and Rodenticide Act, as amended)		
NAME OF PESTICIDE PRODUCT		
Arbor x there		

NAME AND ADDRESS OF REGISTRANT (Include ZIP code)

Tree Technology Systems, Inc.
 1014 Rein Road
 Cheektowaga, NY 14225

NOTE: Changes in labeling formula differing in substance from that accepted in connection with this registration must be submitted to and accepted by the Registration Division prior to use of the label in commerce. In any correspondence on this product always refer to the above U.S. EPA registration number.

On the basis of information furnished by the registrant, the above named pesticide is hereby Registered/Reregistered under the Federal Insecticide, Fungicide, and Rodenticide Act.

A copy of the labeling accepted in connection with this Registration/Reregistration is returned herewith.

Registration is in no way to be construed as an indorsement or approval of this product by this Agency. In order to protect health and the environment, the Administrator, on his motion, may at any time suspend or cancel the registration of a pesticide in accordance with the Act. The acceptance of any name in connection with the registration of a product under this Act is not to be construed as giving the registrant a right to exclusive use of the name or to its use if it has been covered by others.

This product is conditionally registered in accordance with FIFRA section 3(c)(7)(A) provided that you:

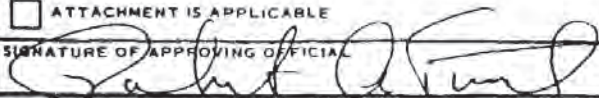
1. Submit/cite all data or other material required for registration/reregistration of your product under FIFRA section 3(c)(5) or FIFRA section 4 when the Agency requires all registrants of similar products to submit such data.

2. Make the labeling changes listed below before you release the product for shipment:

- a. Add the phrase "EPA Registration No. 64014-1."
- b. Add the following statement under the "Storage" heading:
 Store in a locked storage area.
- c. Both the "Active Ingredient" and "Inert Ingredients" headings must be aligned to the same margin.

ATTACHMENT IS APPLICABLE

SIGNATURE OF APPROVING OFFICIAL



APR 2 1992

- d. Revise the environmental hazards statement,

Do not apply directly to water or wetlands
(swamp, bogs, marshes, and potholes)

to read as follows:

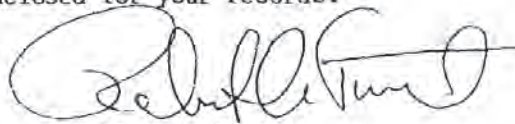
Do not apply directly to water, to areas
where surface water is present or to
intertidal areas below the mean high water
mark.

- e. Item 5 of your application form dated January 23, 1992 indicates that the label directions which now appear on your basic product label will be located on ". . . labeling accompanying product." If your directions for use are to be removed from your basic product label and located on separate labeling accompanying this product, your basic label must include a reference to the location of the directions for use.

3. Submit five (5) copies of your final printed labeling before you release the product for shipment. Refer to the A-79 enclosure for a further description of final printed labeling.

If these conditions are not complied with, the registration will be subject to cancellation in accordance with FIFRA section 6(e). Your release for shipment of the product constitutes acceptance of these conditions.

A stamped copy of the label is enclosed for your records.



Robert A. Forrest
Product Manager (14)
Insecticide-Rodenticide Branch
Registration Division (H7505C)

Enclosures

ARBOR, THERE™

SYSTEMIC INSECTICIDE APPLIED INTERNALLY BY ARBOR,™ MICROINJECTION
SYSTEM FOR CONTROL OF CERTAIN INSECTS ON TREES AND SHRUBS

Active ingredient	By Wt.
Acephate (O,S-dimethyl acetylphosphoramidothioate)....	97%
Inert ingredients	<u>3%</u>
	100%

Each injector contains 1.5 grams active ingredient.

STOP -- READ THE LABEL BEFORE USE
====

KEEP OUT OF REACH OF CHILDREN

CAUTION

SEE SIDE PANEL FOR ADDITIONAL PRECAUTIONARY STATEMENTS.

NET CONTENTS: [] 300 grams of active ingredient in a case of 200 injectors.

TREE TECHNOLOGY SYSTEMS, INC.
1014 REIN RD.
CHEEKTOWAGA, NY 14225

EPA Reg. No. 64014-New

EPA Est. No. 64014-NY-001

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS & DOMESTIC ANIMALS

CAUTION

Harmful if swallowed. Avoid contact with eyes, skin and clothing. Avoid breathing vapors. Wash thoroughly with soap and water after handling. Remove and launder contaminated clothing separately from

ACCEPTED
with COMMENTS
in EPA Letter Dated:

APR 2 1992

Under the Federal Insecticide,
Fungicide, and Rodenticide Act
as amended, for the pesticide
registered under EPA Reg. No.

64014-1

household articles before reuse.

BEST AVAILABLE COPY

Statement of Practical Treatment:

If swallowed, drink one or two glasses of water (or milk) and induce vomiting by touching the back of the throat with the finger. If possible, contact a physician, poison control center, or emergency center before inducing vomiting. Do not induce vomiting or give anything by mouth to an unconscious person. Take the person and product container to the nearest emergency treatment center. In case of eye contact, flush eyes immediately with fresh water for at least fifteen minutes. If irritation persists, get medical attention. If inhaled, remove the person from the exposure area. For skin contact, wash skin with plenty of soap and water.

Note to Physicians: Emergency information call: 1-800-457-2022. Acephate is a cholinesterase inhibitor. If signs of cholinesterase inhibition appear, atropine is antidotal. 2-PAM also may be used in conjunction with atropine but should not be used alone.

Environmental Hazards:

This pesticide is toxic to birds. Do not apply directly to water or wetlands (swamp, bogs, marshes and potholes). Do not contaminate water when disposing of equipment wash waters.

DIRECTIONS FOR USE

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

READ ENTIRE LABEL. USE STRICTLY IN ACCORDANCE WITH PRECAUTIONARY STATEMENTS AND DIRECTIONS, AND WITH APPLICABLE STATE AND FEDERAL REGULATIONS.

Applying ARBOR,THENE[®] with Tree Technology Systems, Inc. ARBOR,™ Injectors:

ARBOR,THENE[®] label and injection instructions must be read and understood prior to use or installation of Tree Technology Systems, Inc. ARBOR,™ microinjection units. Failure to follow these directions may lead to injury to the installer or other persons as well as mechanical or phytotoxic damage to treated trees. The following instructions must be heeded to ensure safe and effective use of the injectors containing ARBOR,THENE[®] insecticide:

1. Protective eye wear and rubber or neoprene gloves must be worn while handling or installing the microinjection unit to prevent accidental contact with the eyes or skin.
2. When properly installed, the microinjection unit generates internal pressure resulting in the flow of ARBOR,THENE[®] solution through the dispenser tube. The microinjection unit must never be

activated unless installed correctly and securely in the tree to be treated.

3. Microinjection units containing ARBOR,THENE® may require up to several hours or more to empty depending on the health of the treated tree and local weather conditions. Never assume that microinjection units have depressurized completely because they appear nearly empty or empty. When removing injectors, individuals must wear proper eye protection and rubber or neoprene gloves. The individual should then cover the microinjection unit with one hand near the point of insertion into the stem while grasping the barrel end of the microinjection unit with the other hand. The injector should be turned slightly as it is slowly withdrawn from the tree. Careful removal of microinjection units should prevent accidental spillage of ARBOR,THENE® and subsequent exposure to the installer.

4. After microinjection units are removed from treated trees they must be discarded into the heavy-duty plastic disposal bag included in each case of microinjection units. The bag should be properly sealed and placed in the original carton. Sealed cartons should be returned freight prepaid to Tree Technology Systems, Inc., 1014 Rein Rd., Cheektowaga, NY 14225 for disposal.

Installing Microinjection Units:

1. Determine the number of microinjection units to be installed based upon 1) the target insect pest(s), and 2) the registered dosage rate as administered by proper spacing of microinjection units around the stem circumference. Unless otherwise noted, microinjection units should be installed in the stem and root flares near the ground line, i.e., 6.0 - to - 8.0 inches (15 - to - 20 cm) from the soil surface.

2. Using a portable electric drill (600-800 rpm capacity is preferred) with a sharp, clean 11/64-in. (0.4-cm) bit, the installer should drill a hole at the correct stem circumference spacing to a depth of 1/4 - to - 1/2 in. (0.60 - to - 1.3 cm) into the wood (xylem) under the bark. A slight downwardly angle is recommended for more complete drainage of the microinjection unit.

3. After reaching the proper depth range, the drill bit should be withdrawn carefully to avoid dislodging bark fragments around the exterior opening of the hole. The rear barrel portion of the microinjection unit should be compressed partially (about 1/2 in. or 1/3 cm.) to puncture an inner seal allowing the separate compartments containing water and ARBOR,THENE® to readily mix forming a solution. The microinjection unit should be inserted into the hole and the rear barrel portion compressed further without engaging the locking mechanism and barrel segments. Placing the plastic installation cap over the rear barrel end, strike the cap with a plastic hammer to seat the microinjection unit firmly in the hole. If the microinjection unit is not properly positioned in the hole, strike the cap again until correctly seated. By striking the microinjection unit, the back end of the feeder tip is forced back

BEST AVAILABLE COPY

into the funnel-shaped section dislodging a septum which allows the ARBOR,THENE® solution to flow from the microinjection unit into the tree.

4. When the microinjection unit is positioned correctly in the tree and the internal septum is dislodged to permit the flow of ARBOR,THENE®, remove the cap and, if necessary, push the rear barrel portion of the unit further downwardly until it is flush with the edge of the locking mechanism. This engages the locking mechanism which pressurizes the microinjection unit and assists in the evacuation of ARBOR,THENE® from the microinjection unit and movement into the vascular system of the tree.

5. Each hole should be drilled and a microinjection unit installed without delay. After the unit is properly seated, it should be activated. This sequence minimizes the flow of tree sap or resin into the hole prior to ARBOR,THENE® injection.

Plant	Insects	Microinjection Unit	
		Spacing Interval Around Stem Circumference	Time of Injection
Trees (except Flowering Crabapple, see below) and Shrubs	Aphids Bagworms Birch leafminer Tent- caterpillar Lace bugs	1 microinjection unit every 10 inches	As the insects be- gin to ap- pear.
	Douglas-fir tussock moth larvae Gypsy moth larvae	1 microinjection unit every 8 inches	As the insects begin to appear.
	Scales (Crawlers)	1 microinjection unit every 8 inches	As crawlers begin to appear. Repeat ap- plications at 4-week or more inter- vals, may be necessary where there is contin- ous crawler production.

Grasshoppers 1 microinjection unit every 8 inches As the grasshoppers begin to appear.

California oakworm
Cankerworms (Spring and Fall) 1 microinjection unit every 8-to-10 inches As the insects begin to appear. Use the higher amount when the larger larvae are present.

Nantucket pine tip moth larvae
Zimmerman pine moths 1 microinjection unit every 6 inches Time of application is important. Consult your farm advisor or County Extension Agent. Repeat applications will be required for subsequent generations.

Root weevil adults 1 microinjection unit every 6 inches Apply when first feeding damage occurs. Repeat applications at 4-week intervals until the first heavy frost, may be necessary for complete foliage protection.

Box elder bugs	1 microinjection unit every 6 inches	As the insects begin to appear.
Thrips		
White flies		
Sawflies		
Budworms		
Leafhoppers		
Scaleworms		
Casebearer		
Webworms		
Leafrollers		
Pine needle miner		
<hr/>		
Bronze birch borer	1 microinjection unit every 6 inches	Mid-July through August
<hr/>		
Japanese beetle	1 microinjection unit every 4 inches	As the Japanese beetles begin to appear. Repeat applications at 4-week intervals may be necessary.
<hr/>		
Elm leaf beetle (larvae)	1 microinjection unit every 4 inches	As the larvae begin to appear. ARBOR-THENE® will not prevent elm leaf beetle eggs from hatching.
<hr/>		
Flowering Crabapples	Aphids Tent-caterpillars Leafrollers	1 microinjection unit every 10 inches As the insects begin to appear.

Caution: Phytotoxicity has occurred on the following crabapple varieties: 'Hopa', 'Ichonoski', 'Malus floribunda', 'Pink Perfection', 'Red Wine', and 'Snow Cloud'.

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STORAGE AND DISPOSAL

PROHIBITIONS

Do not contaminate water, food or feed by storage, or disposal of microinjection units.
Open dumping is prohibited.

STORAGE

Store microinjection units in a cool, dry place. Do not expose to temperatures below 32° F (0° C).
Protect from excessive heat.
Do not contaminate food or foodstuffs.
Do not store or transport near feed or food.
For help with any spill, leak, fire or exposure involving this material, call day or night (415) 233-3737.

PESTICIDE DISPOSAL

Wastes resulting from use of this product must be disposed of according to local, state, and federal regulations at an approved waste facility.

MICROINJECTION UNIT DISPOSAL

Do not reuse microinjection units. Used microinjection units should be placed in the heavy-duty plastic bag which accompanies each case of microinjection units. The bag should be properly sealed, placed into the original shipping carton and returned freight prepaid for disposal to Tree Technology Systems, Inc., 1014 Rein Rd., Cheektowaga, NY 14225.

ORTHENE and ARBOR,THENE[®]-TM of Chevron Chemical Company for acephate insecticide for use exclusively in the ARBOR,™ microinjection system.

IMPORTANT INFORMATION. READ BEFORE USING PRODUCT.

LIMITED WARRANTY:

1. Tree Technology Systems, Inc. warrants that this product conforms to the chemical description on the label and is reasonably fit for use under average conditions when used strictly in accordance with the directions on the labelling. Tree Technology Systems, Inc. does not make nor authorize any agent or representative to make any other warranty, guarantee or representation, express or implied, concerning this product. Specifically, NO IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE IS MADE.

BEST AVAILABLE COPY

2. Critical and unforeseeable factors beyond the control of Tree Technology Systems, Inc. prevent it from eliminating all risks in connection with the use of this product. Such risks include, but are not limited to, damage to plants to which the product is applied, lack of complete control over the handling and application of this product, and damage caused by drift to other plants or crops. Such risks occur even though the product is reasonably fit under average conditions for the uses stated on the labelling and even though label directions are followed. Buyer and user acknowledge and assume all risks and liability (except those assumed by Tree Technology Systems, Inc. under 1 above) resulting from handling, storage and use of this product.

3. Precautions stated on the labelling should be followed to avoid hazardous exposure to the product. Neither Tree Technology Systems, Inc. nor its employees or distributors will be liable for any damages resulting from improper use of the microinjection units.

BEST AVAILABLE COPY

Reference No. 4

192-211

05/26/2000

1/4



U.S. ENVIRONMENTAL PROTECTION AGENCY
Office of Pesticide Programs
Registration Division (H7505C)
401 "M" St., S.W.
Washington, D.C. 20460

EPA Reg. Number:

192-211

Date of Issuance:

MAY 26 2000

Term of Issuance:

Conditional

Name of Pesticide Product:

Dexol Systemic Plant Care

NOTICE OF PESTICIDE:

- Registration
- Reregistration

(under FIFRA, as amended)

Name and Address of Registrant (include ZIP Code):

Dexol, A Wholly Owned Subsidiary
of Verdant Brands, Inc.
9555 James Ave., South, Suite 200
Bloomington, MN 55431-2543

Note: Changes in labeling differing in substance from that accepted in connection with this registration must be submitted to and accepted by the Registration Division prior to use of the label in commerce. In any correspondence on this product always refer to the above EPA registration number.

On the basis of information furnished by the registrant, the above named pesticide is hereby registered/reregistered under the Federal Insecticide, Fungicide and Rodenticide Act.

Registration is in no way to be construed as an endorsement or recommendation of this product by the Agency. In order to protect health and the environment, the Administrator, on his motion, may at any time suspend or cancel the registration of a pesticide in accordance with the Act. The acceptance of any name in connection with the registration of a product under this Act is not to be construed as giving the registrant a right to exclusive use of the name or to its use if it has been covered by others.

This product is conditionally registered in accordance with FIFRA sec. 3(c)(7)(A) provided that you:

1. Submit and/or cite all data required for registration of your product under FIFRA sec. 3(c)(5) when the Agency requires all registrants of similar products to submit such data; and submit acceptable responses required for reregistration of your product under FIFRA section 4.

2. Make the following label changes before you release the product for shipment:

- a. Add the designation, "EPA Reg. No.192-211".
- b. Refer to the enclosed copy of PR Notice 2000-3 for current guidance in regards to the First Aid statements.

3. Submit two copies of the revised final printed label before you release the product for shipment.

If these conditions are not complied with, the registration will be subject to cancellation in accordance with FIFRA sec. 6(e). Your release for shipment of the product constitutes acceptance of these conditions.

A stamped copy of the label is enclosed for your records.

Signature of Approving Official:

Marilyn S. Mout

Date:

MAY 26 2000

FRONT PANEL

DEXOL SYSTEMIC PLANT CARE

Insecticide/Plant Food

6 Week Protection
Kills both chewing
and sucking insects
as listed

Absorbs through roots
to protect from the inside
out - Won't wash off with
rain or sprinklers.

For Roses, Flowers, & Shrubs
For outdoor use around the home only.

8-12-4

KEEP OUT OF REACH OF CHILDREN

CAUTION

See additional precautionary statements and First Aid on back panel

ACTIVE INGREDIENTS:

Acephate (O,S-Dimethyl acetylphosphoroamidothioate).....	1.50%
OTHER INGREDIENTS:.....	98.50%
TOTAL.....	100.00%

NET WEIGHT _____

EPA Reg. No. 192-

EPA Est. No. 192-CA-1; 769-GA-1; 44616-MO-1

^D ^S ^H
Circled letter corresponds to first letter of lot number on container.

Distributed by: Dexol, a division of
VERDANT BRANDS, INC.
9555 JAMES AVENUE SOUTH
SUITE 200
BLOOMINGTON, MN 55431

ACCEPTED
with COMMENTS
in EPA Letter Dated:

MAY 26 2000
Under the Federal Insecticide,
Fungicide, and Rodenticide Act
as amended, for the pesticide
registered under EPA Reg. No.
192-211

BACK PANEL

PRECAUTIONARY STATEMENTS
HAZARDS TO HUMANS AND DOMESTIC ANIMALS

CAUTION: Harmful if absorbed through the skin. Avoid breathing dust. Avoid contact with skin, eyes, or clothing.

FIRST AID

If Swallowed: Call a physician or Poison Control Center immediately. **If Inhaled:** Remove victim to fresh air. Apply artificial respiration, preferably mouth-to-mouth, if indicated. **If On Skin:** Remove contaminated clothing. Wash affected area with soap and water. If irritation appears get medical attention. **If In Eyes:** Flush eyes with plenty of water. Get medical attention if irritation persists. **Note to Physician:** If symptoms of cholinesterase inhibition are present, atropine sulfate by injection is antidotal. 2-PAM is also antidotal and may be administered in conjunction with atropine.

USER SAFETY RECOMMENDATIONS

When handling the product, wear chemical resistant gloves, long pants, and long sleeved shirt. Wash the outside of gloves with soap and water before removing. Users should wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet. User should remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.

ENVIRONMENTAL HAZARDS

Do not apply directly to water. Do not contaminate water when disposing of equipment washwaters or rinsate.

DIRECTIONS FOR USE

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

Dexol Systemic Plant Care 8-12-4 contains an effective systemic insecticide that provides up to 6 weeks control of Aphids, Lacebugs, Leafhoppers, Cuban Laurel Thrips, Leafminers, Leaf Beetles, Leaf-tiers, and worms. This combination of a fertilizer with a systemic insecticide helps plants to grow strong and vigorously and prevents damage caused by certain destructive insects as they feed. Systemic means that the insecticide is actually absorbed into the plant through the root system and then moves internally through the sap stream into the branches, leaves, blossoms and new growth. Dexol Systemic Plant Care 8-12-4 protects against insects for 6 weeks. It cannot be washed off by rain or sprinkling since the protection is internal. This systemic action protects all plant surfaces including undersides of leaves and blossoms. New growth is also fully protected. When used as directed, Dexol Systemic Plant Care 8-12-4 kills the following insects on roses, flowers and shrubs: Aphids (Plant Lice), Cuban Laurel Thrips (Ficus), Leafhoppers, Lace Bugs, Holly Leaf Miners, Birch Leaf Miners, Maple Shoot Moth, Elm Leaf Beetles, Willow Leaf Beetles, Obscure Root Weevil on Azalea and Rhododendron. Avoid contact with skin. Always wear chemical resistant gloves, long pants, and long sleeved shirt when applying this product or mixing into the soil as directed. DO NOT apply to plants to be used for food or feed. DO NOT apply to ornamentals that are planted directly beneath food producing trees such as fruit or nut bearing trees. FOR ESTABLISHED PLANTS: Apply when plants have about one inch of new growth in the spring and reapply every six weeks through the end of summer. Avoid contact with skin. FOR ESTABLISHED ROSES: Apply 3.3 oz. (1/2 cup) evenly over an area of 3' x 3' (9 sq ft.) around the base of each plant and work into top 1 or 2 inches of soil. Water in thoroughly. WHEN PLANTING NEW ROSE BUSHES: Do not apply to newly planted roses until they have become well established or have been planted in the ground for 3 months. Then follow direction for Established Roses. FOR FLOWERS: Apply approximately 2/3 lb. per each 25 sq. ft. (5' x 5') of bed area. Work into top 1 to 2 inches of soil. Plant seed or set plant and water thoroughly. Do not apply additional fertilizer for six weeks. Do not get on foliage when foliage is wet. FOR ORNAMENTAL SHRUBS: Apply 3.3 oz. (2/3 cup) for each foot of shrub height (2 cups for a 3' high shrub). Distribute the required amount evenly from the base to the dripline of all sides of the plants. Work into top 1 to 2 inches of soil and water in thoroughly.

STORAGE AND DISPOSAL

Do not contaminate water, food or feed by storage and disposal.

Storage: Store in a cool dry place away from children and pets. Keep in original container and preferably in a locked storage area. **Pesticide Disposal:** Partially filled container can be disposed of by securely wrapping container in several layers of newspaper and discarding in trash. **Container Disposal:** Do not reuse empty container. Securely wrap container in several layers of newspaper and discard in trash.

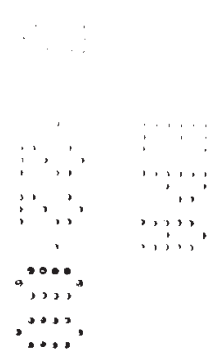
GUARANTEED ANALYSIS

Total Nitrogen (N)	8.0%
8% Ammoniacal Nitrogen	
Available Phosphate (P ₂ O ₅)	12.0%
Soluble Potash (K ₂ O)	4.0%
Total Magnesium (Mg)	
0.2% Water soluble (Mg)	
Sulfur (S)	12.0%
12% Combined Sulfur (S)	
Boron (B)	0.02%
Total Iron (Fe)	0.75%
Total Manganese (Mn)	0.06%
0.01% Water Soluble Mn	
Total Zinc (Zn)	0.05%
0.02% Water Soluble Zn	

Plant nutrients derived from: Ammonium Phosphate, Ammonium Sulfate, Diammonium Phosphate, Gypsum, Iron Oxide, Sodium Borate, Magnesium Oxide, Magnesium Sulfate, Magnesium Oxide, Manganese Sulfate, Potassium Sulfate, Zinc Oxide, Zinc Sulfate. Potential acidity: 600 lbs. calcium carbonate equivalent per ton.

8 + f 11

Verdant Brands will not accept liability for damage or injury resulting from misuse. For information on this pesticide product (including health concerns, medical emergencies, or pesticide incidents), call the National Pesticide Telecommunications Network at 1-800-858-7378. If you are not completely satisfied with this product, or for consumer information, call (612) 703-3300 weekdays 9-5 Central Time to arrange for a refund of the purchase price or replacement of the product. Proof of purchase is required.



Reference No. 5a

PM-14

239-2461

1053

Vol. 2 of 2

5428390 $\frac{300}{18}$

DEC 21 1992

5430515 $\frac{300}{18}$

Chevron Chemical Company
Ortho Consumer Products Division
940 Hensley Street
Richmond, CA 94804

Gentlemen:

Subject: Cartridge Sprayer Application
Ortho Malathion 50 Insect Spray
EPA Registration No. 239-739
Orthene Systemic Insect Control
EPA Registration No. 239-2461
Your Labeling Submitted October 20, 1992

The labeling referred to above, submitted in connection with registration under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), as amended, is acceptable provided that you:

1. Make the labeling change listed below before you release the product for shipment bearing the revised labeling:
 - Delete the claim "Child Resistant Package." If you wish to retain this claim, submit your corrected application form with the appropriate box checked in item one for Child-Resistant Packaging and your certification prior to releasing the product for shipment.
2. Submit five (5) copies of your final printed labeling before you release the product for shipment.

If this condition is not complied with, the registration will be subject to cancellation in accordance with FIFRA section 6(e). Your release for shipment of the product constitutes acceptance of these conditions.

It is understood that the labeling designated as copy A, B, C, and D will not be used in connection with any other type of applicator/ application.

63629:I:Forrest:WP14-04:KEVRIC:12/11/92:01/10/93

-2-

It is also understood that the "instruction booklet" referenced in copy A duplicates those instructions pertinent to the cartridge sprayer which are given on the basic product label submitted with your application.

A stamped copy of the label is enclosed for your records.

It is noted for the record that the registered basic product label for the subject EPA Reg. No. 239-739 contains uses that are not being supported. Your revised, basic label submitted July 21, 1992 showing the deletion of such uses is currently under evaluation.

Sincerely yours,

Robert A. Forrest
Product Manager (14)
Insecticide-Rodenticide Branch
Registration Division (H7505C)

Enclosure

Reference No. 5b

239-2461

3-7-2003

562 7717 1/7



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

WASHINGTON, D.C. 20460

OFFICE OF
PREVENTION, PESTICIDES
AND TOXIC SUBSTANCES

MAR - 7 2003

Mr. Charles T. Levey
Manager, Federal Registrations
The Scotts Company d/b/a The Ortho Group
14111 Scottslawn Rd.
Marysville, OH 43041

Dear Mr. Levey:

Subject: Deletion of Lawns (Except Fire Ant Mound)
EPA Reg. No. 239-2461
Labeling Submitted January 6, 2003 and Additional
Information Submitted With e-mail of January 30, 2003
Federal Register Notices of November 28, 2001,
March 6, 2002 and April 15, 2002

The labeling amendment referred to above, submitted in connection with registration under the Federal Insecticide, Fungicide, and Rodenticide Act, As Amended (FIFRA), is acceptable, provided that you submit two copies of your final printed label before you release the product for shipment.

If this condition is not complied with, the registration will be subject to cancellation in accordance with FIFRA sec. 6(e). Your release for shipment of the product bearing the amended label constitutes acceptance of this condition.

As specified in the Federal Register cancellation order for the use deletion (March 6, 2002 ; Volume 67, Number 44, as corrected April 15, 2002; Volume 67, Number 72), the last date for sale and distribution of existing stocks by the registrant bearing the deleted use on lawns (except for fire ant mound treatment) was December 31, 2002.

A stamped copy of the label is enclosed for your records.

2/1

Page 2

Additional label revisions may be needed upon submittal and review of your response to the Interim Reregistration Eligibility Decision for Acephate (IRED) which was mailed to registrants in December of 2002.

Sincerely,



Marilyn A. Mautz
Biologist
Insecticide-Rodenticide Branch
Registration Division (7504C)

3/7

ORTHO® ORTHENE® Systemic Insect Control, EPA Reg. No. 239-2461

Makes 21 gallons diluted spray. (Quart)

Makes 10 gallons diluted spray. (Pint)

OUTDOOR USE ONLY

CONTROLS: Aphids, Armyworms, Bagworm, Black Vine Weevil, Budworms, Cankerworms, Cuban Laurel Thrips, Flower Thrips, Grasshoppers, Gypsy Moth, Imported Fire Ants, Japanese Beetles, Leafhoppers, Leafminers, Leafrollers, Leaf-tiers, Loopers, Mealybugs, Pine Tip Moth, Psyllids, Root Weevil, Rose Midge, Sawflies, Spittlebug, Scale (crawlers), Tent Caterpillars, Webworms, Whitefly and other listed leaf-eating caterpillars.

ON: Roses, Flowers, Ornamentals, Shrubs and Shade Trees.

Kills Bugs on Contact

Use on Over 100 Plant Varieties

Stops Plant Damage

Thank you for choosing ORTHO. You'll like the results and so will your plants.

[READY-SPRAY™ Applicator only] Ready-to-use concentrate mixes automatically with water through the attached hose-end sprayer.

Active Ingredient

Acephate.....9.4%

Other Ingredients.....90.6%

KEEP OUT OF REACH OF CHILDREN

WARNING

See back panel booklet for additional precautionary statements.

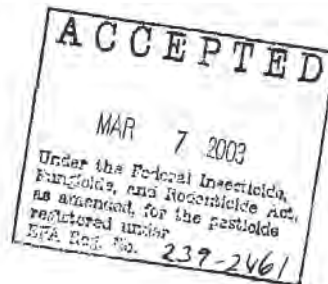
NET 32 fl oz (1 Qt) 946 ml

16 fl oz (1 Pt) 473 ml

Specially formulated for residential use.

For homeowner use only.

Do not apply to plants to be used for food or feed.



DIRECTIONS FOR USE

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

OPEN

Resealable Label

for Directions & Precautions

PRESS TO RESEAL

[Dial 'n Spray illustration]

Easy to apply with an Ortho Dial 'n Spray®, hose-end or tank sprayer.

4/7

When treating fire ant mounds, use a sprinkling can.

MIXING INSTRUCTIONS

For Roses, Flowers, Ornamentals, Shrubs & Shade Trees

- **Aphids & Grasshoppers**
Amount to Use: 2 Tbs (1 fl oz) per gallon of water. Ortho® Dial 'n Spray® setting is 1 oz.
- **Japanese Beetles**
Amount to Use: 4 Tbs (2 fl oz) per gallon of water. Ortho® Dial 'n Spray® setting is 2 oz.
- **Other Listed Insects Commonly Found on Ornamental Plants**
Amount to Use: 3 Tbs (1½ fl oz) per gallon of water. Ortho® Dial 'n Spray® setting is 1½ oz.

[Dial n' Spray illustration] When using Ortho® Dial 'n Spray®:

1. Set dial to the setting indicated above.
2. Pour product into sprayer to fill jar one-quarter to one-half full. **DO NOT** add water.
3. After spraying, unused product must be poured back into its original container.

1 Tablespoon (Tbs) = 3 teaspoons (tsp)
1 fl oz = 2 Tbs

Clean sprayer after use by flushing with water.

HOW TO APPLY

Spray entire plant covering both sides of foliage thoroughly.

WHEN TO APPLY

Spray when insects are present or when feeding injury is first noticed.
For hard to kill insects, such as flower thrips, gladiolus thrips, mealybugs, scales, two-spotted spider mites, and whiteflies, spray 2 to 3 times, waiting 7 to 10 days between each application.
Repeat if reinfestation occurs.

OTHER INSECTS COMMONLY FOUND ON ORNAMENTAL PLANTS

Aphids, armyworms, bagworms, **black vine weevil, budworms, cabbage looper, casebearers, catalpa sphinx moth, cherry laurel leaf-tier, Cuban laurel thrips, elm leafbeetle, fall cankerworm, fall webworm, flower thrips, gladiolus thrips, **grasshoppers, green striped mapleworm, gypsy moth, hornworm, Japanese beetles, lacebugs, leafhoppers, leafminers, obliquebanded leafrollers, omnivorous leaf-tier, maple shoot moth, mealybugs, mimosa webworm, Nantucket pine tip moth, oak webworm, oleander caterpillar, orange-striped oakworm, **obscure root weevil (adults), pine tip moth, poplar tentmaker, psyllids, rose midge, sawflies, scales (crawlers), spittlebug, sunflower moth, tent caterpillars, two-spotted spider mites (suppression), webworms, willow leafbeetle, white-marked tussock moth, whiteflies and yellow-necked caterpillar

5/7

****SPECIAL DIRECTIONS**

For Obscure Root Weevil (Adults): Spray foliage in late spring as soon as feeding is noticed (usually about April). Repeat every 4 weeks through September. (Mid-July through August are the peak feeding times.)

For Black Vine Weevil: Spray foliage and soil beneath plants. Begin applications in mid-June. Spray 4 times, waiting 3 weeks between each application.

For Grasshoppers: Spray foliage of plants and soil beneath plants.

Honeysuckle Aphid on Honeysuckle: Spray thoroughly as leaves begin spring expansion. Reapply in 2 weeks with a third spray 4 weeks after second application.

ORNAMENTAL PLANTS

Ortho® Orthene® Systemic Insect Control can be used on over 100 plant varieties including: abelia, ageratum, alder, aluminum plant, alyssum, arborvitae, ardisia, ash, asparagus fern, aster, azalea, bald cypress, barberry, begonia, birch, bird of paradise, bischofia, bougainvillea, Boston ivy, boxwood, calendula, camellia, carissa, carnation, catalpa, cedar, cherry laurel, Chinese elm, Chinese holly, chrysanthemum, cockspur thorn, coleus, cotoneaster, crapemyrtle, croton, Cuban laurel (fig), dahlia, daisy, dieffenbachia, dracaena, euonymus, false aralia, fir, flowering almond, flowering cherry, flowering plum, fruitless mulberry, fuchsia, gardenia, geranium, gladiolus, gloxinia, hackberry, hawthorn, hemlock, hibiscus, holly, honey locust, honeysuckle, ivy, juniper, lantana, ligustrum, lilac, linden, magnolia, mahonia, maple, marigold, mimosa, mock orange, nandina, nephthytis, oak, oleander, orchid, ornamental cabbage, osmanthus, palm, periwinkle, petunia, philodendron, photinia, pine, pittosporum, podocarpus, poinsettia, poplar, primrose, purple passion, pyracantha, rhododendron, rose, rose of Sharon, salvia, sassafras, schefflera, Siberian elm, silver maple, slippery elm, snapdragon, spirea, spruce, staghorn sumac, sweet gum, sycamore, tulip, viburnum, wandering Jew, wild cherry, willow, wisteria, yaupon, yew (taxus), yucca and zinnia.

Important: Do not apply to American elm, flowering crabapple, sugar maple, red maple, cottonwood, redbud or weigelia as foliage injury may occur. Do not apply to plants to be used for food or feed.

COMBINATION SPRAY WITH FUNGICIDE ON ORNAMENTAL PLANTS

Ortho® Orthene® Systemic Insect Control may be mixed with the following fungicides (at the label rates for both products): RosePride® Funginex® Rose & Shrub Disease Control or Ortho® Multi-Purpose Fungicide Daconil 2787® Plant Disease Control. Follow directions on both labels. Do not make more than two consecutive applications of combination spray.

COMBINATION SPRAY WITH FUNGICIDE OR FERTILIZER ON ROSES: May be used together with ORTHO FUNGINEX® Rose Disease Control at the rates recommended on each product label. Apply fungicides on a regular schedule for disease control; add ORTHENE® Systemic Insect Control only when necessary for insect control. Do not apply more than two consecutive applications. Do not apply in combination with any of the above fungicides.

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FIRE ANTS

Mixing Instructions for Fire Ant Mounds On Bermudagrass, Centipedegrass, Bahiagrass, St. Augustinegrass and Bare Ground

Sprinkling Can: 2 Tbs (1 fl oz) per gallon of water for each mound.

HOW TO APPLY

Thoroughly wet mound and treat a 4-ft diameter area around mound.

WHEN TO APPLY

For best results apply in cool weather or in early morning or late afternoon. Treat new mounds as they appear.

[Language for READY-SPRAY Applicator only]

HOW TO USE

Connect attached spray nozzle to garden hose. Turn water control ON/OFF valve on top of spray nozzle to "OFF" position. Turn on water at faucet.

Using a coin or key, rotate the small product control valve located near front of nozzle forward to the "OPEN" position.

To BEGIN spraying, point spraying nozzle toward plants and turn the water control ON/OFF valve to "ON" position. The sprayer automatically mixes the product into the spray stream. Spray upper and lower leaf surfaces thoroughly.

To STOP spraying, turn water control ON/OFF valve to "OFF" position. Rotate small product control valve back to "CLOSED" position. Turn off water at faucet. To relieve pressure on hose, turn the water control ON/OFF valve to "ON" position before removing nozzle from hose, being careful to point nozzle away from you.

[Re-entry icon] Do not allow children or pets to come into contact with treated surfaces until sprays have dried.

STORAGE AND DISPOSAL

STORAGE: Keep pesticide in original container. Do not put concentrate or dilute into food or drink containers. Avoid contamination of feed and foodstuffs. Store in a cool, dry place, preferably in a locked storage area. Do not store diluted spray.

DISPOSAL: If empty: Do not reuse this container. Place in trash or offer for recycling if available. If partly filled: Call your local solid waste agency or 1-800-CLEANUP for disposal instructions. Never place unused product down any indoor or outdoor drain.

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS & DOMESTIC ANIMALS

WARNING: Causes eye irritation. Harmful if swallowed. Do not get in eyes. Avoid contact with skin or clothing. Avoid breathing vapor or spray mist. When handling this product, wear chemical resistant gloves, long pants, and long-sleeved shirt. When using outdoors, spray with the wind to your back and do not use when wind speeds are 10 mph or more. Wash the outside of the gloves with soap and water before removing.

FIRST AID:

239-2461 (1/6/03)

7/7

If in eyes: Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.

If swallowed: Call a poison control center or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by a poison control center or doctor. Do not give anything by mouth to an unconscious person.

If inhaled: Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. Call a poison control center or doctor for further treatment advice.

If on skin or clothing: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.

Have the product container or label with you when calling a poison control center or doctor, or going for treatment.

Note to Physicians: Emergency Information call 1-800-225-2883. This product contains a cholinesterase inhibitor. If signs and symptoms of cholinesterase inhibition are present, atropine is antidotal. 2-PAM may also be given in conjunction with atropine.

ENVIRONMENTAL HAZARDS: This pesticide is toxic to birds. Do not apply directly to water. Do not contaminate water by cleaning of equipment or disposal of wastes. Cover or soil-incorporate spills.

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

PHYSICAL OR CHEMICAL HAZARDS: Do not use or store near heat or open flame.

NOTICE: Buyer assumes all risks of use, storage or handling of this product not in accordance with directions.

[phone icon] Questions, Comments or Medical Information ?
call 1-800-225-2883 www.ortho.com

The ORTHO Group
P.O. Box 190
Marysville, OH 43040
EPA Reg. No. 239-2461
EPA Est. 239-IA-3¹, 58996-MO-1^A
Superscript is first letter of lot number
Made in USA

239-2461 (1/6/03)

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Reference No. 6

5481-8976

09/14/2012

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D C 20460



OFFICE OF CHEMICAL SAFETY
AND POLLUTION PREVENTION

SEP 14 2012

Kaila Moran
Regulatory Consultant
AMVAC
4695 MacArthur Court, Suite 1250
Newport Beach, CA 92660

Subject Orthene 15 Granular
EPA Reg No 5481-8976
Notification Application Dated July 12, 2012
Minor label revisions and updating Storage and Disposal Instructions

Dear Ms Moran

The Agency has received your Application for Pesticide Notification under Pesticide Registration Notices (PRN) 2007-4 and 98-10, dated July 12, 2012 for the subject product, EPA Reg No 5481-8972. The Registration Division (RD) has reviewed this request and finds that the actions requested fall within the scopes of PR Notices 2007-4 and 98-10. The label submitted with the application has been stamped "Notification" and will be placed in our records.

If you have any questions, please call me directly at (703) 308-8043 or email lewis.marianne@epa.gov

Sincerely,

A handwritten signature in black ink that reads "Marianne Lewis".

Marianne Lewis
Insecticide-Rodenticide Branch
Registration Division (7505P)
Office of Pesticide Programs

	United States Environmental Protection Agency Washington DC 20460	<input type="checkbox"/> Registration <input type="checkbox"/> Amendment <input checked="" type="checkbox"/> Other	OPP Identifier Number
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Application for Pesticide - Section I

1 Company/Product Number 5481-8976	2 EPA Product Manager PM#	3 Proposed Classification <input checked="" type="checkbox"/> None <input type="checkbox"/> Restricted
4 Company/Product (Name) Orthene 15 Granular		
5 Name and Address of Applicant (Include Zip Code) Amvac Chemical Corporation 4695 MacArthur Court Suite 1250 Newport Beach CA 92660 <input type="checkbox"/> Check if this is a new address		6 Expedited Review In accordance with FIFRA Section 3(c)(3)(b)(i) my product is similar or identical in composition and labeling to EPA Reg No _____ Product Name _____

Section - II

<input type="checkbox"/> Amendment Explain below	<input type="checkbox"/> Final printed labels in response to Agency letter dated _____
<input type="checkbox"/> Resubmission in response to Agency letter dated _____	<input type="checkbox"/> "Me Too" Application
<input checked="" type="checkbox"/> Notification Explain below	<input type="checkbox"/> Other Explain below

Explanation Use additional page(s) if necessary (For Section I and Section II) Notification of Minor Label Revisions and Storage and Disposal Statements

Notification of label change per PR Notice 2007 4 This notification is consistent with the guidance in PR Notice 2007 4 and the requirements of EPA s regulations at 40 CFR §§ 156 10 156 140 156 144 156 146 and 156 156 No other changes have been made to the labeling or the Confidential Statement of Formula for this product I understand that it is a violation of 18 U S C Sec 1001 to willfully make any false statement to EPA I further understand that if the amended label is not consistent with the requirements of 40 CFR §§ 156 10 156 140 156 144 156 146 and 156 156 this product may be in violation of FIFRA and I may be subject to enforcement action and penalties under sections 12 and 14 of FIFRA

This notification is consistent with the provisions of PR Notice 98 10 and EPA regulations at 40 CFR 152 46 and no other changes have been made to the labeling or the confidential statement of formula of this product I understand that it is a violation of 18 U S C Sec 1001 to willfully make any false statement to EPA I further understand that if this notification is not consistent with the terms of PR Notice 98 10 and 40 CFR 152 46 this product may be in violation of FIFRA and I may be subject to enforcement action and penalties under sections 12 and 14 of FIFRA

Section - III

1 Material This Product Will Be Packaged In				2 Type of Container	
Child Resistant Packaging <input type="checkbox"/> Yes* <input checked="" type="checkbox"/> No * Certification must be submitted	Unit Packaging <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes Unit Packaging wt No per container	Water Soluble Packaging <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes Package wt No per container	<input checked="" type="checkbox"/> Metal <input checked="" type="checkbox"/> Plastic <input type="checkbox"/> Glass <input type="checkbox"/> Paper <input type="checkbox"/> Other (Specify) _____		
3 Location of Net Contents Information		4 Size(s) Retail Container		5 Location of Label Directions	
<input checked="" type="checkbox"/> Label <input type="checkbox"/> Container				<input checked="" type="checkbox"/> On Label <input type="checkbox"/> On Labeling accompanying product	
6 Manner in Which Label is Affixed to Product					
<input type="checkbox"/> Lithographed <input type="checkbox"/> Stenciled <input checked="" type="checkbox"/> Paper glued <input type="checkbox"/> Other _____					

Section - IV

1 Contact Point (Complete items directly below for identification of individual to be contacted if necessary to process this application)			
Name Kaila Moran	Title Regulatory Consultant	Telephone No (Include Area Code) (562) 607-2146	
Certification I certify that the statements I have made on this form and all attachments thereto are true accurate and complete I acknowledge that any knowingly false or misleading statement may be punishable by fine or imprisonment or both under applicable law			8 Date Application Received (Stamped)
2 Signature 		3 Title Regulatory Consultant	
4 Typed Name Kaila Moran		5 Date 17 Jul 2007	



July 12 2012

Ms Julie Chao
Document Processing Desk
Office of Pesticide Programs (Notif)
U S Environmental Protection Agency
One Potomac Yard
2777 S Crystal Drive
Arlington VA 22202

Subject Notification of Minor Label Revisions and Storage and Disposal Language Per PR Notice 2007-4
Orthene Tobacco Insect Spray (EPA Reg No 5481-8972)
Orthene 15 Granular (EPA Reg No 5481-8976)
Orthene Turf & Container Grown Nursery Stock 15G (EPA Reg No 5481-8977)

Dear Julie

This is submitted in response to the EPA letters dated May 31 2012 as well as our phone conversation June 8 2012 As you mentioned on the phone the Container Disposal Statements updated per the PR Notice 2007-4 are acceptable However you requested revising the language throughout the label with regards to using the word general when referring to mandatory (non-optional) use directions I have made the requested label changes as suggested as well as included REDLINE labels to highlight the revisions I have also revised the applications to with the updated certification under PR 98-10

In support of this request, enclosed please find the following

- Application for each Pesticide Registration (EPA Form 8570-1)
- ^{two} ~~one~~ copies of each label with a redline copy showing changes (Ref No 8972-20120509r1, 8976-20120509r1 8977-20120508r1)
- Copies of the May 31, 2012 letters for reference

It is my understanding that this satisfies the requirements of the Agency's PR Notice and will require no further action If you have any questions or require additional information, please do not hesitate to contact me at 562-607-2146 or email kailam@amvac-chemical.com Thank you for your attention to this matter

Best regards,


Kaila Moran
Regulatory Consultant



20120712kmm02 ace us Orthene Notification PR Notice 2007 4

4695 MacArthur Court, Suite 1200 Newport Beach, CA 92660 (949) 260 1212 Fax (949) 260 1214

4/8

ORTHENE[®] 15 GRANULAR

Soil Applied Insecticide

Active Ingredient
*Acephate
Inert Ingredients
Total
*O,S-Dimethyl acetylphosphoramidothioate

By Weight
15.0%
85.0%
100.0%

U.S. Patent Nos. 5,298,501 5,369,100 5,352,674

NOTIFICATION

SEP 14 2012

**KEEP OUT OF REACH OF CHILDREN
CAUTION**

FIRST AID	
Acephate is an organophosphate, cholinesterase inhibitor	
If swallowed	<ul style="list-style-type: none"> Call a poison control center or doctor immediately for treatment advice Have person sip a glass of water if able to swallow Do not induce vomiting unless told to do so by the poison control center or doctor Do not give anything by mouth to an unconscious person
If in eyes	<ul style="list-style-type: none"> Hold eye open and rinse slowly and gently with water for 15-20 minutes Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye Call a poison control center or doctor for treatment advice
If on skin or clothing	<ul style="list-style-type: none"> Take off contaminated clothing Rinse skin immediately with plenty of water for 15-20 minutes Call a poison control center or doctor for treatment advice
If inhaled	<ul style="list-style-type: none"> Move person to fresh air If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible Call a poison control center or doctor for further treatment advice
EMERGENCY INFORMATION	
Have the product container or label with you when calling a poison control center or doctor or going for treatment. FOR THE FOLLOWING EMERGENCIES, PHONE 24 HOURS A DAY:	
Transportation: CHEMTREC	1-800-424-9300
Other: AMVAC	1-323-264-3910
NOTE TO PHYSICIAN	
Acephate is a cholinesterase inhibitor. If signs of cholinesterase inhibition appear, atropine is antidotal. 2-PAM (PROTOPAM) is also antidotal and may be used in conjunction with atropine but should not be used alone.	

SEE SIDE/BACK PANEL FOR ADDITIONAL PRECAUTIONARY STATEMENTS AND DIRECTIONS FOR USE

EPA Reg. No. 5481-8976
EPA Est. No.

Net Contents
As Marked on Container



4100 E. Washington Blvd
Los Angeles, CA 90023, U.S.A.
1-323-264-3910

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS & DOMESTIC ANIMALS

CAUTION

Harmful if swallowed or absorbed through skin. Causes moderate eye irritation. Avoid contact with skin, eyes or clothing.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

Some materials that are chemical resistant to this product are listed below. If you want more options follow the instructions for category A on an EPA chemical resistance category selection chart.

Mixers, Loaders, Applicators and Other Handlers must wear

- Long sleeved shirt and long pants
- Chemical resistant gloves such as Butyl rubber ≥ 14 mils, Nitrile rubber ≥ 14 mils and Neoprene ≥ 14 mils
- Shoes plus socks

See Engineering Controls for additional requirements

ENGINEERING CONTROLS

When handlers use closed systems or enclosed cabs in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.2430(d)(6)] the handler PPE requirements may be reduced or modified as specified in the WPS.

Follow manufacturer's instructions for cleaning/maintaining PPE. If there are no such instructions for washables exist use detergent and hot water. Keep and wash PPE separately from other laundry. As soon as possible wash thoroughly and change into clean clothing.

USER SAFETY RECOMMENDATIONS

Users should

- Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.
- Remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.

Remove PPE immediately after handling this product. Wash the outside of gloves before removing.

ENVIRONMENTAL HAZARDS

This pesticide is toxic to birds. For terrestrial uses, do not apply directly to water, or to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when cleaning equipment or disposing of equipment washwaters. Cover or soil incorporate spills. Soil incorporate (disc) any surface material present in turn-rows immediately after application to limit exposure of birds to surface granules.

Do not discharge effluent containing this product into lakes, streams, ponds, estuaries, oceans or other waters unless in accordance with the requirements of a National Pollutant Discharge Elimination System (NPDES) permit and the permitting authority has been notified in writing prior to discharge. Do not discharge effluent containing this product to sewer systems without previously notifying the local sewage treatment plant authority. For guidance contact your State Water Board or Regional Office of the EPA.

DIRECTIONS FOR USE

It is a violation of Federal Law to use this product in a manner inconsistent with its labeling. **READ ENTIRE LABEL. USE STRICTLY IN ACCORDANCE WITH PRECAUTIONARY**

STATEMENTS AND DIRECTIONS AND WITH APPLICABLE STATE AND FEDERAL REGULATIONS

Do not apply this product in a way that will contact workers or other persons either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.

AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE), and restricted entry interval. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of 24 hours.

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil or water, is:

- Coveralls
- Chemical resistant gloves made of any waterproof material
- Shoes plus socks

TANK MIXES

NOTICE: Tank mixing or use of this product with any other product which is not specifically and expressly authorized by the label shall be the exclusive risk of user, applicator and/or application advisor.

Read and follow the entire label of each product to be used in the tank mix with this product.

DIRECTIONS

CROP	PESTS CONTROLLED	RATE OF ORTHENE 15 GRANULAR PER ACRE	FURTHER USE INSTRUCTIONS
Cotton	Aphids Cutworms Thrips	5 to 6 2/3 lbs (0.75 to 1.0 lb ai/A)	Apply with in furrow granular application equipment at planting. Minimize surface application by ensuring adequate application depth (2" minimum) and immediate coverage of furrows with soil. Calibrate and adjust application equipment to insure proper rate and accurate placement. Soil incorporate (disc) any surface material present in turn rows immediately after application. Use the higher end of the rate range in areas which historically experience prolonged early season insect pressure due to factors such as adjacent alternate hosts (e.g., maturing cereal grains, weedy underbrush, etc.). Cotton treated with the lower end of the rate range may display more visible feeding symptoms and require subsequent foliar application(s) of insecticide to control prolonged infestations of early season insects. Do not apply more than 4 lbs of ai/A per crop cycle. This includes the use of ORTHENE 15 Granular as an in furrow at planting treatment, all ORTHENE foliar spray liquid in furrow application, hopper box and seed treatment uses.

CALIBRATION GUIDE
Use Rate Lbs /A (lbs ai/A)
Row Ft (rf) to Collect 1 oz ORTHENE 15 Granular

ROW SPACING	5 lbs /A (0.75)	5 1/2 lbs /A (0.83)	6 lbs /A (0.9)	6 2/3 lbs /A (1.0)
30	218 rf	198 rf	182 rf	163 rf
36	182 rf	165 rf	151 rf	136 rf
38"	172 rf	156 rf	143 rf	129 rf
40	163 rf	149 rf	136 rf	123 rf

When applied to soil in which adequate moisture for germination and normal seedling growth is maintained either by irrigation or rainfall the active ingredient in ORTHENE 15 Granular is quickly absorbed by the roots and translocated in the xylem throughout the entire plant. Insufficient moisture after application will result in a lack of insect control.

STORAGE AND DISPOSAL

Do not contaminate water, food or feed by storage, disposal or cleaning of equipment

PESTICIDE STORAGE

Keep pesticide in original container
Store in cool, dry place. Protect from excessive heat.
Do not contaminate food or foodstuffs.
Do not store or transport near feed or food.
For help with any spill, leak, fire or exposure involving this material, call day or night 1-323-264-3910.
Open dumping is prohibited.

PESTICIDE DISPOSAL

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

CONTAINER DISPOSAL

Nonrefillable container. Do not reuse or refill this container. Completely empty bag into application equipment. Do not reuse container. 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.

LIMITED WARRANTY AND DISCLAIMER

The manufacturer warrants (a) that this product conforms to the chemical description on the label, (b) that this product is reasonably fit for the purposes set forth in the directions for use, subject to the inherent risks referred to herein when it is used in accordance with such directions, and (c) that the directions, warnings and other statements on this label are based upon responsible experts' evaluations of reasonable tests of effectiveness of toxicity to laboratory animals and to plants and residues on food crops and upon reports of field experience. Tests have not been made on all varieties of food crops and plants or in all states or under all conditions.

THERE ARE NO EXPRESS WARRANTIES OTHER THAN THOSE SET FORTH HEREIN TO THE EXTENT CONSISTENT WITH APPLICABLE LAW. THE MANUFACTURER, NEITHER MAKES NOR INTENDS, NOR DOES IT AUTHORIZE ANY AGENT OR REPRESENTATIVE, TO MAKE ANY OTHER WARRANTIES, EXPRESS OR IMPLIED, AND IT EXPRESSLY

EXCLUDES AND DISCLAIMS ALL IMPLIED WARRANTIES OF MERCHANTABILITY OF FITNESS FOR A PARTICULAR PURPOSE, OR ANY WARRANTY OF QUALITY OR PERFORMANCE THIS WARRANTY DOES NOT EXTEND TO, AND THE BUYER SHALL BE SOLELY RESPONSIBLE FOR, ANY AND ALL LOSS OR DAMAGE WHICH RESULTS FROM THE USE OF THIS PRODUCT IN ANY MANNER WHICH IS INCONSISTENT WITH THE LABEL DIRECTIONS, WARNINGS OR CAUTIONS

TO THE EXTENT CONSISTENT WITH APPLICABLE LAW BUYER'S EXCLUSIVE REMEDY AND MANUFACTURER'S OR SELLER'S EXCLUSIVE LIABILITY FOR ANY AND ALL CLAIMS, LOSSES, DAMAGES, OR INJURIES RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT, WHETHER OR NOT BASED IN CONTRACT, NEGLIGENCE, STRICT LIABILITY IN TORT OR OTHERWISE, SHALL BE LIMITED, AT THE MANUFACTURER'S OPTION, TO REPLACEMENT OF, OR THE REPAYMENT OF THE PURCHASE PRICE FOR, THE QUANTITY OF PRODUCT WITH RESPECT TO WHICH DAMAGES ARE CLAIMED TO THE EXTENT CONSISTENT WITH APPLICABLE LAW MANUFACTURER OR SELLER SHALL NOT BE LIABLE FOR SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT

AMVAC offers this product and Buyer accepts it, subject to the foregoing Limited Warranty which may be varied only by agreement in writing signed by an authorized representative of AMVAC

Orthene is a registered trademark of OMS Investments Inc

AMVAC Chemical Corporation
4100 E Washington Boulevard
Los Angeles, CA 90023 U S A
1-323-264-3910



Reference No. 7a



Details for ORTHENE 97 PELLETS

EPA Contact Information

[Search Again](#)

You will need Adobe Reader to view some of the files on this page. See [EPA's PDF page](#) to learn more.

Provided below is the information for the product you selected. To view the label, click on the date in the **Accepted Date** Field. The latest label is at the top of the list.

EPA Registration Number: 5481-8978
Company Name: AMVAC CHEMICAL CORPORATION
Address: 4695 MACARTHUR COURT, SUITE 1200
City, State Zip: NEWPORT BEACH, CA 926601706
First Registered Date: MARCH 18, 1998
Current Status (Date): Registered (MARCH 18, 1998)
Restricted Use: NO

- Labels
- Data Comp
- Chemical
- Alt Brand Name
- Inactive Alt Brand Name
- Transfer History
- Site
- Pest

EPA Reg. No.	Product Name	Accepted Date
5481-8978	ORTHENE 97 PELLETS	June 08, 2015 (PDF)
5481-8978	ORTHENE 97 PELLETS	April 16, 2014 (PDF)
5481-8978	ORTHENE 97 PELLETS	March 27, 2013 (PDF)
5481-8978	ORTHENE 97 PELLETS	October 07, 2012 (PDF)
5481-8978	ORTHENE 97 PELLETS	December 07, 2011 (PDF)
5481-8978	ORTHENE 97 PELLETS	April 20, 2009 (PDF)
5481-8978	ORTHENE 97 PELLETS	March 26, 2009 (PDF)
59639-91	ORTHENE 97 PELLETS	April 25, 2007 (PDF)
59639-91	ORTHENE 97 PELLETS	December 15, 2005 (PDF)
59639-91	ORTHENE 97 PELLETS	August 24, 2005 (PDF)
59639-91	ORTHENE 97 PELLETS	January 07, 2004 (PDF)
59639-91	ORTHENE 97 PELLETS	July 26, 2002 (PDF)
59639-91	ORTHENE 97 PELLETS	July 30, 2000 (PDF)
59639-91	ORTHENE 97 PELLETS	July 09, 1999 (PDF)
59639-91	ORTHENE 97 PELLETS	June 29, 1999 (PDF)

row(s) 1 - 15 of 16 [Next](#)

Version: 2.4.1.1

TEMPLATE UPDATED ON
 11 DECEMBER 2016

Reference No. 7b

59639-91

7-30-2000

1/35

Please read instructions on reverse before completing form.

Form Approved. OMB No. 2070-0060

	United States Environmental Protection Agency Washington, DC 20460	<input type="checkbox"/> Registration <input type="checkbox"/> Amendment <input checked="" type="checkbox"/> Other	OPP Identifier Number 266795
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Application for Pesticide - Section I

1. Company/Product Number 59639-91	2. EPA Product Manager Marilyn Mautz <i>T. Lewis</i>	3. Proposed Classification <input type="checkbox"/> None <input type="checkbox"/> Restricted
4. Company/Product (Name) Orthene 97 Pellets	PM# 04	
5. Name and Address of Applicant (Include ZIP Code) Valent USA Corporation 1333 N. California Blvd. Suite 600 Walnut Creek, CA. 94596 <input type="checkbox"/> Check if this is a new address	6. Expedited Review. In accordance with FIFRA Section 3(c)(3) (b)(i), my product is similar or identical in composition and labeling to: NOTIFICATION EPA Reg. No. _____ JUL 30 2000 Product Name _____	

Section - II

<input type="checkbox"/> Amendment - Explain below.	<input type="checkbox"/> Final printed labels in response to Agency letter dated _____
<input type="checkbox"/> Resubmission in response to Agency letter dated _____	<input type="checkbox"/> "Me Too" Application.
<input checked="" type="checkbox"/> Notification - Explain below.	<input type="checkbox"/> Other - Explain below.

Explanation: Use additional page(s) if necessary. (For section I and Section II.)

Notification:

Included the Western Flower Thrips pest. Deleted tank mixes for Ambush and Pounce. Added trademark registration for the term "Eggs/Deadhatch".

Section - III

1. Material This Product Will Be Packaged In:				2. Type of Container	
Child-Resistant Packaging <input type="checkbox"/> Yes* <input type="checkbox"/> No	Unit Packaging <input type="checkbox"/> Yes <input type="checkbox"/> No	Water Soluble Packaging <input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Metal <input type="checkbox"/> Plastic <input type="checkbox"/> Glass <input type="checkbox"/> Paper <input type="checkbox"/> Other (Specify) _____		
* Certification must be submitted		If "Yes" Unit Packaging wgt. _____ No. per container _____	If "Yes" Package wgt. _____ No. per container _____		
3. Location of Net Contents Information <input type="checkbox"/> Label <input type="checkbox"/> Container		4. Size(s) Retail Container		5. Location of Label Directions <input type="checkbox"/> On Label <input type="checkbox"/> On Labeling accompanying product	
6. Manner in Which Label is Affixed to Product		<input type="checkbox"/> Lithograph <input type="checkbox"/> Paper glued <input type="checkbox"/> Stenciled		<input type="checkbox"/> Other _____	

Section - IV

1. Contact Point (Complete items directly below for identification of individual to be contacted, if necessary, to process this application.)		
Name Cheryl D. Miller	Title Labeling Specialist	Telephone No. (Include Area Code) (925) 256-2784
Certification I certify that the statements I have made on this form and all attachments thereto are true, accurate and complete. I acknowledge that any knowingly false or misleading statement may be punishable by fine or imprisonment both under applicable law.		6. Date Application Received (Stamped)
2. Signature <i>Cheryl D. Miller</i>	3. Title Labeling specialist	
4. Typed Name Cheryl D. Miller	5. Date July 19, 2000	

EPA Form 8570-1 (Rev. 8-94) Previous editions are obsolete.

White - EPA File Copy (original)

Yellow - Applicant Copy

July 19, 2000

Attachment to OPP ID: 266795

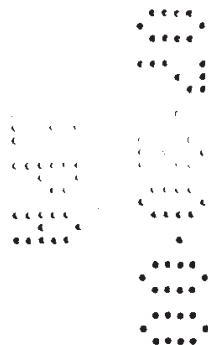
ORTHENE® 97 PELLETS
EPA Reg. No.: 59639-91

Notification: 1) Defining Western Flower Thrip pest on Cotton. 2) Deleted tank mixes for Ambush and Pounce. 3) Addition of the trademark registration for the term Eggs/Deadhatch.

On behalf of Valent U.S.A. Corporation, I certify that this notification is consistent with the provisions of PR Notice 98-10 and EPA regulations at 40 CFR 152.46, and no other changes have been made to the labeling or the confidential statement of formula of this product. I understand that it is a violation of 18 U.S.C. Sec. 1001 to willfully make any false statement to EPA. I further understand that if this notification is not consistent with the terms of PR Notice 98-10 and 40 CFR 152.46, this product may be in violation of FIFRA and I may be subject to enforcement action and penalties under sections 12 and 14 of FIFRA.

Cheryl D. Miller

Cheryl D. Miller
Labeling Specialist
Valent U.S.A. Corporation
1333 N. California Blvd., Ste. 600
Walnut Creek, CA 94596



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ORTHENE® 97 Pellets

(SOLUBLE INSECTICIDE)

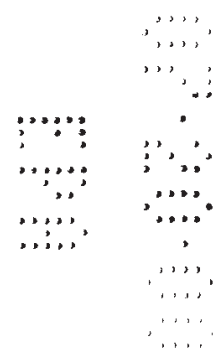
NOTIFICATION
JUL 30 2000

Active Ingredient	By Wt.
Acephate (O,S-Dimethyl acetylphosphoramidothioate)	97%
Other Ingredient	3%
Total	100%

Mfg. in accordance with U.S. Pat. No. 5,464,623; Pat. Pending

KEEP OUT OF REACH OF CHILDREN
CAUTION
SEE NEXT PAGE FOR ADDITIONAL
PRECAUTIONARY STATEMENTS

NET WEIGHT 1 POUND



PRECAUTIONARY STATEMENTS
HAZARDS TO HUMANS & DOMESTIC ANIMALS
CAUTION

Harmful if swallowed. Causes eye irritation. Avoid contact with eyes, skin and clothing. Avoid breathing dust or spray mist. Wash hands thoroughly after handling. Do not allow children or pets to come into contact with treated areas until sprays have dried.

STATEMENT OF PRACTICAL TREATMENT: Acephate is an organophosphate, cholinesterase inhibitor.

If swallowed: Drink 1 or 2 glasses of water (or milk) and induce vomiting by touching the back of the throat with finger. If possible contact a physician, Poison Control Center, or emergency center before inducing vomiting. Do not induce vomiting or give anything by mouth to an unconscious person. Take person and product container to the nearest emergency treatment center.

If in eyes: Wash eyes with fresh water for 15 minutes. If irritation continues, see a doctor.

If on skin: Wash skin with plenty of soap and water.

If inhaled: Remove person from exposure area.

Note to Physicians: Emergency information - call 1-800-892-0099. Acephate is cholinesterase inhibitor. If signs of cholinesterase inhibition appear, atropine is antidotal. 2-PAM may also be used in conjunction with atropine but should not be used alone.

PERSONAL PROTECTIVE EQUIPMENT (PPE):

Applicators and other handlers must wear: long-sleeved shirt and long pants, waterproof gloves, shoes plus socks and chemical-resistant headgear for overhead exposure.

Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them. Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

USER SAFETY RECOMMENDATIONS

Users should:

- Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.
- Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

ENVIRONMENTAL HAZARDS:

This pesticide is toxic to birds. Do not apply directly to water, or to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water by cleaning of equipment or disposal of wastes. Cover or soil-incorporate spills.

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

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DIRECTIONS FOR USE

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

READ ENTIRE LABEL. USE STRICTLY IN ACCORDANCE WITH PRECAUTIONARY STATEMENTS AND DIRECTIONS AND WITH APPLICABLE STATE AND FEDERAL REGULATIONS.

Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.

AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE), and restricted-entry interval. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

Do not enter or allow worker entry into treated areas during the restricted-entry interval (REI) of 24 hours.

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water, is: coveralls, waterproof gloves, shoes plus socks and chemical-resistant headgear for overhead exposure.

NON-AGRICULTURAL USE REQUIREMENTS

The requirements in this box apply to uses of this product that are **NOT** within the scope of the Worker Protection Standard for agricultural pesticides (40 CFR Part 170). The WPS applies when this product is used to produce agricultural plants on farms, forests, nurseries, or greenhouses.

Statement for use on agricultural products:

For non-agricultural areas, do not enter treated areas without protective clothing until sprays have dried.

Statement for use on non-agricultural use Alternate Brand Name products:

For other uses, including golf courses and other non-agricultural areas, do not enter treated areas without protective clothing until sprays have dried.

[Worker Protection exclusionary statement for use only with Cotton Seed Treatment use.]

Not for use on agricultural establishments in hopper-box, planter-box, slurry-box or other seed treatment applications at, or immediately before, planting.

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**DISCLAIMER, RISKS OF USING THIS PRODUCT,
LIMITED WARRANTY
AND LIMITATION OF LIABILITY**

IMPORTANT: Read the entire Label including this Disclaimer, Risks of Using this Product, Limited Warranty, and Limitation of Liability before using this product. If the terms are not acceptable THEN DO NOT USE THE PRODUCT; rather, return the unopened product within 15 days of purchase for a refund of the purchase price.

RISKS OF USING THIS PRODUCT

The Buyer and User (referred to collectively herein as "Buyer") of this product should be aware that there are inherent unintended risks associated with the use of this product which are impossible to eliminate. These risks include, but are not limited to, injury to plants and crops to which this product is applied, lack of control of the target pests or weeds, resistance of the target pest or weeds to this product, injury caused by drift, and injury to rotational crops caused by carryover in the soil. Such risks of crop injury, non-performance, resistance or other unintended consequences are unavoidable and may result because of such factors as weather, soil conditions, disease, moisture conditions, irrigation practices, condition of the crop at the time of application, presence of other materials either applied in the tank mix with this product or prior to application of this product, cultural practices or the manner of use or application, (or a combination of such factors) all of which are factors beyond the control of Valent. The Buyer should be aware that these inherent unintended risks may reduce the harvested yield of the crop in all or a portion of the treated acreage, or otherwise affect the crop such that additional care, treatment and expense are required to take the crop to harvest. If the Buyer chooses not to accept these risks, THEN THIS PRODUCT SHOULD NOT BE APPLIED. By applying this product Buyer acknowledges and accepts these inherent unintended risks AND AGREES THAT ALL SUCH RISKS ASSOCIATED WITH THE APPLICATION AND USE ARE ASSUMED BY THE BUYER.

Valent shall not be responsible for losses or damages (including, but not limited to, loss of yield, increased expenses of farming the crop or such incidental, consequential or special damages that may be claimed) resulting from use of this product in any manner not set forth on the label. Buyer assumes all risks associated with the use of this product in any manner or under conditions not specifically directed or approved on the label.

LIMITED WARRANTY

Valent warrants only that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated in the label, under average use conditions, when used strictly in accordance with the label and subject to the Risks of Using This Product as described above. EXCEPT AS SET FORTH ABOVE, VALENT MAKES NO OTHER WARRANTIES, EITHER EXPRESSED OR IMPLIED. No agent or representative of Valent or Seller is authorized to make or create any other express or implied warranty.

LIMITATION OF LIABILITY

In no event shall Valent or Seller be liable for any incidental, consequential, indirect or special damages resulting from the use or handling of this product. The limitation includes, but is not limited to, loss of yield on all or any portion of the treated acreage, increased care, treatment or other expenses required to take the crop to harvest, increased finance charges or altered finance ratings, emotional or mental distress and/or exemplary damages. THE EXCLUSIVE REMEDY OF THE BUYER, AND THE EXCLUSIVE MAXIMUM LIABILITY OF VALENT OR SELLER FOR ANY AND ALL CLAIMS, LOSSES, INJURIES OR DAMAGES (INCLUDING CLAIMS BASED ON BREACH OF WARRANTY, CONTRACT, NEGLIGENCE, TORT, STRICT LIABILITY OR OTHERWISE) RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT SHALL BE THE RETURN OF THE PURCHASE PRICE OF THIS PRODUCT OR, AT THE ELECTION OF VALENT OR SELLER, THE REPLACEMENT OF THE PRODUCT.

PROMPT NOTICE OF CLAIM

Valent must be provided notice as soon as Buyer has reason to believe it may have a claim, but in no event later than twenty-one days from date of planting, or twenty-one days from the date of application, whichever is later, so that an immediate inspection of the affected property and growing crops can be made.

If Buyer does not notify Valent of any claims, in such period, it shall be barred from obtaining any remedy.

NO AMENDMENTS

Valent and Seller offer this product, and Buyer accepts it, subject to the foregoing Disclaimer, Risks of Using This Product, Limited Warranty and Limitation of Liability, which may not be modified by any oral or written agreement.

TANK MIXES

NOTICE: Tank mixing or use of this product with any other product which is not specifically and expressly authorized by the label shall be the exclusive risk of user, applicator and/or application advisor.

Read and follow the entire label of each product to be used in the tank mix with this product.

GENERAL INFORMATION

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DIRECTIONS

CHEMIGATION

Apply to Cranberries only by sprinkler irrigation systems. Do not apply by chemigation to any other crop, or this crop using any other type of irrigation system.

GENERAL MIXING INSTRUCTIONS

Thoroughly clean all sprayer components prior to mixing. Add approximately 1/2 of the required amount of water to the spray tank and begin agitation. Add the required amount of ORTHENE 97 Pellets insecticide and mix thoroughly. Then add other tank mix partners or foliar feed additives and the remaining water. Maintain agitation during filling and spraying to ensure a uniform spray mixture.

For application equipment, which has minimal agitation such as tobacco transplant water equipment, proper attention to mixing the ORTHENE 97 Pellets product should be given. With tobacco transplant water applications the ORTHENE 97 Pellets product should be premixed in water to form a slurry prior to putting the product into the transplant water applicator. If premixing is not done, then adequate time should be allowed for the product to dissolve in the transplant water prior to beginning application.

BEANS AND LIMA BEANS - Dry and Succulent Forms

TABLE 1. Beans and Lima Beans - Dry and Succulent Forms - Recommendations for Use

APPLICATION METHOD	PEST CONTROLLED	RATES OF ORTHENE 97 PELLETS PER ACRE	REMARKS	DAYS TO HARVEST
FOLIAR By Ground: 20 to 100 gals./A of spray. By Air: Minimum of 2 gals./A of spray.	Fleahoppers Grasshoppers	1/4 to 1/2 lb. (4 to 8 oz.)	Apply when eggs or insects first appear.	14 (snapbeans - succulent or dry beans)
	Aphids (excluding Black Bean Aphid) Bean Leaf Beetle Bean Leafroller Cabbage Looper Cutworms Green Cloverworm Leafhoppers Mexican Bean Beetle Plantbugs (Lygus) Soybean Looper Thrips Whitefly (Except Sweetpotato or Silverleaf Whitefly)	1/2 to 1.0 lb. (8 to 16 oz.)	Repeat at 7 to 10 day spray intervals as necessary to maintain control. Use higher rates for severe insect infestations.	0 (lima beans - succulent form)
	Armyworms (excluding Beet Armyworm) Corn Earworm European Corn Borer	3/4 to 1.0 lb. (12 to 16 oz.)		
USE PRECAUTIONS: Do not feed treated vines to livestock. Do not apply more than 2-1/8 lbs./A (2 lbs. ai) per season.				

CELERY

TABLE 2. Celery - Recommendations for Use

APPLICATION METHOD	PESTS CONTROLLED	RATES OF ORTHENE 97 PELLETS PER ACRE	REMARKS	DAYS TO HARVEST
FOLIAR By Ground: 50 to 100 gals./A of spray. By Air: Minimum of 5 gals./A of spray.	Green Peach Aphid	1/2 to 1.0 lb. (8 to 16 oz.)	Apply when eggs or insects first appear. Repeat at 3 to 10 day spray intervals as necessary to maintain control.	21
	Cabbage Looper Fall Armyworms	1.0 lb. (16 oz.)		
USE PRECAUTIONS: All celery must be trimmed (tops removed) before shipment for use. Do not use trimmed tops for food or feed. Do not apply more than 2-1/8 lbs./A (2 lbs. ai) per season.				

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COLE CROPS

BRUSSELS SPROUTS & CAULIFLOWER

TABLE 3. Cole Crops - Brussels Sprouts & Cauliflower - Recommendations for Use

APPLICATION METHOD	PESTS CONTROLLED	RATES OF ORTHENE 97 PELLETS PER ACRE	REMARKS	DAYS TO HARVEST
FOLIAR By Ground: 25 to 150 gals./A of spray. By Air: Minimum of 5 gals./A of spray.	Green Peach Aphid	1/2 to 1.0 lb. (8 to 16 oz.)	Use the high rate when heavy infestations of aphids are present. Apply when eggs or insects first appear. Repeat application as necessary to maintain control.	14
	Cabbage Looper Diamondback Moth Larvae Imported Cabbage Worm	1.0 lb. (16 oz.)	Diamondback Moth Larvae: This insect has demonstrated an ability to develop resistance to various classes of insecticides. Consult your local Agricultural Extension Service for current recommended control practices for this insect.	
USE PRECAUTIONS: Do not apply more than 2-1/8 lbs./A (2 lbs. ai) per season to Brussels Sprouts and Cauliflower. Do not feed trimmings to livestock or allow animals to graze in treated areas.				

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COMMERCIALY TREATED COTTONSEED

COMMERCIALY TREATED COTTONSEED

TABLE 4. COMMERCIALY TREATED COTTONSEED - Recommendations for Use

PESTS CONTROLLED	AMOUNT PER 100 LBS. COTTONSEED	EFFICACY	REMARKS
Cotton Aphids Thrips (Including Western Flower Thrips)	6.4 oz. (4/10 lb.)	Gives effective reduction of thrips and cotton aphids for up to three weeks after planting	ORTHENE 97 Pellets contain a water-soluble systemic insecticide which helps to reduce injury to cotton seedlings by several insects. ORTHENE 97 Pellets can be mixed in the slurry tank with most of the fungicide seed treatments in common use. ORTHENE 97 Pellets can also be applied as a separate treatment using enough water to give adequate coverage of the seed. ORTHENE 97 Pellets dissolve quickly in water with a minimum of agitation.
Black (Greasy) Cutworm	6.4 oz. (4/10 lb.)	Gives effective reduction of Black (Greasy) Cutworm from planting through the 3 rd to 4 th leaf stage of development. When planting into fields where large cutworms are present (5 th instar and larger) economic damage may occur	

USE PRECAUTIONS: When using formulations that do not contain dye, compliance with 21 CFR Chapter 1, Section 2.5 requires that all seed treated with a pesticide must be colored to distinguish from, and prevent subsequent inadvertant use as, food for man or feed for animals.

Treated seed must not be used for, or mixed with, food or animal feed, or processed for oil. Seed treated with ORTHENE 97 Pellets may be considered adulterated under state and federal laws if sold or shipped as food or feedstuffs. Seed commercially treated with ORTHENE 97 Pellets must be labelled as follows: "TREATED SEED DO NOT USE FOR FOOD, FEED OR OIL."

Observe all precautions and limitations on labelling of all products used in mixtures.

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COTTON

GENERAL USE PRECAUTIONS

Do not use treated seed for food or feed purposes or process for oil.
 Do not feed gin trash to livestock.
 Do not allow animals to graze on treated areas.
 Do not apply more than 6 1/8 lbs./A (6 lbs. ai) per season. This includes the use of ORTHENE in commercial seed treatment, in-furrow spray, in-furrow in the form of PAYLOAD® 15 Granular and foliar applications.

TABLE 5. Cotton - Recommendations for Use

APPLICATION METHOD	PESTS CONTROLLED	RATES OF ORTHENE 97 PELLETS PER ACRE	REMARKS	DAYS TO HARVEST
IN FURROW By Ground: 3 to 5 gals./A of spray.	Aphids* Black (Greasy) Cutworm (Except CA) Thrips (Including Western Flower Thrips)	1/2 to 1.0 lb. (8 to 16 oz.) NOTE: For the Blacklands of Texas use 1.0 lb./A ORTHENE 97 Pellets.	Use flat-fan nozzles for in-furrow application. Align nozzles to ensure good spray deposition into the seed furrow. Cone type nozzles are not recommended since unacceptable spray deposition may occur. Securely fasten spray-system tubing to furrow opener and check frequently to ensure proper positioning and operation. ORTHENE 97 PELLETS can be mixed with fungicides that are sprayed in-furrow for disease control.	
	* Excluding Cotton Aphids in AZ & CA			
FOLIAR By Ground: 10 to 25 gals./A of spray. By Air: 3 to 10 gals./A of spray (minimum of 5 gals./A in AZ & CA).	Thrips (Including Western Flower Thrips)	2.5 oz. to 3.0 oz.	Apply when eggs or insects first appear. Repeat application as necessary to maintain control.	21
	Plantbugs (Lygus)	1/4 to 1.0 lb. (4 to 16 oz.) 3/4 to 1.0 lb. (AZ & CA)	Apply when eggs or insects first appear. Use highest rate for Lygus adults that have migrated into cotton. Repeat application as necessary to maintain control.	21
	Fleahopper	1/4 lb. (4 oz.)	Apply when eggs or insects first appear. Repeat application as necessary to maintain control.	21
	Cotton Aphid (excluding AZ & CA)	1/2 to 1.0 lb. (8 to 16 oz.)	This insect may develop resistance to various classes of insecticides. Consult your local Agricultural Extension Service for current control recommendations. Repeat application as necessary to maintain control.	21

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TABLE 5. Cotton - Recommendations for Use (Continued)

APPLICATION METHOD	PESTS CONTROLLED	RATES OF ORTHENE 97 PELLETS PER ACRE	REMARKS	DAYS TO HARVEST
FOLIAR By Ground: 10 to 25 gals./A of spray. By Air: 3 to 10 gals./A of spray (minimum of 5 gals./A in AZ & CA).	Whitefly (excluding Sweetpotato Whitefly/Silverleaf Whitefly)	1/2 to 1.0 lb. (8 to 16 oz.)	Repeat application as necessary to maintain control.	21
	Armyworms (excluding Beet Armyworm) Cabbage Looper	1.0 lb. (16 oz.)	Apply when eggs appear and repeat at 3 to 7 day spray intervals.	21
	Bollworm Tobacco Budworm Adults Larvae Eggs/(DEADHATCH®)	1/2 to 1.0 lb. (8 to 16 oz.) (East of Rockies) 1.0 lb. (AZ & CA)	Early Season: Use 1/2 lb. /A for light infestation. Mid and Late Season: Use 3/4 to 1.0 lbs. /A for moderate to severe infestations. Apply when eggs* appear and repeat at 3 to 7 day spray intervals. Moths of budworm larvae are controlled by direct contact with spray. Moth kill is most likely to occur when late evening applications are made. DEADHATCH: Control of emerging larvae by consumption of treated egg casings.	21
	Stinkbugs	3/4 lb. (12 oz.)	Apply when eggs appear and repeat at 3 to 7 day spray intervals.	21
	Pink Bollworm (AZ & CA)	1.0 lb. (16 oz.)	Apply when insects appear and repeat at 5 to 7 day spray intervals.	21
	Cutworms	3/4 lb. (12 oz.)	Ground application is recommended. Aerial applications are less effective, but may be used. Control is most effective when ground application is made in the evenings and sprays are directed toward the base and lower portion of plant. Apply when insects first appear or damage is first noted and repeat application as necessary to maintain control.	21

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COTTON TANK MIXES

GENERAL USE PRECAUTIONS:

Do not feed gin trash or treated forage to livestock.
 Do not allow livestock to graze on treated areas.
 Do not apply more than 6 1/8 lbs./A (6 lbs. ai) per season. This includes the use of ORTHENE in commercial seed treatment, in-furrow spray, in-furrow in the form of PAYLOAD 15 Granular and foliar applications.

Always read and follow all label directions when using any pesticide alone or in tank mix combinations. Observe all restrictions and precautions which appear on all product labels. The most restrictive labeling applies when using a tank mix.

TABLE 6. Cotton Tank Mixes - Recommendations for Use

APPLICATION METHOD	PESTS CONTROLLED	ORTHENE 97 PELLETS AND TANK MIX PARTNER	AMOUNT OF ORTHENE 97 PELLETS + TANK MIX PARTNER PER ACRE	REMARKS
FOLIAR By Ground: 10 to 25 gals./A spray. By Air: 3 to 10 gals./A of spray (minimum 5 gals./A in CA).	Sweetpotato Whitefly (Silverleaf Whitefly)	ORTHENE 97 + DANITOL® 2.4 EC	1/2 lb. (8 oz.) + 8 to 16 fl. oz.	User should comply with all applicable directions, restrictions and precautions on the EPA registered label for Danitol 2.4 EC Spray. Use a minimum application rate of 10-2/3 fl. oz./acre DANITOL (0.2 lb. ai./acre) in CA and AZ.
	Armyworms (excluding Beet Armyworm) Bollworm Cabbage Looper Cotton Aphid Cutworms Fleahopper Grasshoppers Pink Bollworm Plantbugs (Lygus, Mirids) Salt Marsh Caterpillar Thrips (Including Western Flower Thrips) Tobacco Budworm Whitefly (Excluding Sweetpotato/Silverleaf Whitefly)	ORTHENE 97 + LORSBAN® 4E	1/4 to 1.0 lb. (4 to 16 oz.) + 1 to 2 pts.	User should comply with all applicable directions, restrictions and precautions on the EPA registered label for LORSBAN 4 E. Cutworms: Use 3/4 lb./A of ORTHENE 97. By Ground: Ground application is recommended. Control is most effective when ground application is made in the evenings and sprays are directed toward the base and lower portion of plant. By Air: Aerial applications are less effective, but may be used. Apply when insects first appear or when damage is first noted and repeat application as necessary to maintain control.

RESISTANCE-MANAGEMENT

Cotton pest control programs, especially those for control of Silverleaf Whitefly populations, should employ a properly designed resistance-management strategy. Such resistance-management strategies include mixture or rotation of alternative classes of chemistry including organophosphates, carbamates, pyrethroids or insect growth regulators. Consult your state or area agricultural extension service for local resistance management strategies and advice on alternative insecticides.

COTTON TANK MIXES WITH PYRETHROIDS

GENERAL USE PRECAUTIONS

Do not feed gin trash or treated forage to livestock.
 Do not allow livestock to graze on treated areas.
 Do not apply more than 6 1/8 lbs./A (6 lbs. ai) per season. This includes the use of ORTHENE in commercial seed treatment, in-furrow spray, in-furrow in the form of PAYLOAD 15 Granular and foliar applications.

Synthetic Pyrethroids should be used within the guidelines of state and/or regional resistance management programs and recommendations.

Always read and follow all label directions when using any pesticide alone or in tank mix combinations. Observe all restrictions and precautions which appear on all product labels. The most restrictive labeling applies when using a tank mix.

TABLE 7. Cotton Tank Mixes with Pyrethroids - Recommendations for Use

APPLICATION METHOD	PESTS CONTROLLED	ORTHENE 97 PELLETS AND TANK MIX PARTNER	AMOUNT OF ORTHENE 97 PELLETS + TANK MIX PARTNER PER ACRE	REMARKS
FOLIAR By Ground: 10 to 25 gals./A spray. By Air: 3 to 5 gals./A spray (minimum 5 gals./A in CA). See aerial remarks for Cutworms.	Aphids Bollworm Cabbage Looper Cotton Leaf Perforator Cutworms Fall Armyworm Fleahoppers Pink Bollworm (AZ & CA) Planthugs Stinkbugs Sweetpotato/Silverleaf Whitefly Thrips (Including Western Flower) Tobacco Budworm Whitefly	ORTHENE 97 + one of the following:	1/2 to 1.0 lb./A (8 to 16 oz.) + one of the following:	Apply when eggs or insects first appear. Repeat application as necessary to maintain control.
		AMBUSH® 2 EC	Refer to the AMBUSH 2 EC approved label for use instructions.	Stinkbugs: Use 3/4 lb./A of ORTHENE 97.
		AMMO® 2.5 EC*	Refer to the AMMO 2.5 EC approved label for use instructions.	*Cutworms: Use 3/4 lb./A of ORTHENE 97.
		ASANA® XL*	Refer to the ASANA XL approved label for use instructions.	By Ground: Ground application is recommended.
		BAYTHROID® 2 EC	Refer to the BAYTHROID 2 EC approved label for use instructions.	Control is most effective when ground application is made in the evenings and sprays are directed toward the base and lower portion of plant.
		CAPTURE® 2 EC	Refer to the CAPTURE 2 EC approved label for use instructions.	By Air: 3 to 10 gals./A spray (minimum 5 gals./A in CA)
		KARATE® 1 E (Except CA)	Refer to the KARATE 1 E approved label for use instructions.	Aerial applications are less effective, but may be used.
		POUNCE® 3-2 EC*	Refer to the POUNCE 3-2 EC approved label for use instructions.	Apply when eggs or insects first appear or damage is first noted.
SCOUT X-TRA® (Except CA)	Refer to the SCOUT X-TRA approved label for use instructions.	Repeat application as necessary to maintain control.		

RESISTANCE-MANAGEMENT

Cotton pest control programs, especially those for control of Silverleaf Whitefly populations, should employ a properly designed resistance-management strategy. Such resistance-management strategies include mixture or rotation of alternative classes of chemistry including organophosphates, carbamates, pyrethroids or insect growth regulators. Consult your state or area agricultural extension service for local resistance management strategies and advice on alternative insecticides.

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CRANBERRY

TABLE 8. Cranberry - Recommendations for Use

APPLICATION METHOD	PESTS CONTROLLED	RATE OF ORTHENE 97 PELLETS PER ACRE	REMARKS	DAYS TO HARVEST
<p>FOLIAR</p> <p>By Ground or Sprinkler: Sufficient water to give thorough coverage.</p> <p>By Air: Minimum of 2 gals./A of spray.</p> <p>USE PRECAUTION: Note: Limit to one application per growing season. Do not apply more than 1.0 lb. (1.0 lb. ai) per season. Do not apply from start of bloom until all berries set.</p>	<p>Cranberry Blossom Worm Cranberry Cutworm Gypsy Moth False Armyworm Fireworms Spanworms Sparganothis</p>	<p>1.0 lb. (16 oz.)</p>	<p>SPRINKLER IRRIGATION APPLICATION TO CRANBERRIES:</p> <p>This product may only be applied through sprinkler irrigation systems including center pivot, lateral move, end tow, side (wheel) roll, travelers, big gun, solid set, or hand move. Do not apply this product through any other type of irrigation system.</p> <p>Crop injury, lack of effectiveness, or illegal pesticide residues in the crop may result from non-uniform distribution of treated water.</p> <p>If you have questions about calibration, you should contact State Extension Service specialists, equipment manufacturers or other experts.</p>	<p>90</p>
<p>Do not connect an irrigation system (including greenhouse systems) used for pesticide application to a public water system unless the label-prescribed safety devices for public water systems are in place.</p> <p>A person knowledgeable of the chemigation system and responsible for its operation, or under the supervision of the responsible person, shall shut the system down and make necessary adjustments should the need arise.</p> <p>The system must contain a functional check valve, vacuum relief valve, and low pressure drain appropriately located on the irrigation pipeline to prevent water source contamination from backflow.</p> <p>The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.</p> <p>The pesticide injection pipeline must also contain a functional, normally closed solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.</p> <p>The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops.</p> <p>The irrigation line of water pump must include a functional pressure switch which will stop the water pump motor when the water pressure decreases to the point where pesticide distribution is adversely affected.</p> <p>Systems must use a metering pump, such as a positive displacement injection pump (e.g., diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.</p> <p>Do not apply when wind speed favors drift beyond the area intended for treatment.</p> <p>Solid Set System: Apply specified dosage for the entire length of the irrigation period or for a 30 to 60 minute period at the end of a regular irrigation set or as a 30 to 60 minute injection as a separate application not associated with a regular irrigation. Allow time for all lines to flush the pesticide through all nozzles before turning off irrigation water. To ensure the lines are flushed and free of remaining pesticide, a dye indicator may be injected into the lines to mark the end of the application period. See NOTE.</p> <p>Center Pivot Systems: Inject the specified dosage per acre continuously for one complete revolution of the system. See NOTE.</p> <p>NOTE: Constant agitation must be maintained in the chemical supply tank during the entire period of insecticide application. Inject the product with a positive displacement pump into the main line ahead of a right turn to ensure adequate mixing.</p> <p>Application of more than label-recommended quantities of irrigation water per acre may result in decreased product performance by removing the chemical from the zone of effectiveness.</p>				

16/35

HEAD LETTUCE - Crisphead Type Only

TABLE 9. Head Lettuce (Crisphead Type Only) - Recommendations for Use

APPLICATION METHOD	PESTS CONTROLLED	RATES OF ORTHENE 97 PELLETS PER ACRE	REMARKS	DAYS TO HARVEST
FOLIAR By Ground: 10 to 60 gals./A of spray broadcast. By Air: Minimum of 5 gals./A of spray.	Aster Leafhopper Green Peach Aphid	1/2 to 1.0 lb. (8 to 16 oz.)	Repeat application as necessary to maintain control.	21 Spring, Summer and early Fall crops in all areas. Winter crops in Florida and Texas, late Fall crops in Arizona and Winter crops in Arizona and California.
	Armyworms (excluding Beet Armyworm) Cabbage Looper	1.0 lb. (16 oz.)		
USE PRECAUTIONS: Do not apply more than 2-1/8 lbs./A (2 lbs. ai) per season. Do not feed trimmings to livestock or allow animals to graze on treated areas. AZ & CA, Desert Areas: Do not apply after first head begins to form in crops which germinate from mid-September through November.				

17/35

MINT

PEPPERMINT AND SPEARMINT

TABLE 10. Mint - Peppermint and Spearmint - Recommendations for Use

APPLICATION METHOD	PESTS CONTROLLED	RATES OF ORTHENE 97 PELLETS PER ACRE	REMARKS	DAYS TO HARVEST
<p>FOLIAR</p> <p>By Ground: 20 to 100 gals./A of spray.</p> <p>By Air: 5 to 10 gals./A of spray.</p>	<p>Alfalfa Looper</p> <p>Aphids</p> <p>Cutworms</p>	<p>1.0 lb. (16 oz.)</p>	<p>Apply when eggs or insects first appear.</p> <p>Make one repeat application, if necessary, to maintain control.</p>	<p>14</p>
<p>FOLIAR</p> <p>By Ground: 40 to 100 gals./A of spray.</p>	<p>Strawberry Root Weevil Adult</p> <p>Black Vine Weevil Adult</p>	<p>1.0 lb. (16 oz.)</p>	<p>Strawberry Root and Black Vine Weevil:</p> <p>For control, apply in water in a minimum of 40 gals. spray per acre by ground. Good spray coverage and canopy spray penetration is critical for control. Increase spray volume and pressure with tall or dense mint canopy.</p> <p>Apply after adult emergence is complete but prior to egg laying. Apply at dusk or during the night on a warm still evening. Two applications 10 to 14 days apart may be necessary to reduce heavy infestations.</p>	<p>14</p>
<p>USE PRECAUTIONS FOR ALL APPLICATION METHODS: Do not apply more than 2-1/8 lbs./A (2 lbs. ai) per season. Do not graze treated areas.</p>				

18/35

**NON-BEARING CITRUS - RECOMMENDATIONS FOR USE IN AGRICULTURAL SETTINGS
(Newly Planted Groves)**

GENERAL USE PRECAUTIONS

Do not graze treated areas.
DO NOT HARVEST citrus for one year after treatment.

TABLE 11. Non-Bearing Citrus - Recommendations for Use

APPLICATION METHOD	PESTS CONTROLLED	RATE OF ORTHENE 97 PELLETS PER ACRE	REMARKS
FOLIAR By Ground: 100 to 200 gals./A of spray.	Aphids Grasshoppers Katydid Mealybugs Orangedogs Plantbugs Thrips Whiteflies (except Sweetpotato/Silverleaf)	1/2 lb. (8 oz.)	Repeat application as necessary to maintain control.
	Citrus Blackfly	1/2 to 3/4 lb. (8 to 12 oz.)	Apply when eggs or insects first appear. Use the high rate when a heavy infestation is present. Repeat at 7 to 10 day spray intervals.
	Ants (Including Imported Fire Ants and Harvester Ants)	3/4 lb. (12 oz.)	Repeat application as necessary to maintain control.
Spray individual juvenile or non-bearing trees for coverage with total application not to exceed specified rate in lbs. per acre. Length of residual activity will depend upon spray coverage and the amount of moisture following application.			
SOIL MOUND TREATMENT DRENCH METHOD	Ants (Including Imported Fire Ants and Harvester Ants)	3/4 oz./5 gals.	Apply 1 gal. of mix to each mound area by sprinkling the mound until it is wet and treat a four (4) foot diameter circle around the mound. Repeat application as necessary to maintain control.

19/35

NON-CROP AREAS

FIELD BORDERS, FENCEROWS, ROADSIDES, DITCHBANKS, BORROW PITS

TABLE 12. Non-Crop Areas - Field borders, Fencerows, Roadsides, Ditchbanks, Borrow Pits - Recommendations for Use

APPLICATION METHOD	PESTS CONTROLLED	RATES OF ORTHENE 97 PELLETS PER ACRE	REMARKS
FOLIAR By Ground: 10 to 20 gals./A of spray. By Air: 1 to 5 gals./A of spray (minimum of 5 gals./A in CA).	Grasshoppers	1/4 lb. (4 oz.)	For early to mid-season application. Use the higher volumes when spraying dense foliage. An approved drift retardant may be added to aid in controlling drift and reducing evaporation of aerial sprays.
USE PRECAUTION: Do not graze or feed vegetation cut from treated areas.			

WASTELAND

TABLE 13. Non-Crop Areas - Wasteland - Recommendations for Use

APPLICATION METHOD	PESTS CONTROLLED	RATES OF ORTHENE 97 PELLETS PER ACRE	REMARKS
FOLIAR By Ground: 10 to 20 gals./A of spray. By Air: 1/2 gal./A of spray (minimum of 5 gals./A in CA).	Black Grass Bugs Grasshoppers Mormon Crickets	1.5 oz. to 2 oz.	Use the higher volumes when spraying dense foliage. An approved drift retardant may be added to aid in controlling drift and reducing evaporation of aerial sprays.
USE PRECAUTIONS: Do not make more than one application per season. Do not graze or feed vegetation cut from treated areas.			

20/35

PEANUTS

TABLE 14. Peanuts - Recommendations for Use

APPLICATION METHOD	PESTS CONTROLLED	RATES OF ORTHENE 97 PELLETS PER ACRE	REMARKS	DAYS TO HARVEST
FOLIAR By Ground: 10 to 50 gals./A of spray. By Air: 5 to 10 gals./A of spray.	Grasshoppers	1/4 to 1/2 lb. (4 to 8 oz.)	Apply when eggs or insects first appear. Repeat application as necessary to maintain control. ORTHENE can be tank mixed with registered at-cracking and early post-emergence peanut herbicides, provided those products do not prohibit tank mixes, provided the most restrictive of label limitations and precautions are observed, and provided no label dosage rates are exceeded.	14 (of digging)
	Thrips	3/8 to 3/4 lb. (6 to 12 oz.)	To determine physical compatibility, pour the recommended proportions of each chemical with the same proportion of water as will be present in the chemical supply tank into a suitable container, mix thoroughly and allow to stand for five minutes. If the combination remains mixed, or can be remixed readily, the mixture is considered physically compatible. When mixing wettable powder or dry flowable formulations, add and disperse these first, then add liquid pesticides. Conduct another compatibility test at concentrations which will be present in the irrigation lines. If there is any separation which cannot be remixed readily, VALENT recommends that the combination not be used.	
	Corn Earworm Fall Armyworm Leafhoppers Loopers Velvetbean Caterpillar	3/4 to 1.0 lb. (12 to 16 oz.)	Combinations should be kept agitated and should be applied immediately. Do not allow combinations to set for prolonged periods in the chemical supply tank or irrigation lines.	
USE PRECAUTIONS: Do not feed treated forage or hay to livestock. Do not allow animals to graze on treated areas. Do not apply more than 4 1/8 lbs./A (4 lbs. ai) per season.				

21/35

PEPPERS

BELL

TABLE 15. Peppers - Bell - Recommendations for Use

APPLICATION METHOD	PESTS CONTROLLED	RATES OF ORTHENE 97 PELLETS PER ACRE	REMARKS	DAYS TO HARVEST
FOLIAR By Ground: 25 to 150 gals./A of spray. By Air: Minimum of 3 gals./A of spray (minimum of 5 gals./A in CA).	Grasshoppers	1/4 to 1/2 lb. (4 to 8 oz.)	Apply when eggs or insects first appear.	7
	Cabbage Looper Green Peach Aphid Tobacco Hornworm	1/2 to 1.0 lb. (8 to 16 oz.)	Repeat as necessary to maintain insect-pest populations below economically damaging numbers.	
	European Corn Borer	3/4 to 1.0 lb. (12 to 16 oz.)		
USE PRECAUTION: Do not apply more than 2-1/8 lbs./A (2 lbs. ai) per season.				

NON-BELL

FOR USE IN MIDWESTERN, EASTERN STATES AND PUERTO RICO ONLY.

TABLE 16. Peppers - Non-Bell - Recommendations for Use

APPLICATION METHOD	PESTS CONTROLLED	RATE OF ORTHENE 97 PELLETS PER ACRE	REMARKS	DAYS TO HARVEST
FOLIAR By Ground: 40 to 150 gals./A of spray.	Aphids	1/2 lb. (8 oz.)	Repeat at 7 to 10 day spray intervals as necessary.	7
USE PRECAUTION: Do not apply more than 1.0 lb./A (1.0 lb. ai) per season.				

22/35

TOBACCO

TOBACCO TRANSPLANT WATER APPLICATION (EXCEPT CA)

TABLE 17. Tobacco Transplant Water Application - Recommendations for Use

CROP	INSECTS	AMOUNT ORTHENE 97 PELLETS PER ACRE	FURTHER USE INSTRUCTIONS
Tobacco	Cutworms Flea Beetle Green Peach Aphid Potato Tubenworm Tobacco Aphid Tobacco Thrips	3/4 lb. (12 oz.)	<p>Provides control of early season flea beetles, green peach aphids, tobacco aphids, and cutworms for approximately 3 to 4 weeks after transplanting. For later season control of these insects, apply a foliar spray of ORTHENE 97 Pellets.</p> <p>Apply in a minimum of 100 gals. of transplant water per acre. ORTHENE 97 Pellets should be pre-mixed in water to form a slurry solution prior to adding to the transplant water tank.</p> <p>Do not apply more than 3/4 lb. ORTHENE 97 Pellets per acre as a transplant water application as some phytotoxicity may occur.</p> <p>Do not apply more than 4-1/8 lbs./A (4 lbs. ai) per season. This includes the use of ORTHENE in transplant water, plant bed, soil, float bed (greenhouse), and foliar applications.</p>

TOBACCO FOLIAR APPLICATION (EXCEPT CA)

TABLE 18. Tobacco Foliar Application - Recommendations for Use

CROP	INSECTS	AMOUNT ORTHENE 97 PELLETS PER ACRE	FURTHER USE INSTRUCTIONS	DAYS TO HARVEST
Tobacco (Flue-Cured, Air Cured, Dark Fire Cured)	Grasshoppers	1/4 to 1/2 lb. (4 to 8 oz.)	Apply in 10 to 50 gals. water per acre with ground equipment or a minimum of 3 gals. per acre by air.	3
	Green Peach Aphid Flea Beetle Hornworm Tobacco Thrips	1/2 lb. (8 oz.)	Apply on a 7 day schedule or as needed.	
	Stinkbugs Tobacco Aphid Vegetable Weevils	1/2 to 3/4 lb. (8 to 12 oz.)	Do not apply more than 4-1/8 lbs./A (4 lbs. ai) per season. This includes the use of ORTHENE in transplant water, plant bed, soil, float bed (greenhouse), and foliar applications.	
	Budworm Cabbage Looper Cutworm Japanese Beetle	3/4 lb. (12 oz.)		

23/35

TOBACCO PLANT BED APPLICATION (EXCEPT CA)

TABLE 19. Tobacco Plant Bed Application - Recommendations for Use

CROP	INSECTS	AMOUNT ORTHENE 97 PELLETS PER ACRE	FURTHER USE INSTRUCTIONS
Tobacco Bed Treatment	Cutworm Flea Beetle Green Peach Aphid Tobacco Aphid	3/4 lb. (12 oz.)	Apply to foliage at the equivalent of 3/4 tbsp. in 1 gal. of water per every 1,000 sq. ft. of bed. Apply evenly to insure thorough coverage. Do not apply more than 4-1/8 lbs./A (4 lbs. ai) per season. This includes the use of ORTHENE in transplant water, plant bed, soil, float bed (greenhouse), and foliar applications.

TOBACCO GREENHOUSE APPLICATION (EXCEPT CA)

TABLE 20. Tobacco Greenhouse Application - Recommendations for Use

CROP	INSECTS	AMOUNT ORTHENE 97 PELLETS PER ACRE	FURTHER USE INSTRUCTIONS
Tobacco	Cutworm Flea Beetle Green Peach Aphid Tobacco Aphid	3/4 lb. (12 oz.)	Apply to foliage at the equivalent of 3/4 tbsp. in 3 gals. water per every 1,000 sq. ft. of bed. Apply evenly to insure thorough coverage. Note: Floatbed water should be disposed of in the transplanted field in either transplant water or foliar spray. Do not apply more than 4-1/8 lbs./A (4 lbs. ai) per season. This includes the use of ORTHENE in transplant water, plant bed, soil, float bed (greenhouse), and foliar applications.

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TOBACCO SOIL APPLICATION (EXCEPT CA)

TABLE 21. Tobacco Soil Application - Recommendations for Use

CROP	INSECTS	AMOUNT ORTHENE 97 PELLETS	FURTHER USE INSTRUCTIONS	DAYS TO HARVEST
Tobacco	Ants (Including Imported Fire Ants and Harvester Ants)	Mound Treatment-Drench Method: Mix 3/4 oz. in 5 gals. of water. Apply 1 gal. of mix to each mound area by sprinkling the mound until it is wet and treat a four (4) foot diameter circle around the mound.	For best results apply the material in the early morning or late afternoon when the ants are most active. Applications made under prolonged hot and dry conditions may be ineffective due to the location of the ants deep within the nest. Treat maximum of 13 mounds per acre. Do not treat more than once per season. Do not apply more than 4-1/8 lbs./A (4 lbs. ai) per season. This includes the use of ORTHENE in transplant water, plant bed, soil, float bed (greenhouse), and foliar applications.	3

SMALL VOLUME SPRAY EQUIPMENT

Preparation of ORTHENE Spray Mix Using a Small Fluid Ounce Measuring Cup		
LABEL RECOMMENDATION ORTHENE 97 PELLETS IN 100 GALS. OF WATER	EQUIVALENT ORTHENE 97 PELLETS IN 25 GALS. OF WATER	EQUIVALENT ORTHENE 97 PELLETS IN 1 GALS. OF WATER (TSP/GAL.)
1/4 lb. 1/2 lb. 3/4 lb. 1 lb.	1 oz. 2 oz. 3 oz. 4 oz.	1/3 tsp. 2/3 tsp. 1 tsp. 1-1/3 tsp.

25/35

**NON-BEARING CITRUS
DO NOT ALLOW LIVESTOCK TO GRAZE TREATED AREAS.**

PLANTS	INSECTS	AMOUNT ORTHENE 97 PELLETS PER ACRE	TIME OF APPLICATION	RECOMMENDED APPLICATION
Non-bearing Citrus (including citrus nursery seedlings)	Aphids Grasshoppers Katydid Mealybugs Orangedogs Plant Bugs (Lygus) Thrips Whiteflies	1/2 lb. (8 oz.)	Apply as needed for control of existing populations.	Apply ORTHENE 97 Pellets in 100 to 200 gals. of water per acre. Spray individual juvenile or non-bearing trees for coverage with total application not to exceed specified rate in lbs. per acre. Length of residual activity will depend upon spray coverage and the amount of moisture following application. Do not allow livestock to graze treated areas.
	Citrus Blackfly	1/2 to 3/4 lb. (8 to 12 oz.)	The high rate should be used when a heavy infestation of Citrus Blackfly is present. Begin applications when eggs or adults first appear. Apply on a 7 to 10 day interval or as needed to maintain control	DO NOT HARVEST citrus for one year after treatment.
Non-bearing Citrus (including citrus nursery seedlings)	Ants (Including Imported Fire Ants and Harvester Ants)	Foliar Spray 3/4 lb. (12 oz.)	Apply as needed for control of existing populations.	Apply ORTHENE 97 Pellets in 100 to 200 gals. of water per acre. Spray individual juvenile or non-bearing trees for coverage with total application not to exceed specified rate in lbs. per acre. Length of residual activity will depend upon spray coverage and the amount of moisture following application. Do not allow livestock to graze treated areas. DO NOT HARVEST citrus for one year after treatment.
		Mound Treatment - Drench Method: Mix 3/4 oz. in 5 gals. of water. Apply 1 gal. of mix to each mound area by sprinkling the mound until it is wet and treat a four (4) foot diameter circle around the mound.		

26/35

**NURSERY STOCK
NON-BEARING DECIDUOUS FRUIT TREES, NUT TREES AND VINES
IN NURSERY FIELDS OR NON-BEARING ORCHARDS
DO NOT ALLOW LIVESTOCK TO GRAZE TREATED AREAS.**

PLANTS	INSECTS	AMOUNT OF ORTHENE 97 PELLETS PER ACRE	TIME OF APPLICATION	RECOMMENDED APPLICATION
Nursery Stock (Non-bearing Deciduous Fruit Trees, Nut Trees, Vines) Almond Apricot Apple Cherry Grape Kiwi Pear Pistachio Plum Prune Walnut	Aphids Plant Bugs (Lygus) Thrips	1/2 to 1 lb. (8 to 16 oz.)	Apply as needed for control of existing populations.	Apply ORTHENE 97 Pellets in 50 to 200 gals. of water per acre by ground and not less than 5 gals. of water per acre by air.

USE PRECAUTIONS: For application only to non-bearing trees and vines in nursery fields or in non-bearing orchards. Do not apply to interplants or single trees in a bearing orchard. Do not harvest any fruit from sprayed trees for one-year after application.

SPECIALTY USES - NON CROP AREAS

CROP	INSECTS	AMOUNT ORTHENE 97 PELLETS PER ACRE	FURTHER USE INSTRUCTIONS
Non-Crop Areas (field borders, fencerows, roadsides, ditchbanks and borrow pits)	Grasshoppers	1/4 lb. (4 oz.)	For early to mid-season application to grasshoppers in field borders, fencerows, roadsides, ditchbanks, and borrow pits. Apply in 1 to 5 gals. of water by air, or in 10 to 20 gals. of water with ground equipment. Use the higher volumes when spraying heavier foliage. Do not graze or feed vegetation cut from treated areas.
Non-Crop Areas	Ants (Including Imported Fire Ants and Harvester Ants)	Mound Treatment - Drench Method: Mix 3/4 oz. in 5 gals. of water. Apply 1 gal. of mix to each mound area by sprinkling the mound until it is wet and treat a four (4) foot diameter circle around the mound.	For best results apply the material in the early morning or late afternoon when the ants are most active. Applications made under prolonged hot and dry conditions may be ineffective due to the location of the ants deep within the nest. Grass in treated area may be injured. Do not treat mound more than once per season.

27/35

SPECIALTY USES - CONTAINER GROWN NURSERY STOCK

PLANTS	INSECTS	AMOUNT ORTHENE 97 PELLETS PER 100 GALS.	TIME OF APPLICATION	RECOMMENDED APPLICATION
Container Grown Nursery Stock (Arborvitae Azalea Camellia Rhododendron Roses Viburnum Yew)	Black Vine Weevil Strawberry Root Weevil	3/4 lb. (12 oz.)	Application should be made by mid-September for greenhouse stock and by mid-October for outdoor stock. Consult your local county extension agent for information on the identification and control of root weevils on ornamentals.	Apply the specified amount of ORTHENE 97 Pellets per 100 gals. of solution so as to thoroughly drench the root system.
	Ants (Including Imported Fire Ants and Harvester Ants)	3/4 lb. (12 oz.)	Apply as needed to control the pest.	

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TREES AND SHRUBS

PLANTS	INSECTS	AMOUNT ORTHENE 97 PELLETS PER 100 GALS.	TIME OF APPLICATION	RECOMMENDED APPLICATION
Trees and Shrubs (Except Flowering Crabapple, see below)	Aphids Bagworms Birch Leafminer Lace Bugs Leafrollers Tent Caterpillars*	1/4 lb. (4 oz.)	As the insects begin to appear.	Apply the specified amount of ORTHENE 97 Pellets in 100 gals. water with a hydraulic sprayer. The addition of a suitable sticker improves control of Gypsy Moth larvae. *Mist blower application. Adjust rates to 1 lb. per 100 gals. water for Gypsy Moth control and 3/4 lb. per 100 gals. water for Tent Caterpillar control.
	Douglas Fir Tussock Moth Larvae Gypsy Moth Larvae* Webworms	1/2 lb. (8 oz.)	As the insects begin to appear.	Do not apply to Huckleberry, Balm of Gilead, Cottonwood, Lombardy Poplar and Viburnum suspensum.
	Scales (Crawlers)	1/2 lb. (8 oz.)	As crawlers begin to appear. Repeat applications, at a 2 week or more interval, may be necessary where there is continuous crawler production.	Nursery crops. Before treating large plantings, spray only a few plants and observe two weeks for phytotoxicity.
	Ponderosa Pine Needle Miner	1/2 lb. (8 oz.)	Time of application is important. Consult your Farm Advisor or County Extension Agent.	Apply the specified amount of ORTHENE 97 Pellets in 100 gals. water with a hydraulic sprayer as a full coverage spray.
	Grasshoppers	1/2 lb. (8 oz.)	As the grasshoppers begin to appear.	
	California Oakworm Cankerworms (Spring and Fall)	1/4 to 1/2 lb. (4 to 8 oz.)	As the insects begin to appear. Use the higher amount when the larger larvae are present.	Apply the specified amount of ORTHENE 97 Pellets in 100 gals. water with a hydraulic sprayer.
	Nantucket Pine Tip Moth Larvae	3/4 lb. (12 oz.)	Time of application is important. Consult your Farm Advisor or County Extension Agent. Repeat applications will be required for subsequent generations.	
	Root Weevil Adults	3/4 lb. (12 oz.)	Apply when first feeding damage occurs. Repeat applications, at four week intervals until the first heavy frost, may be necessary for complete foliage protection.	Apply the specified amount of ORTHENE 97 Pellets in 100 gals. water with a hydraulic sprayer as a full coverage spray.
	Box Elder Bugs Budworms Leafhoppers Sawflies	3/4 lb. (12 oz.)	As the insects begin to appear.	
Japanese Beetle	1 lb. (16 oz.)	As the Japanese Beetles begin to appear. Repeat applications, at 2 week intervals, may be necessary.		

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TREES AND SHRUBS (Continued)

PLANTS	INSECTS	AMOUNT ORTHENE 97 PELLETS PER 100 GALS.	TIME OF APPLICATION	RECOMMENDED APPLICATION
Trees and Shrubs (Except Flowering Crabapple, see below)	Elm Leaf Beetle (larvae)	1 lb. (16 oz.)	As the larvae begin to appear. ORTHENE will not prevent Elm Leaf Beetle eggs from hatching.	Apply the specified amount of ORTHENE 97 Pellets in 100 gals. water with a hydraulic sprayer as a full coverage spray.
Douglas Fir (Christmas Trees)	Douglas Fir Needle Midge	1/2 lb. (8 oz.) (1/2 lb. per acre)	Application should be made no more than 2 weeks prior to bud burst. For additional pest management information, consult your County Extension Service.	Apply the specified amount of ORTHENE 97 Pellets in not less than 2 gals. of spray per acre by air or in 100 gals. of spray per acre by ground.
Flowering Crabapples	Aphids Leafrollers Tent Caterpillars	1/4 lb. (4 oz.)	As the insects begin to appear.	Apply the specified amount of ORTHENE 97 Pellets in 100 gals. water with a hydraulic sprayer. Do not apply more often than 3 times in a growing season at a 4 week interval. Caution: Phytotoxicity has occurred on the following Crabapple varieties: Hopa, Ichonoski, Malusfloribunda, Pink Perfection, Red Wine and Snow Cloud.
Crape Myrtle	Aphids	2 to 3 Level Tbsp. (0.6 to 0.9 oz.) per 1 Tbsp. of water.	As aphids begin to appear.	Make a paint-on slurry by mixing the specified amount of ORTHENE 97 Pellets with 1 tbsp. of water. Remove the loose bark from the trunk areas to be treated. Completely paint a band around each trunk to a width twice its diameter. Application should be made to trunks within a zone 6 to 12 inches above the ground and below the point where branching begins. For multi-trunk plants be certain to treat all trunks. For either single or multi-trunk plants, application should be made as low as possible within the recommended treatment zone.

30/35

**COMMERCIAL TURFGRASS, LAWNS, AND OTHER RECREATIONAL TURFGRASS AREAS
DO NOT ALLOW LIVESTOCK TO GRAZE TREATED AREAS. DO NOT FEED TREATED GRASS TO LIVESTOCK.**

PLANT	INSECTS	AMOUNT ORTHENE 97 PELLETS PER 1000 SQ. FT.	TIME OF APPLICATION	RECOMMENDED APPLICATION
Turfgrass (Residential & Commercial)	Fall Armyworm Yellow Striped Armyworm Southern Armyworm	0.4 to 0.9 oz. (1 to 2-1/2 lbs. per acre)	As the insects appear. A repeat application at 2 week intervals may be necessary.	Apply the specified amount of ORTHENE 97 Pellets per 1,000 sq. ft. Use a minimum of 5 gals. water per 1,000 sq. ft. to obtain good coverage.
	Cutworm	0.9 to 1.8 oz. (2-1/2 to 5 lbs. per acre)		
	Chinch Bugs	0.9 to 1.8 oz. (2-1/2 to 5 lbs. per acre)	Apply as needed for adult population knockdown (10 to 14 days).	Apply the specified amount of ORTHENE 97 Pellets per 1,000 sq. ft. Use 1 to 15 gals. water per 1,000 sq. ft. to obtain good coverage.
	Fleas	0.9 to 1.8 oz. (2-1/2 to 5 lbs. per acre)	Apply as needed for knockdown (7 to 10 days) only of existing adult populations.	
	Sod Webworm (Crambus spp.)	0.4 to 0.8 oz. (1 to 2 lbs. per acre)	As sod webworms begin to appear. Use the higher amount when quick knockdown is needed or with heavy infestations. Repeat application may be necessary. Do not repeat at more than 1 week intervals.	
	Leafhopper	3/4 oz. (2 lbs. per acre)	As the leafhoppers begin to appear. A repeat application at 1 week intervals may be necessary.	

COMMERCIAL TURFGRASS, LAWNS, AND OTHER RECREATIONAL TURFGRASS AREAS (Cont.)
DO NOT ALLOW LIVESTOCK TO GRAZE TREATED AREAS. DO NOT FEED TREATED GRASS TO LIVESTOCK.

PLANT	INSECTS	AMOUNT ORTHENE 97 PELLETS PER 1000 SQ. FT.	TIME OF APPLICATION	RECOMMENDED APPLICATION
Turfgrass (Residential & Commercial)	Mole Crickets (Except CA) Spittlebug (Except CA)	0.8 to 1.4 oz. (2 to 3.9 lbs. per acre)	As mole crickets begin to appear. For knockdown of existing populations, more than one application may be required throughout the growing season. For heavy infestations, use the higher dosage rate.	Apply the specified amount of ORTHENE 97 Pellets per 1,000 sq. ft. Use 1 to 15 gals. water per 1,000 sq. ft. to obtain good coverage. Apply during late afternoon or early evening hours and after an irrigation. Do not irrigate after application. The use of a lemon fragrance substance in the spray mix may enhance control by acting as a flushing agent and thus provide increased mole cricket contact with the ORTHENE 97 Pellets. The following lemon-scented products have been shown to be effective flushing agents: Lemon Joy, Lemon Palmolive, and Mighty Myrt Products Manufacture- Base Pure Lemon Fragrance. The use rate for these lemon-scented products is 2 tsp. per gallon of water for small total mix volumes or 6 fl. oz. per 50 gals. of water for large total mix volumes.
	Greenbug (Schizaphis graminum) Grasshoppers	0.4 oz. (1.0 lb. per acre)	Apply when insects or their damage first appears. Repeat as necessary. Application is not to be repeated at more than 1 week intervals.	Apply the specified amount of ORTHENE 97 Pellets. Use 4 gals. of water per 1,000 sq. ft. to obtain good coverage. Do not mow turfgrass for at least 24 hours after application.
	Black Turfgrass Ataenius (Except CA)	0.9 to 1.4 oz. (3.1 to 3.9 lbs. per acre)	Apply when insects or their damage first appear.	Apply the specified Amount of ORTHENE 97 Pellets per 1,000 sq. ft. Use a minimum of 5 gallons water per 1000 sq. ft. Irrigate lightly after application (not more than 1/2 inch). Use the higher rate for severe infestations.
Dichondra	Cutworm Flea Beetle Armyworm Southern Yellow Striped	0.8 to 1.4 oz. (2 to 3.9 lbs. per acre)	As the insects appear. Repeat at 2 week intervals as necessary.	Apply the specified amount of ORTHENE 97 Pellets per 1,000 sq. ft. Use a minimum of 15 gals. of water per 1,000 sq. ft. to obtain good coverage.

MOUND TREATMENT OF FIRE ANTS IN TURFGRASS
 DO NOT ALLOW LIVESTOCK TO GRAZE TREATED AREAS. DO NOT FEED TREATED GRASS TO LIVESTOCK.

PLANT	INSECTS	AMOUNT ORTHENE 97 PELLETS	TIME OF APPLICATION	RECOMMENDED APPLICATION
Turfgrass	Ants (Including Imported Fire Ants and Harvester Ants)	Mound Treatment-Drench Method: Mix 3/4 oz. in 5 gals. of water. Apply 1 gal. of mix to each mound area by sprinkling the mound until it is wet and treat a four (4) foot diameter circle around the mound	For best results apply the material in the early morning or late afternoon when the ants are most active. Applications made under prolonged hot and dry conditions may be ineffective due to the location of the ants deep within the nest.	Apply the specified amount of ORTHENE 97 Pellets as directed. Grass in treated areas may be injured. Do not treat mound more than once per season.

OUTDOOR AND PERIMETER SPRAY

LOCATION	INSECTS	AMOUNT ORTHENE 97 PELLETS PER GALLON	TIME OF APPLICATION	RECOMMENDED APPLICATION
Outdoor and Perimeter Area.	Wasps	1.2 oz.	Treat early or late in the day, as wasps are generally less active during these times.	Apply specified amount of ORTHENE 97 Pellets per each gallon of water used. Apply as a spot treatment to the nest, nest entrance, and surrounding areas where the wasps alight.
	Ants (Including Imported Fire Ants and Harvester Ants) Crickets Cockroaches Earwigs Pillbugs	1.2 oz.	As the insects appear.	Apply specified amount of ORTHENE 97 Pellets per each gallon of water used. Apply to a band of soil 6 to 10 feet adjacent to the structure and to a height of 2 to 3 feet on the foundation where pests may be active or may find entrance. Also apply as a residual spray or with a paint brush to surfaces of buildings, window frames, shutters, entryways, screens, eaves, patios, garages, carports, around garage areas and other areas where these pests congregate.

OUTDOOR FLORAL CROPS AND GROUND COVERS

PLANTS	INSECTS	AMOUNT ORTHENE 97 PELLETS PER 100 GALS.	TIME OF APPLICATION	RECOMMENDED APPLICATION
Chrysanthemums Dahlias Daisies Easter Lily Gladioli Gypsophila Pachysandra Pansy Peony Roses Sedum Statice Strawflower Yarrow Zinnia	Aphids Thrips Lygus	1/2 lb. (8 oz.)	As insects begin to appear. Repeat applications may be necessary.	Apply the specified amount of ORTHENE 97 Pellets in 100 gals. water with a hydraulic sprayer as a full coverage spray. Multiple applications may cause slight tip burn or marginal leaf necrosis on some varieties. Test on a few plants to determine varietal susceptibility.
Boston Ivy Roses	Japanese Beetle	1 lb. (16 oz.)	As the Japanese Beetles begin to appear. Repeat applications at 2 week intervals may be necessary.	

GREENHOUSE FLORAL AND FOLIAGE PLANT CROPS

PLANT	INSECTS	AMOUNT ORTHENE 97 PELLETS PER 100 GALS.	TIME OF APPLICATION	RECOMMENDED APPLICATION
Rosas	Leafrollers	1/2 to 3/4 lb. (8 to 12 oz.)	As leafrollers begin to appear. Use the higher amount when the large larvae are present.	Apply the specified amount of ORTHENE 97 Pellets in 100 gals. water with a hydraulic sprayer as a full coverage spray.
Foliage Plants Anthurums Cacti Orchids Poinsetia	Aphids	1/2 lb. (8 oz.)	As aphids begin to appear.	Apply the specified amount of ORTHENE 97 Pellets in 100 gals. water with a hydraulic sprayer as a full coverage spray. The addition of a wetting agent may be required on difficult to wet foliage.
	Mealybugs Thrips Whiteflies	1/2 lb. (8 oz.)	As the insects begin to appear. A repeat application, at a 2 week interval, may be necessary for control of mealybugs and whiteflies.	Caution: Phytotoxicity has occurred on the following foliage plants: Bletchum gibbum, Cissus antarctica, Ficus triangularis, Fittonia verschaffeltii, Maranta leuconeura kerchoviana, Pachystachya lutea, Plectranthus australis, Polypodium aureum, Polystichum, Pteris ensiformis, Tolmiea menziesii. Before treating large plantings spray only a few plants and observe two weeks for varietal phytotoxicity. Application of ORTHENE 97 Pellets on Poinsettias after bract formation may result in phytotoxicity on certain varieties.
	Scales (Crawlers)	1/2 lb. (8 oz.)	As crawlers begin to appear. Repeat applications, at a 2 week or more interval, may be necessary where there is continuous crawler production.	
	Sweet Potato Whiteflies (Except CA)	1/4 lb. (4 oz.) plus TAME® 2.4 EC Spray 10-2/3 fl. oz. (0.2 lb. ai)	Apply when insects first appear. If a population is well established, make one application of the tank mix and follow 5 to 7 days later with TAME alone at 16 fl. oz./100 gals. See TAME label for instructions.	For sweet potato whitefly control, apply the specified amount of ORTHENE 97 Pellets plus TAME 2.4 EC Spray as a tank mix at a volume necessary to obtain good coverage. Follow the TAME label for specific instructions on the alternation of TAME plus ORTHENE and TAME alone and the rotation instructions to avoid potential resistance.
Carnations Chrysanthemums Roses	Aphids Thrips	1/2 lb. (8 oz.)	As aphids begin to appear. As thrips begin to appear or at the tight flower bud stage. Repeat applications may be necessary.	Apply the specified amount of ORTHENE 97 Pellets in 100 gals. water with a hydraulic sprayer as a full coverage spray. Do not apply more often than once every 28 days to Carnations and Chrysanthemums. Caution: Phytotoxicity has occurred on the following Chrysanthemum varieties: Albatross, Bonnie Jean, Dixie, Garland, Gem, Iceberg, Pride, Showoff, Statesman, Tally Ho, Westward Ho, and Wild Honey. Before treating large Chrysanthemum plantings, spray only a few plants and observe two weeks for varietal phytotoxicity. Do not apply to Chrysanthemums and Roses with open flowers.

Do not apply under conditions involving possible drift to food, forage or other plantings that might be damaged or the crops thereof rendered unfit for sale, use or consumption.

NOTE: This product is sold by weight and package is full when packed and is inclined to settle.

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STORAGE AND DISPOSAL

PROHIBITIONS

Do not contaminate water, food or feed by storage, disposal or cleaning of equipment. Open dumping is prohibited.

STORAGE

Keep pesticide in original container.
Do not put concentrate or dilute into food or drink containers.
Store in cool, dry place. Protect from excessive heat.
Do not contaminate food or foodstuffs.
Do not store or transport near feed or food.
For help with any spill, leak, fire or exposure involving this material, call day or night 1-800-892-0099.

PESTICIDE DISPOSAL

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

CONTAINER DISPOSAL

Completely empty canister into application equipment. Do not reuse container. Dispose of empty canister in a sanitary landfill or by incineration, or if allowed by State and local authorities, by burning. If burned, stay out of smoke.

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AMMO® - Reg. TM of FMC Corporation for cypemethrin insecticide.
ASANA® - Reg. TM of E. I. duPont de Nemours & Co., Inc. for esfenvalerate insecticide.
BAYTHROID® - Reg. TM of Bayer Corporation for cyfluthrin synthetic pyrethroid.
CAPTURE® - Reg. TM of FMC Corporation for bifenthrin insecticide miticide.
DANITOL® - Reg. TM of Sumitomo Chemical Company Ltd. for fenpropathrin insecticide-miticide
EGGS/DEADHATCH® - Reg. TM of Valent U.S.A. Corporation
KARATE® - Reg. TM of Zeneca Agrochemicals Co. U.K. for lambda-cyhalothrin insecticide.
LORSBAN® - Reg. TM of Dow AgroSciences LLC for chlorpyrifos insecticide.
ORTHENE® - Reg. TM of OMS Investments, Inc. for acephate insecticide.
PAYLOAD® - Reg. TM of Valent U.S.A. Corporation.
SCOUT® and SCOUT X-TRA® - Reg. TM of Hoechst-Roussel Agri-Vet. Co. for tralomethrin pyrethroid insecticide.
TAME® - Reg. TM of Valent U.S.A. Corporation

Manufactured for
Valent U.S.A. Corporation
P.O. Box 8025
Walnut Creek, CA 94596-8025

Made in U.S.A.

000719-OR97PL7.REG

EPA Reg. No. 59639-91
EPA Est. No. 33560-TN-01, 39578-TX-01

Reference No. 8

PM 3

269-2632

5/13/96

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U.S. ENVIRONMENTAL PROTECTION AGENCY
Office of Pesticide Programs
Registration Division (H7505C)
401 "M" St., S.W.
Washington, D.C. 20460

EPA Reg. Number:
239-2632

Date of Issuance:
MAY 13 1998

NOTICE OF PESTICIDE:
 Registration
 Reregistration

Term of Issuance:
Conditional

Name of Pesticide Product:
Ortho Orthene Fire Ant
Killer Formula II

(under FIFRA, as amended)

Name and Address of Registrant (include ZIP Code):
The Solaris Group, A Division of the
Agricultural Group of Monsanto Company
P.O. Box 5006
San Roman, CA 94583

Note: Changes in labeling differing in substance from that accepted in connection with this registration must be submitted to and accepted by the Registration Division prior to use of the label in commerce. In any correspondence on this product always refer to the above EPA registration number.

On the basis of information furnished by the registrant, the above named pesticide is hereby registered/reregistered under the Federal Insecticide, Fungicide and Rodenticide Act.

Registration is in no way to be construed as an endorsement or recommendation of this product by the Agency. In order to protect health and the environment, the Administrator, on his motion, may at any time suspend or cancel the registration of a pesticide in accordance with the Act. The acceptance of any name in connection with the registration of a product under this Act is not to be construed as giving the registrant a right to exclusive use of the name or to its use if it has been covered by others.

This product is conditionally registered in accordance with FIFRA sec. 3(c)(7)(A) provided that you:

1. Submit and/or cite all data required for registration of your product under FIFRA sec. 3(c)(5) when the Agency requires all registrants of similar products to submit such data; and submit acceptable responses required for reregistration of your product under FIFRA section 4.

2. Make the following label changes before you release the product for shipment:

- a. Add the phrase, "EPA Reg. No. 239-2632".
- b. Revise the First Aid statement for ingestion to read as cited below. This revision would be consistent with the statement appearing on the current registered label for similiar products containing acephate.

"If swallowed drink 1 or 2 glasses of water or milk and induce vomiting by touching the back of the throat with finger. If possible, contact a physician, Poison Control Center or emergency center before inducing vomiting. Do not induce vomiting or give anything by mouth to an unconscious person. Take person and product to the nearest emergency treatment center."

Signature of Approving Official:
Mark A. Mat

Date:
MAY 13 1998

page 2
EPA Reg. No. 239-2632

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3. Submit two copies of the revised final printed label before you release the product for shipment.

If these conditions are not complied with, the registration will be subject to cancellation in accordance with FIFRA sec. 6(e). Your release for shipment of the product constitutes acceptance of these conditions.

A stamped copy of the label is enclosed for your records.

Sincerely,



Marilyn Mautz
Biologist
Insecticide-Rodenticide Branch
Registration Division (7504C)

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ORTHO® ORTHENE® Fire Ant Killer Formula II, EPA Reg. No. 239-2632

Treats up to 72 mounds
Quick Kill of Fire Ants
Ready-To-Use
Destroys Entire Colonies within 3 to 7 days

Note: This package is sold by weight. Contents may have settled during shipment.

Active Ingredient	
Acephate	50%
Other Ingredients.....	50%

ORTHENE®, Acephate U.S. Pat. Nos 3,716,600 & 3,914,417

Keep out of reach of children
CAUTION
See side/back panel for additional precautionary statements

NET WT. 1 lb. (453 g)

ACCEPTED
with COMMENTS
in EPA Letter Dated:
MAY 13 1998

Under the Federal Insecticide,
Fungicide, and Rodenticide Act
as amended, for the pesticide
registered under EPA Reg. No.
239-2632

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For Home Use Only

Gives quick knockdown and kill of fire ant workers within hours. Colonies are destroyed within 3 to 7 days. Fire ant workers track the powder deep into the mound where it also kills the queens, destroying the mound.

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

READ ENTIRE LABEL. USE STRICTLY IN ACCORDANCE WITH LABEL PRECAUTIONARY STATEMENTS AND DIRECTIONS.

IMPORTED FIRE ANTS, Red Harvester Ants and Pavement Ants in home lawns and around ornamental plantings:

Sprinkle 3 teaspoonfuls dry powder over each mound. DO NOT WATER IN. Treat new mounds as they appear. For best results, apply when ants are active. Applications during prolonged hot or dry conditions may be less effective. Try not to disturb mounds while treating. Do not apply during a heavy dew or just before a rain. Repeat treatment if ants reappear.

USE ON LAWNS

Fall Armyworm, Leafhoppers, Sod Webworms, Greenbug, Mole Crickets on Home Lawns: Use a hose-end or tank-type sprayer. Spray when insects are present or damage is first noticed. Apply 6 gals. of spray per 1000 sq. ft. Repeat if reinfestation occurs.

PEST	Tbs. To Apply Per 2 gals. of water	Tbs. To Apply Per 6 gals. of water
Greenbug, Fall Armyworm, Leafhoppers, Sod Webworms	2-1/4 Tbs.	6-3/4 Tbs.
Mole Crickets	4-1/2 Tbs.	13-1/2 Tbs.

NOTE: Keep children and domestic animals off treated areas until these areas are completely dry.

STORAGE AND DISPOSAL

STORAGE: Keep pesticide in original container. Do not put concentrate or dilute into food or drink containers. Store in a cool, dry place, preferably in a locked storage area. Do not store diluted spray.

ORTHENE Fire Ant Killer Formula II
EPA.DFT February 28, 1996

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DISPOSAL: Securely wrap partially filled or empty container in several layers of newspaper and discard in trash. Do not reuse container.

**PRECAUTIONARY STATEMENTS
HAZARDS TO HUMANS & DOMESTIC ANIMALS**

CAUTION: Harmful if swallowed. Causes moderate eye irritation. Avoid contact with eyes, skin and clothing. Avoid breathing dust or spray mist. When handling this product, wear chemical resistant gloves, long pants, and long sleeved shirt. When using outdoors, spray with the wind to your back and do not use when wind speeds are 10 mph or more. Wash the outside of the gloves with soap and water before removing. [Re-entry]: Do not allow children or pets to come into contact with treated surfaces until sprays have dried.

FIRST AID: If swallowed - immediately telephone a poison control center, emergency treatment center or a physician for advice. doctor, or transport the patient to the nearest hospital. DO NOT make person vomit unless directed to do so by medical personnel. If medical advice cannot be obtained, then immediately take person and product container to an emergency treatment center or hospital. If in eyes - Flush eyes with plenty of water. Call a physician if irritation persists. Note to Physicians: Emergency Information - call 1-800-225-2883. Acephate is a cholinesterase inhibitor. Atropine is antidotal. 2-PAM is also antidotal and may be used in conjunction with atropine but should not be used alone.

ENVIRONMENTAL HAZARDS: This pesticide is toxic to birds. Do not apply directly to water. Do not contaminate water by cleaning of equipment or disposal of wastes. Cover or soil-incorporate spills. This product is highly toxic to bees exposed to direct treatment or residues on blooming plants. Do not apply this product or allow it to drift to blooming plants if bees are visiting treatment area.

NOTICE: Buyer assumes all responsibility for safety and use not in accordance with directions.

☞ Questions, Comments or medical Information?
Call 1-800-225-2883 <http://www.ortho.com>

©Trademark of Monsanto Company
©Monsanto Company 1998

ORTHENE Fire Ant Killer Formula II
EPA.DFT February 28, 1996

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Manufactured for
The SOLARIS Group
of Monsanto Company
P.O. Box 5008
San Ramon CA 94583-0808

Form SXXX Product XXXX
EPA Reg. No 239-2632
EPA Est.
Made in USA

239-2632.A1 NPA. 1/29/98 Response to EPA Letter of 1/22/98 .

Reference No. 9

5481-8973

03/17/2009

S4071661/9
332/1300



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

OFFICE OF
PREVENTION, PESTICIDES AND
TOXIC SUBSTANCES

MAR 17 2009

*transferred to 5481-8973
6/7/09*

Ms. Kaila Moran
Product Manager
AMVAC
4695 MacArthur Court, Suite 1250
Newport Beach, CA 92660

Subject: ORTHENE PCO FORMULA II
EPA Reg. No. 5481-8973
Notification Submitted March 5, 2009

Dear Ms. Moran:

The Agency has received your Application for Pesticide Notification under Pesticide Registration Notice (PRN) 98-10 dated March 5, 2009, for the product Orthene PCO Formula II, EPA Reg. No. 5481-8973. The Registration Division (RD) has reviewed this request for its applicability under PRN 98-10 and finds that the action requested falls within the scope of PRN 98-10. The label submitted with the application has been stamped "Notification" and will be placed in our records.

If you have any questions, please call me directly at 703-305-6406.

Sincerely,

A handwritten signature in cursive script, appearing to read "William W. Jacobs".

William W. Jacobs
Insecticide-Rodenticide Branch
Registration Division (7505P)
Office of Pesticide Programs

Please read instructions on reverse before completing form.

Form Approved, OMB No. 2070-0060, Approval expires 2-28-95

	United States Environmental Protection Agency Washington, DC 20460	<input type="checkbox"/> Registration <input type="checkbox"/> Amendment <input checked="" type="checkbox"/> Other	OPP Identifier Number
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Application for Pesticide - Section I

1. Company/Product Number 5481-8973	2. EPA Product Manager Marilyn Mautz	3. Proposed Classification <input checked="" type="checkbox"/> None <input type="checkbox"/> Restricted
4. Company/Product (Name) ORTHENE PCO FORMULA II	PM# 14	
5. Name and Address of Applicant (Include Zip Code) Amvac Chemical Corporation 4695 MacArthur Court, Suite 1250 Newport Beach, CA 92660 <input type="checkbox"/> Check if this is a new address	6. Expedited Review. In accordance with FIFRA Section 3(c)(3)(b)(i), my product is similar or identical in composition and labeling to: EPA Reg. No. _____ Product Name _____	

Section - II

<input type="checkbox"/> Amendment - Explain below	<input type="checkbox"/> Final printed labels in response to Agency letter dated	NOTIFICATION MAR 17 2009
<input type="checkbox"/> Resubmission in response to Agency letter dated _____	<input type="checkbox"/> "Me Too" Application	
<input checked="" type="checkbox"/> Notification - Explain below	<input type="checkbox"/> Other - Explain below	

Explanation: Use additional page(s) if necessary. (For Section I and Section II.)
Notification of the Alternate Brand Name of ORTHENE PCO PELLETS for ORTHENE PCO FORMULA II.
 This notification is consistent with the provisions of PR Notice 98-10 and EPA regulations at 40 CFR 152.46, and no other changes have been made to the labeling or the confidential statement of formula of this product. I understand that it is a violation of 18 U.S.C. Sec. 1001 to willfully make any false statement to the EPA. I further understand that if this notification is not consistent with the terms of PR Notice 98-10 and 40 CFR 152.46, this product may be in violation of FIFRA and I may be subject to enforcement action and penalties under sections 12 and 14 of FIFRA.

Section - III

1. Material This Product Will Be Packaged In:			
Child-Resistant Packaging <input type="checkbox"/> Yes* <input checked="" type="checkbox"/> No * Certification must be submitted	Unit Packaging <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If "Yes" Unit Packaging wt. No. per container	Water Soluble Packaging <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If "Yes" Package wt. No. per container	2. Type of Container <input type="checkbox"/> Metal <input type="checkbox"/> Plastic <input type="checkbox"/> Glass <input type="checkbox"/> Paper <input checked="" type="checkbox"/> Other (Specify) _____
3. Location of Net Contents Information <input checked="" type="checkbox"/> Label <input type="checkbox"/> Container	4. Size(s) Retail Container	5. Location of Label Directions <input checked="" type="checkbox"/> On Label <input type="checkbox"/> On Labeling accompanying product	
6. Manner in Which Label is Affixed to Product <input type="checkbox"/> Lithographed <input checked="" type="checkbox"/> Paper glued		<input type="checkbox"/> Stenciled <input type="checkbox"/> Other _____	

Section - IV

1. Contact Point (Complete items directly below for identification of individual to be contacted, if necessary, to process this application.)			
Name Kaila Moran	Title Product Manager	Telephone No. (Include Area Code) 949-221-6108	
Certification I certify that the statements I have made on this form and all attachments thereto are true, accurate and complete. I acknowledge that any knowingly false or misleading statement may be punishable by fine or imprisonment or both under applicable law.			8. Date Application Received (Stamped)
2. Signature <i>Kaila Moran</i>	3. Title Product Manager		
4. Typed Name Kaila Moran	5. Date 05-Mar-09		

EPA Form 8570-1 (Rev. 3-94) Previous editions are obsolete.

White - EPA File Copy (original) Yellow - Applicant Copy



3/9

05 March 2009

Ms. Marilyn Mautz
Document Processing Desk
Office of Pesticide Programs (7508C)
U.S. Environmental Protection Agency
One Potomac Yard
2777 S. Crystal Drive
Arlington, VA 22202

**Subject: Notification of Alternate Brand Name for:
ORTHENE PCO FORMULA II (EPA Reg. No. 5481-8973)
ORTHENE PCO PELLETS (Alternate Brand Name)**

Dear George:

Please find enclosed the notification of the Alternate Brand Name ORTHENE PCO PELLETS for ORTHENE PCO FORMULA II (EPA Reg. No. 5481-8973).

In support of this notification, please find the following documents enclosed:

- Application for Pesticide Registration (EPA form 8570-1)
- Labeling for the Alternate Brand Name, ORTHENE PCO PELLETS (Ref. No. 8973-20090305r1)

Please feel free to contact me if you have any questions at 1-949-221-6108 or email kailar@amac-chemical.com. Thank you for your attention to this matter.

Best Regards,

Kaila Moran
Product Manager



20090305kmm02.ace.us

4695 MacArthur Court, Suite 1250, Newport Beach, CA 92660 • (949) 260-1212 • Fax (949) 260-1214

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ORTHENE[®] PCO Pellets (Insecticide)

For Use Only By Professional Applicators

Active Ingredient	By Weight
*Acephate.....	97.4 %
Inert Ingredients.....	2.6 %
Total.....	100.0 %
*O,S-Dimethyl acetylphosphoramidothioate	

U.S. Patent. No. 6,013,272

NOTIFICATION

MAR 17 2009

**KEEP OUT OF REACH OF CHILDREN
CAUTION**

OK/mj

FIRST AID	
If swallowed:	<ul style="list-style-type: none"> Call a poison control center or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by a poison control center or doctor. Do not give anything by mouth to an unconscious person.
If in eyes:	<ul style="list-style-type: none"> Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.
If on skin or clothing:	<ul style="list-style-type: none"> Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.
If inhaled:	<ul style="list-style-type: none"> Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible. Call a poison control center or doctor for further treatment advice.

EMERGENCY INFORMATION

Have the product container or label with you when calling a poison control center or doctor, or going for treatment. FOR THE FOLLOWING EMERGENCIES, PHONE 24 HOURS A DAY:
 Transportation: CHEMTREC.....1-800-424-9300
 Other: AMVAC.....1-323-264-3910

NOTE TO PHYSICIAN

Acephate is a cholinesterase inhibitor. If signs and symptoms of cholinesterase inhibition appear, atropine is antidotal. 2-PAM is also antidotal and may be administered in conjunction with atropine but should not be used alone.

SEE SIDE/BACK PANEL FOR ADDITIONAL PRECAUTIONARY STATEMENTS AND DIRECTIONS FOR USE.

EPA Reg. No. 5481-8973
EPA Est. No.

Net Contents:
As Marked on Container



4100 E. Washington Blvd.
 Los Angeles, CA 90023 U.S.A
 1-323-264-3910 • www.amvac-chemical.com

[Faint, illegible text, possibly bleed-through from another page]

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS & DOMESTIC ANIMALS

CAUTION

Harmful if swallowed. Do not enter or allow others to enter treated areas until sprays have dried.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

Some materials that are chemical-resistant to this product are listed below. If you want more options, follow the instructions for category A on an EPA chemical-resistance category selection chart.

Mixers, Loaders, Applicators and Other Handlers must wear:

- Long sleeved shirt and long pants
- Chemical-resistant gloves such as Butyl rubber ≥ 14 mils, Nitrile rubber ≥ 14 mils and Neoprene ≥ 14 mils
- Shoes plus socks.

In addition, all Mixers and Loaders and all Applicators using low pressure hand wand application equipment must wear: A NIOSH-approved dust mist filtering respirator with MSHA/NIOSH approved number prefix TC-21C or a NIOSH-approved respirator with any N, R, P or HE filter.

Follow the manufacturer's instructions for cleaning/maintaining PPE. If no instructions for washables exist, use detergent and hot water. Keep and wash PPE separately from other laundry.

USER SAFETY RECOMMENDATION

Users should:

- Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.
- Remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

ENVIRONMENTAL HAZARDS

This pesticide is toxic to birds. Do not apply directly to water, or to areas where surface water is present or to intertidal areas below the mean high water mark. Cover or soil-incorporate spills. Do not contaminate water when cleaning equipment or disposing of equipment washwaters.

Do not discharge effluent containing this product into lakes, streams, ponds, estuaries, oceans or other waters unless in accordance with the requirements of a National Pollutant Discharge Elimination System (NPDES) permit and the permitting authority has been notified in writing prior to discharge. Do not discharge effluent containing this product to sewer systems without previously notifying the local sewage treatment plant authority. For guidance contact your State Water Board or Regional Office of the EPA.

This product and its degradate are highly toxic to bees exposed to direct treatment on blooming crops or weeds. Do not apply this product or allow it to drift to blooming crops or weeds while bees are actively visiting the treatment area.

DIRECTIONS FOR USE

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

READ ENTIRE LABEL. USE STRICTLY IN ACCORDANCE WITH PRECAUTIONARY STATEMENTS AND DIRECTIONS AND WITH APPLICABLE STATE AND FEDERAL

REGULATIONS.

Not for use in feed processing areas in feed handling establishments.

This product is not for indoor residential use.

TANK MIXES

NOTICE: Tank mixing or use of this product with any other product which is not specifically and expressly authorized by the label shall be the exclusive risk of user, applicator and/or application advisor.
Read and follow the entire label of each product to be used in the tank mix with this product.

GENERAL INFORMATION

Use *Orthene* PCO Pellets for residual pest control in the areas listed by application as a 0.75% or 1.0% spray. Use the 0.75% rate for control of light infestations on non-porous surfaces and the 1.0% spray to reduce heavy infestations. Activity on porous surfaces may be limited. Repeat treatment as needed except where indicated otherwise.

SPRAY DRIFT MANAGEMENT

Do not apply this product in a manner that allows spray to drift and contact humans, animals or other non-target sites. A variety of factors including weather conditions, (e.g., wind direction, wind speed, temperature, relative humidity) and method of application can influence pesticide drift. The applicator must evaluate all factors and make appropriate adjustments when applying this product.

DIRECTIONS

Apply within Industrial, Institutional, and Commercial Buildings including Restaurants, Warehouses, Stores, Hospitals, Hotels, Manufacturing Plants and Ships. Apply as an outdoor treatment for control of the listed ants and other insects listed in the outdoor use directions. Note: Outdoor applications made to turfgrass are restricted to treatment of fire ant and harvester ant mounds. Agitate or shake spray container to ensure thorough dissolution.

Desired Concentration Wt/Wt	Grams Product in 1 Gal Water	Ounces Product in 1 Gal Water	No. of Packets in 1 Gal Water
1/2%	19.5	0.7	1/2
3/4%	29.3	1.0	3/4
1%	39.0	1.4	1

Cockroaches, Ants (excluding fire, harvester, carpenter and pharaoh), Crickets, Fleas and Firebrats: Apply as a coarse, low pressure spot spray, crack and crevice spray or with a paint brush to localized areas where these pests are found or normally occur including corners of rooms and closets; around television sets and radios; along and behind baseboards; around and under sinks, dishwashers, washing machines, refrigerators, stoves and cabinets; areas where plumbing enters or leaves the room; or other areas inhabited by these pests.

NOTE: A period of 3 to 7 days may be necessary for *Orthene* PCO Pellets to reach its maximum effect on cockroaches.

Earwigs, Pillbugs and Sowbugs: Apply as a coarse, low pressure spot spray to areas around doors and windows, storage areas, baseboards and other areas where these pests may enter or be found.

Pantry Pests - Exposed Stages (Confused Flour Beetle, Indian Meal Moth, and Trogoderma): Apply *Orthene* PCO Pellets at 1.0% as a spot application to pantry and cupboard shelves where food containers suspected of being infested are stored. Prior to spraying, remove all foodstuffs, shelving paper and utensils. Do not replace the food packages until the surface has dried. Replace shelving paper, infested food.

packages should be destroyed.

Wasps (Outdoor): Apply *Orthene* PCO Pellets as a spot application at 0.5% to 1.0% to the nest, nest entrance and surrounding areas where the wasps alight. Wasps are generally less active early and late in the day, so it is advisable that nests should be treated during these times. Do not apply with low pressure hand-wand equipment.

Perimeter Treatment: To control Ants (excluding carpenter, fire, harvester and pharaoh ants), Cockroaches, Pillbugs and Earwigs, apply *Orthene* PCO Pellets at 0.5% to 1.0% to a band of soil 6 to 10 ft adjacent to the structure, also to a height of 2 to 3 ft. on the foundation where pests may be active or may find entrance. Also, apply as a residual spray or with a paint brush to surfaces of buildings, window frames, shutters, entry ways, screens, eaves, patios, garages, carports, around garbage areas and other areas where these pests congregate. Do not apply with low pressure hand-wand equipment. **NOTE:** When making Perimeter Treatments, only foraging ants will be controlled. Not for use on residential turf as a perimeter treatment.

Ants, Fire and Harvester (excluding carpenter and pharaoh ants) in mounds within a treated perimeter - In order to control a mound or nest, a drench treatment is necessary. For mound drench treatment, dissolve 1 packet (1.4 oz) of *Orthene* PCO Pellets in 9 gals of water. Apply 1 gal of mix to each mound by sprinkling the mound until it is wet and treat a 4 ft diameter circle around the mound.

For best results, apply *Orthene* PCO Pellets in the early morning or late afternoon when ants are most active. Mound drench applications made under prolonged hot and dry conditions may be ineffective due to the location of ants deep within the nest.

NOTE: Grass in treated areas may be injured. **DO NOT** treat a mound more than once per season.

For Application as Spot Treatment in the Listed Structures - Spot treatments may be applied at moderate pressures (up to 35 psi) using a coarse fan tip. For spot treatments, no individual spot will exceed 2 sq ft Mix *Orthene* PCO Pellets according to dilution chart. Apply as a SPOT TREATMENT using coarse fan spray to areas inhabited by cockroaches. Treat areas such as baseboards, under and behind refrigerators, stoves, dishwashing and other equipment, as well as in storage areas, closets, sinks, cabinets, around windows, doors and water pipes. Spot treatment should also include underside of drawers, shelves and other sites where cockroaches frequent or travel.

Food Handling Establishments: For use in Federally Inspected Meat and Poultry Plants and places other than private residences in which exposed food is held, processed, prepared or served.

Food Areas - Application Limited to Spot and/or Crack and Crevice Treatment Only: Includes areas for receiving, storage, packing (canning, bottling, wrapping, boxing) preparing, edible waste storage and enclosed processing systems (mills, dairies, edible oils, syrups). Spray concentration shall be limited to a maximum of 1.0% active ingredient. Apply in small amounts directly into cracks and crevices using equipment capable of delivering a pin-stream of insecticide in points between different elements of construction, between equipment and floors, openings leading to voids and hollow spaces in walls, equipment legs and bases, where labeled insects hide. Care should be taken to avoid depositing this product onto exposed surfaces or introducing the material into the air. Avoid contamination of food or food processing surfaces. **Applications of This Product In the Food Areas of Food Handling Establishments, Other than as a Spot and/or Crack and Crevice Treatment are not Permitted.**

Non-Food Areas - Includes garbage rooms, lavatories, floor drains (to sewer entries and vestibules, offices, locker rooms, machine rooms, boiler rooms, garages, mop closets and storage). Spray concentration shall be limited to a maximum of 1.0% active ingredient. Apply to baseboard areas, around water pipes, surfaces behind and beneath sinks, lockers, tables, pallets and similar areas where insects hide or through which they may enter.

Serving Areas - Facilities where prepared foods are served, such as dining rooms, but excluding areas where foods may be prepared or held: Apply as a spot treatment to selective surfaces such as baseboards,

under elements of construction into cracks and crevices. Avoid treating surfaces likely to be contacted by food. (Do not apply when facility is in operation or foods are exposed). Do not allow spray or mist to contact food, foodstuffs or water supplies. Dishes and food handling utensils should be thoroughly washed in soap and water if exposed to contamination by the application of this product. Do not allow children or pets to come into contact with treated surfaces until sprays have dried.

Avoid contamination of food or food processing surfaces.

Caution. Do not apply directly to carpet as staining may occur. Do not treat unpainted masonry floors in poorly ventilated areas such as garages or basements, especially where moisture or high humidity exists since activity on porous surfaces may be limited.

STORAGE AND DISPOSAL

Do not contaminate water, food or feed by storage, disposal or cleaning of equipment.

PESTICIDE STORAGE

Keep pesticide in original container.
Do not put concentrate or dilute into food or drink containers.
Store in cool, dry place.
Protect from excessive heat.
Do not store or transport near feed or food.
For help with any spill, leak, fire or exposure involving this material, call day or night 1-323-264-3910.

PESTICIDE DISPOSAL

Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility. Open dumping is prohibited.

CONTAINER DISPOSAL

After insuring that both used packets and outer containers are empty, crush and dispose of in trash container.

LIMITED WARRANTY AND DISCLAIMER

The manufacturer warrants (a) that this product conforms to the chemical description on the label; (b) that this product is reasonably fit for the purposes set forth in the directions for use, subject to the inherent risks referred to herein, when it is used in accordance with such directions; and (c) that the directions, warnings, and other statements on this label are based upon responsible experts' evaluations of reasonable tests of effectiveness, of toxicity to laboratory animals and to plants and residues on food crops, and upon reports of field experience. Tests have not been made on all varieties of food crops and plants, or in all states or under all conditions.

THERE ARE NO EXPRESS WARRANTIES OTHER THAN THOSE SET FORTH HEREIN. TO THE EXTENT CONSISTENT WITH APPLICABLE LAW THE MANUFACTURER NEITHER MAKES NOR INTENDS, NOR DOES IT AUTHORIZE ANY AGENT OR REPRESENTATIVE, TO MAKE ANY OTHER WARRANTIES, EXPRESS OR IMPLIED, AND IT EXPRESSLY EXCLUDES AND DISCLAIMS ALL IMPLIED WARRANTIES OF MERCHANTABILITY OF FITNESS FOR A PARTICULAR PURPOSE, OR ANY WARRANTY OF QUALITY OR PERFORMANCE. THIS WARRANTY DOES NOT EXTEND TO, AND THE BUYER SHALL BE SOLELY RESPONSIBLE FOR, ANY AND ALL LOSS OR DAMAGE WHICH RESULTS FROM THE USE OF THIS PRODUCT IN ANY MANNER WHICH IS INCONSISTENT WITH THE LABEL DIRECTIONS, WARNINGS OR CAUTIONS.

TO THE EXTENT CONSISTENT WITH APPLICABLE LAW BUYER'S EXCLUSIVE REMEDY AND MANUFACTURER'S OR SELLER'S EXCLUSIVE LIABILITY FOR ANY AND ALL CLAIMS, LOSSES, DAMAGES, OR INJURIES RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT, WHETHER OR NOT BASED IN CONTRACT, NEGLIGENCE, STRICT

LIABILITY IN TORT OR OTHERWISE, SHALL BE LIMITED, AT THE MANUFACTURER'S OPTION, TO REPLACEMENT OF, OR THE REPAYMENT OF THE PURCHASE PRICE FOR, THE QUANTITY OF PRODUCT WITH RESPECT TO WHICH DAMAGES ARE CLAIMED. TO THE EXTENT CONSISTENT WITH APPLICABLE LAW MANUFACTURER OR SELLER SHALL NOT BE LIABLE FOR SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT.

AMVAC offers this product, and Buyer accepts it, subject to the foregoing Limited Warranty which may be varied only by agreement in writing signed by an authorized representative of AMVAC.

Orthene is a registered trademark of OMS Investments, Inc.

AMVAC Chemical Corporation
4100 E. Washington Boulevard
Los Angeles, CA 90023 U.S.A.
1-323-264-3910
www.amvac-chemical.com



Reference No. 10a



Details for ORTHENE TURFGRASS & CONTAINER GROWN NURSERY STOCK 15 GRANULAR

EPA Contact Information

[Search Again](#)

You will need Adobe Reader to view some of the files on this page. See [EPA's PDF page](#) to learn more.

Provided below is the information for the product you selected. To view the label, click on the date in the **Accepted Date** Field. The latest label is at the top of the list.

EPA Registration Number: 5481-8977
Company Name: AMVAC CHEMICAL CORPORATION
Address: 4695 MACARTHUR COURT, SUITE 1200
City, State Zip: NEWPORT BEACH, CA 926601706
First Registered Date: OCTOBER 12, 1994
Current Status (Date): Registered (OCTOBER 12, 1994)
Restricted Use: NO

Labels

Data Comp

Chemical

Alt Brand Name

Inactive Alt Brand Name

Transfer History

Site

Pest

EPA Reg. No.	Product Name	Accepted Date
5481-8977	ORTHENE TURFGRASS & CONTAINER GROWN NURSERY STOCK 15 GRANULAR	August 13, 2012 (PDF)
59639-87	ORTHENE TURFGRASS & CONTAINER GROWN NURSERY STOCK 15 GRANULAR	September 11, 2007 (PDF)
59639-87	ORTHENE TURFGRASS & CONTAINER GROWN NURSERY STOCK 15 GRANULAR	March 29, 2007 (PDF)
59639-87	ORTHENE TURFGRASS & CONTAINER GROWN NURSERY STOCK 15 GRANULAR	July 26, 2002 (PDF)
59639-87	ORTHENE TURFGRASS & CONTAINER GROWN NURSERY STOCK 15 GRANULAR	January 15, 1999 (PDF)
59639-87	ORTHENE TURFGRASS & CONTAINER GROWN NURSERY STOCK 15 GRANULAR	December 22, 1998 (PDF)
59639-87	ORTHENE TURFGRASS & CONTAINER GROWN NURSERY STOCK 15 GRANULAR	October 28, 1998 (PDF)
59639-87	ORTHENE TURFGRASS & CONTAINER GROWN NURSERY STOCK 15 GRANULAR	January 02, 1997 (PDF)
59639-87	ORTHENE TURFGRASS & CONTAINER GROWN NURSERY STOCK 15 GRANULAR	October 12, 1994 (PDF)

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Version: 2.4.1.1

TEMPLATE UPDATED ON
11 DECEMBER 2016

Reference No. 10b

5481-8977

8/13/2012

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON D C 20460



OFFICE OF CHEMICAL SAFETY
AND POLLUTION PREVENTION

AUG 13 2012

Kaila Moran
Regulatory Consultant
AMVAC
4695 MacArthur Court Suite 1250
Newport Beach CA 92660

Subject Orthene Turfgrass & Container Grown Nursery Stock 15 Granular
EPA Reg No 5481 8977
Notification Application Dated July 12 2012
Minor label revisions and updating Storage and Disposal Instructions

Dear Ms Moran

The Agency has received your Application for Pesticide Notification under Pesticide Registration Notices (PRN) 2007 4 and 98 10 dated July 12 2012 for the subject product EPA Reg No 5481 8977 The Registration Division (RD) has reviewed this request and finds that the actions requested fall within the scopes of PR Notices 2007 4 and 98 10 The label submitted with the application has been stamped Notification and will be placed in our records

If you have any questions please call me directly at (703) 308 8043 or email lewis.marianne@epa.gov

Sincerely

A handwritten signature in black ink that reads "Marianne Lewis".

Marianne Lewis
Insecticide Rodenticide Branch
Registration Division (7505P)
Office of Pesticide Programs

2/g



United States
Environmental Protection Agency
Washington DC 20460

Registration
 Amendment
 Other

OPP Identifier Number

Application for Pesticide Section I

1 Company/Product Number 5481 8977	2 EPA Product Manager	3 Proposed Classification <input checked="" type="checkbox"/> None <input type="checkbox"/> Restricted
4 Company/Product (Name) Orthene Turf & Container Grown Nursery Stock 15G	PM#	
5 Name and Address of Applicant (Include Zip Code) Amvac Chemical Corporation 4695 MacArthur Court Suite 1250 Newport Beach CA 92660 <input type="checkbox"/> Check if this is a new address	6 Expedited Review In accordance with FIFRA Section 3(c)(3)(b)(i) my product is similar or identical in composition and labeling to EPA Reg No _____ Product Name _____	

Section II

Amendment Explain below Final printed labels in response to Agency letter dated _____
 Resubmission in response to Agency letter dated _____ Me Too Application
 Notification Explain below Other Explain below

Explanation Use additional page(s) if necessary (For Section I and Section II) Notification of Minor Label Revisions and Storage and Disposal Statements
 Notification of label change per PR Notice 2007 4 This notification is consistent with the guidance in PR Notice 2007 4 and the requirements of EPA's regulations at 40 CFR §§ 156 10 156 140 156 144 156 146 and 156 156 No other changes have been made to the labeling or the Confidential Statement of Formula for this product I understand that it is a violation of 18 U S C Sec 1001 to willfully make any false statement to EPA I further understand that if the amended label is not consistent with the requirements of 40 CFR §§ 156 10 156 140 156 144 156 146 and 156 156 this product may be in violation of FIFRA and I may be subject to enforcement action and penalties under sections 12 and 14 of FIFRA
 This notification is consistent with the provisions of PR Notice 98 10 and EPA regulations at 40 CFR 152 46 and no other changes have been made to the labeling or the confidential statement of formula of this product I understand that it is a violation of 18 U S C Sec 1001 to willfully make any false statement to EPA I further understand that if this notification is not consistent with the terms of PR Notice 98 10 and 40 CFR 152 46 this product may be in violation of FIFRA and I may be subject to enforcement action and penalties under sections 12 and 14 of FIFRA

Section III

1 Material This Product Will Be Packaged In			
Child Resistant Packaging <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No * Certification must be submitted	Unit Packaging <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes Unit Packaging wt No per container	Water Soluble Packaging <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes Package wt No per container	2 Type of Container <input checked="" type="checkbox"/> Metal <input checked="" type="checkbox"/> Plastic <input type="checkbox"/> Glass <input type="checkbox"/> Paper <input type="checkbox"/> Other (Specify) _____
3 Location of Net Contents Information <input checked="" type="checkbox"/> Label <input type="checkbox"/> Container	4 Size(s) Retail Container	5 Location of Label Directions <input checked="" type="checkbox"/> On Label <input type="checkbox"/> On Labeling accompanying product	
6 Manner in Which Label is Affixed to Product <input type="checkbox"/> Lithographed <input type="checkbox"/> Stenciled <input checked="" type="checkbox"/> Paper glued <input type="checkbox"/> Other _____			

Section IV

1 Contact Point (Complete items directly below for identification of individual to be contacted if necessary to process this application)			
Name Kaila Moran	Title Regulatory Consultant	Telephone No (Include Area Code) (562) 607 2146	
Certification I certify that the statements I have made on this form and all attachments thereto are true accurate and complete I acknowledge that any knowingly false or misleading statement may be punishable by fine or imprisonment or both under applicable law			8 Date Application Received (Stamped)
2 Signature 	3 Title Regulatory Consultant		
4 Typed Name Kaila Moran	5 Date 12 Jul 2008		



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July 12 2012

Ms Julie Chao
Document Processing Desk
Office of Pesticide Programs (Notif)
U S Environmental Protection Agency
One Potomac Yard
2777 S Crystal Drive
Arlington VA 22202

Subject Notification of Minor Label Revisions and Storage and Disposal Language Per PR Notice 2007-4
Orthene Tobacco Insect Spray (EPA Reg No 5481 8972)
Orthene 15 Granular (EPA Reg No 5481 8976)
Orthene Turf & Container Grown Nursery Stock 15G (EPA Reg No 5481 8977)

Dear Julie

This is submitted in response to the EPA letters dated May 31 2012 as well as our phone conversation June 8 2012 As you mentioned on the phone the Container Disposal Statements updated per the PR Notice 2007 4 are acceptable However you requested revising the language throughout the label with regards to using the word general when referring to mandatory (non-optional) use directions I have made the requested label changes as suggested as well as included REDLINE labels to highlight the revisions I have also revised the applications to with the updated certification under PR 98 10

In support of this request enclosed please find the following

- Application for each Pesticide Registration (EPA Form 8570 1)
- ~~two~~ ^{two} copies of each label with a redline copy showing changes (Ref No 8972 20120509r1, 8976 20120509r1 8977 20120508r1)
- Copies of the May 31 2012 letters for reference

It is my understanding that this satisfies the requirements of the Agency's PR Notice and will require no further action If you have any questions or require additional information please do not hesitate to contact me at 562 607 2146 or email kailam@amvacchemical.com Thank you for your attention to this matter

Best regards

Kaila Moran
Regulatory Consultant

20120712kmm02 ace us Orthene Notification PR Notice 2007 4

4695 MacArthur Court Suite 1200 Newport Beach CA 92660 (949) 260 1212 Fax (949) 260 1214

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Orthene® Turfgrass & Container Grown Nursery Stock 15 Granular

An ORTHENE® Turfgrass & Container Grown Nursery Stock 15 Granular Insecticide for Use on Container Grown Nursery Stock Golf Course and Sod Farm Turfgrass and for Treatment of Ant Mounds on Turfgrass and Non Crop Areas

GIVES EFFECTIVE CONTROL

Active Ingredient
*Acephate
Other Ingredients
Total

By Wt
15.0%
85.0%
100.0%

*O S Dimethyl acetylphosphoramidothioate
U S Patent Nos 5 298 501 5 369 100 5 352 674

NOTIFICATION

**KEEP OUT OF REACH OF CHILDREN
CAUTION**

AUG 13 2012

FIRST AID	
If swallowed	<ul style="list-style-type: none"> • Call a poison control center or doctor immediately for treatment advice • Have person sip a glass of water if able to swallow • Do not induce vomiting unless told to do so by a poison control center or doctor • Do not give anything by mouth to an unconscious person
If in eyes	<ul style="list-style-type: none"> • Hold eye open and rinse slowly and gently with water for 15 20 minutes • Remove contact lenses if present after the first 5 minutes then continue rinsing eye • Call a poison control center or doctor for treatment advice
If on skin or clothing	<ul style="list-style-type: none"> • Take off contaminated clothing • Rinse skin immediately with plenty of water for 15 20 minutes • Call a poison control center or doctor for treatment advice
If inhaled	<ul style="list-style-type: none"> • Move person to fresh air • If person is not breathing call 911 or an ambulance then give artificial respiration preferably by mouth if possible • Call a poison control center or doctor for further treatment advice
EMERGENCY INFORMATION	
Have the product container or label with you when calling a poison control center or doctor or going for treatment FOR THE FOLLOWING EMERGENCIES PHONE 24 HOURS A DAY	
Transportation CHEMTREC	1 800 424 9300
Other AMVAC	1 323 264 3910
NOTE TO PHYSICIAN	
This material contains a cholinesterase inhibitor Measurement of blood cholinesterase activity may be useful in monitoring exposure but decisions regarding treatment will usually need to be made before test results are available If signs of cholinesterase inhibition appear atropine sulfate is antidotal 2 PAM (PROTOPAM) is also antidotal and may be used in conjunction with atropine but should not be used alone	

SEE SIDE/BACK PANEL FOR ADDITIONAL PRECAUTIONARY STATEMENTS AND DIRECTIONS FOR USE

EPA Reg No 5481 8977
EPA Est No

Net Contents
As Marked on Container



PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS & DOMESTIC ANIMALS

CAUTION

Harmful if swallowed or absorbed through skin. Causes moderate eye irritation. Avoid contact with skin, eyes or clothing.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

Some materials that are chemical resistant to this product are shown below. If you want more options, follow the instructions for category A on an EPA chemical resistance category selection chart.

Mixers, Loaders, Applicators and Other Handlers must wear

- Long sleeved shirt and long pants
- Chemical resistant gloves such as Butyl rubber ≥ 14 mils, Nitrile rubber ≥ 14 mils or Neoprene ≥ 14 mils
- Socks plus shoes

In addition, Mixers, Loaders and Applicators supporting or making broadcast applications to turf must wear: A NIOSH approved dust/mist filtering respirator with MSHA/NIOSH approved number prefix TC 21C or a NIOSH approved respirator with any N, R, P or HE filter.

See engineering controls for additional requirements.

ENGINEERING CONTROLS

When handlers use closed systems or enclosed cabs in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240(d)(4-6)], the handler PPE requirements may be reduced or modified as specified in the WPS.

Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables exist, use detergent and hot water. Keep and wash PPE separately from other laundry. As soon as possible, wash thoroughly and change into clean clothing.

USER SAFETY RECOMMENDATION

Users should

- Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.
- Remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

ENVIRONMENTAL HAZARDS

This pesticide is toxic to birds. For terrestrial uses, do not apply directly to water or to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when cleaning equipment or disposing of equipment washwaters. Cover or soil incorporate spills.

DIRECTIONS FOR USE

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

Applications to trees, shrubs and potted plants by hand or hand held application equipment is prohibited.

READ ENTIRE LABEL. USE STRICTLY IN ACCORDANCE WITH PRECAUTIONARY STATEMENTS AND DIRECTIONS AND WITH APPLICABLE STATE AND FEDERAL REGULATIONS.

Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.

AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard 40 CFR part 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE) and restricted entry interval. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of 24 hours.

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil or water, is:

- coveralls
- chemical resistant gloves made of any waterproof material and
- shoes plus socks

NON AGRICULTURAL USE REQUIREMENTS

The requirements in this box apply to uses of this product that are **NOT** within the scope of the Worker Protection Standard for agricultural pesticides (40 CFR Part 170). The WPS applies when this product is used to produce agricultural plants on farms, forests, nurseries or greenhouses.

Do not enter or allow others to enter until dusts have settled, or for those areas where irrigation is required following treatment, until treated areas have dried.

TANK MIXES

NOTICE: Tank mixing or use of this product with any other product which is not specifically and expressly authorized by the label shall be the exclusive risk of user, applicator and/or application advisor.

Read and follow the entire label of each product to be used in the tank mix with this product.

USE INFORMATION

CONTAINER GROWN NURSERY STOCK
Including Outdoor and Shadehouse, Lathhouse and Greenhouse Grown Containers

CROPS	PESTS CONTROLLED	AMOUNT ORTHENE TURFGRASS & CONTAINER GROWN NURSERY STOCK 15 GRANULAR	SPECIAL INSTRUCTIONS
Container Grown Nursery Stock (including Outdoor Shadehouse, Lathhouse and Greenhouse Grown Containers) Azalea Holly Pyracantha Photinia Crape Myrtle	Ants (excluding fire harvester, carpenter and pharaoh ants) Aphids Azalea Lacebug Mealybugs	Broadcast Application Apply over pots at 0.4 lb per 1,000 sq. ft. with a broadcast applicator	Potted Plants Pot Size (diameter) 3 to 12. Uniformly distribute specified dosage over soil surface. Irrigate after application and as needed, avoiding excessive irrigation to maintain product in root zone. Do Not Apply to freshly rooted cuttings

Application to trees, shrubs and potted plants by hand or hand held application equipment (i.e. belly grinders) is prohibited.

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TURFGRASS AND NON CROP AREAS MOUND TREATMENT

APPLICATION SITES	PESTS CONTROLLED	AMOUNT ORTHENE TURFGRASS & CONTAINER GROWN NURSERY STOCK 15 GRANULAR	SPECIAL INSTRUCTIONS
Turfgrass Residential Recreational and Commercial Turf Non Crop Areas	Imported Fire Ants and Harvester Ants	Mound Treatment Evenly distribute 2 Tbsps of product over the mound (2 Tbsps = 15 shakes) This statement will be added to 12 oz shaker canister label only	For best results apply material in the early morning or late afternoon when the ants are most active. Applications made under prolonged hot and dry conditions may be ineffective due to the location of the ants deep within the nest. Grass in treated area may be injured.

USE PRECAUTIONS

- Irrigate immediately after application with 1/8 inch of water
- Do not over water or allow puddles to form. This formulation readily dissolves when exposed to water. Immediate irrigation without puddling minimizes exposure of birds to broadcast granules.
- Do not apply by air
- User must allow at least 3 days between last application and harvesting of sod

GOLF COURSE AND SOD FARM TURFGRASS

CROPS	PESTS CONTROLLED	RATE OF ORTHENE TURFGRASS & CONTAINER GROWN NURSERY STOCK 15 GRANULAR PER ACRE	REMARKS
Golf Course and Sod Farm Turfgrass	Armyworms Mole Crickets Cutworms Chinch Bugs Sod Webworms Spittlebugs	Sod Farm Turfgrass 20 lbs /A (0.46 lb per 1 000 sq ft) Golf Course Turfgrass 27 lbs /A (0.62 lb per 1 000 sq ft)	Apply using broadcast ground equipment accurately calibrated to uniformly apply a granular pesticide. Repeat application may be necessary. Do not apply at more than 1 week intervals. Do not allow livestock to graze treated areas. Do not feed treated grass to livestock.

STORAGE AND DISPOSAL

Do not contaminate water, food or feed by storage, disposal or cleaning of equipment.

PESTICIDE STORAGE

Keep pesticide in original container.
Store in cool, dry place. Protect from excessive heat.
Do not contaminate food or foodstuffs.
Do not store or transport near feed or food.
For help with any spill, leak, fire or exposure involving this material, call day or night 1 323 264 3910.

PESTICIDE DISPOSAL

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

CONTAINER DISPOSAL

Nonrefillable container. Do not reuse or refill this container. Complete empty bag into application equipment. Do not reuse container. 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.

LIMITED WARRANTY AND DISCLAIMER

The manufacturer warrants (a) that this product conforms to the chemical description on the label (b) that this product is reasonably fit for the purposes set forth in the directions for use subject to the inherent risks referred to herein when it is used in accordance with such directions and (c) that the directions warnings and other statements on this label are based upon responsible experts evaluations of reasonable tests of effectiveness of toxicity to laboratory animals and to plants and residues on food crops and upon reports of field experience Tests have not been made on all varieties of food crops and plants or in all states or under all conditions

THERE ARE NO EXPRESS WARRANTIES OTHER THAN THOSE SET FORTH HEREIN TO THE EXTENT CONSISTENT WITH APPLICABLE LAW THE MANUFACTURER NEITHER MAKES NOR INTENDS NOR DOES IT AUTHORIZE ANY AGENT OR REPRESENTATIVE TO MAKE ANY OTHER WARRANTIES EXPRESS OR IMPLIED AND IT EXPRESSLY EXCLUDES AND DISCLAIMS ALL IMPLIED WARRANTIES OF MERCHANTABILITY OF FITNESS FOR A PARTICULAR PURPOSE OR ANY WARRANTY OF QUALITY OR PERFORMANCE THIS WARRANTY DOES NOT EXTEND TO AND THE BUYER SHALL BE SOLELY RESPONSIBLE FOR ANY AND ALL LOSS OR DAMAGE WHICH RESULTS FROM THE USE OF THIS PRODUCT IN ANY MANNER WHICH IS INCONSISTENT WITH THE LABEL DIRECTIONS WARNINGS OR CAUTIONS

TO THE EXTENT CONSISTENT WITH APPLICABLE LAW BUYER S EXCLUSIVE REMEDY AND MANUFACTURER S OR SELLER S EXCLUSIVE LIABILITY FOR ANY AND ALL CLAIMS LOSSES DAMAGES OR INJURIES RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT WHETHER OR NOT BASED IN CONTRACT NEGLIGENCE STRICT LIABILITY IN TORT OR OTHERWISE SHALL BE LIMITED AT THE MANUFACTURER S OPTION TO REPLACEMENT OF OR THE REPAYMENT OF THE PURCHASE PRICE FOR THE QUANTITY OF PRODUCT WITH RESPECT TO WHICH DAMAGES ARE CLAIMED TO THE EXTENT CONSISTENT WITH APPLICABLE LAW MANUFACTURER OR SELLER SHALL NOT BE LIABLE FOR SPECIAL INDIRECT OR CONSEQUENTIAL DAMAGES RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT

AMVAC offers this product and Buyer accepts it subject to the foregoing Limited Warranty which may be varied only by agreement in writing signed by an authorized representative of AMVAC

Orthene is a registered trademark of OMS Investments Inc

AMVAC Chemical Corporation
4100 E Washington Boulevard
Los Angeles CA 90023 U S A
1 323 264 3910

Reference No. 10c

	United States Environmental Protection Agency Washington, DC 20460	<input type="checkbox"/> Registration <input type="checkbox"/> Amendment <input checked="" type="checkbox"/> Other	OPP Identifier Number 255236
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Application for Pesticide - Section I

1. Company/Product Number 59639-87	2. EPA Product Manager Tina Levine	3. Proposed Classification <input type="checkbox"/> None <input type="checkbox"/> Restricted
4. Company/Product (Name) PINPOINT 15 Granular	PM# 04	
5. Name and Address of Applicant (Include ZIP Code) Valent U.S.A. Corporation 1333 N. California Blvd., Ste 600 Walnut Creek, CA 94596 <input type="checkbox"/> Check if this is a new address	6. Expedited Review. In accordance with FIFRA Section 3(c)(3) (b)(i), my product is similar or identical in composition and labeling to: EPA Reg. No. _____ Product Name _____	

Section - II -

<input type="checkbox"/> Amendment - Explain below.	<input type="checkbox"/> Final printed labels in response to Agency letter dated _____	NOTIFICATION JAN 15 1999
<input type="checkbox"/> Resubmission in response to Agency letter dated _____	<input type="checkbox"/> "Me Too" Application.	
<input checked="" type="checkbox"/> Notification - Explain below.	<input type="checkbox"/> Other - Explain below.	

Explanation: Use additional page(s) if necessary. (For section I and Section II.)

Addition of a descriptive statement to front panel.

Section - III

1. Material This Product Will Be Packaged In:				2. Type of Container	
Child-Resistant Packaging <input type="checkbox"/> Yes* <input type="checkbox"/> No	Unit Packaging <input type="checkbox"/> Yes <input type="checkbox"/> No	Water Soluble Packaging <input type="checkbox"/> Yes <input type="checkbox"/> No	If "Yes" Unit Packaging wgt.	No. per container	<input type="checkbox"/> Metal <input type="checkbox"/> Plastic <input type="checkbox"/> Glass <input type="checkbox"/> Paper <input type="checkbox"/> Other (Specify) _____
Certification must be submitted		If "Yes" Package wgt	No. per container		
3. Location of Net Contents Information <input type="checkbox"/> Label <input type="checkbox"/> Container		4. Size(s) Retail Container		5. Location of Label Directions <input type="checkbox"/> On Label <input type="checkbox"/> On Labeling accompanying product	
6. Manner in Which Label is Affixed to Product <input type="checkbox"/> Lithograph Paper glued <input type="checkbox"/> Stenciled			<input type="checkbox"/> Other _____		

Section - IV

1. Contact Point (Complete items directly below for identification of individual to be contacted, if necessary, to process this application.)

Name Elizabeth J. Weibert	Title Registration Compliance Analyst	Telephone No. (Include Area Code) (925-256-2791)
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Certification I certify that the statements I have made on this form and all attachments thereto are true, accurate and complete. I acknowledge that any knowingly false or misleading statement may be punishable by fine or imprisonment or both under applicable law.		6. Date Application Received (Stamped)
2. Signature 	3. Title Registration Compliance Analyst	
4. Typed Name Elizabeth J. Weibert	5. Date December 31, 1998	



PINPOINT™ 15 Granular

An Orthene® Granular Insecticide For Use On Container Grown Nursery Stock and
Ants In Turfgrass and Non-Crop Areas.

GIVES FAST EFFECTIVE CONTROL

Active Ingredient	By Wt.
* Acephate (O,S-Dimethyl acetylphosphoramidothioate)	15%
Inert Ingredients	85%

* U.S. Pat. Nos. 5,298,501; 5,369,100; 5,352,674
ORTHENE® - reg. TM of Monsanto Company for acephate insecticide.

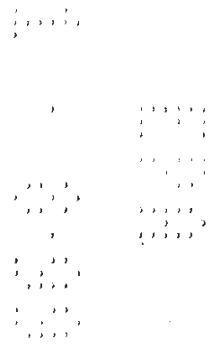
KEEP OUT OF REACH OF CHILDREN

CAUTION

SEE NEXT PAGE FOR ADDITIONAL PRECAUTIONARY STATEMENTS.

NET WEIGHT 10 POUNDS

NOTIFICATION
JAN 15 1999



PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS AND DOMESTIC ANIMALS

CAUTION: Harmful if swallowed or absorbed through skin. Causes moderate eye irritation. Avoid contact with skin, eyes or clothing. Wash thoroughly with soap and water after handling. Do not allow children or pets to come into contact with the treated areas until the foliage has dried following irrigation.

STATEMENT OF PRACTICAL TREATMENT: Acephate is an organophosphate, cholinesterase inhibitor.

If swallowed: Call a physician or Poison Control Center. Drink 1 or 2 glasses of water and induce vomiting by touching back of throat with finger. Do not induce vomiting or give anything by mouth, to an unconscious person or convulsing person. Take person and product container to the nearest emergency treatment center.

If on skin: Wash with plenty of soap and water. Get medical attention.

If in eyes: Flush with plenty of water. Call a physician if irritation persists.

Note to Physicians: Emergency Information - call 1-800-892-0099. Acephate is a cholinesterase inhibitor. If signs of cholinesterase inhibition appear, atropine is antidotal. 2-PAM may also be used in conjunction with atropine, but should not be used alone.

Personal Protective Equipment (PPE):

Applicators and other handlers must wear: long-sleeved shirt and long pants, waterproof gloves, and shoes plus socks.

Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

USER SAFETY RECOMMENDATIONS

Users should:

- * Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.
- * Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- * Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

ENVIRONMENTAL HAZARDS

This pesticide is toxic to birds. Cover or soil incorporate spills. Do not apply directly to water, or to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of wastes or equipment washwaters.

DIRECTIONS FOR USE

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

READ ENTIRE LABEL. USE STRICTLY IN ACCORDANCE WITH PRECAUTIONARY STATEMENTS AND DIRECTIONS AND WITH APPLICABLE STATE AND FEDERAL REGULATIONS.

Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.

4017

AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE), and restricted-entry interval. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

Do not enter or allow worker entry into treated areas during the restricted-entry interval (REI) of 12 hours.

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water, is: coveralls, waterproof gloves, shoes plus socks.

NON-AGRICULTURAL USE REQUIREMENTS

The requirements in this box apply to uses of this product that are **NOT** within the scope of the Worker Protection Standard for agricultural pesticides (40 CFR Part 170). The WPS applies when this product is used to produce agricultural plants on farms, forests, nurseries or greenhouses.

For other uses, do not enter treated areas until any dusts have settled, or for those areas where irrigation is required following treatment, until treated areas have dried.

5047

**DISCLAIMER, CONDITIONS OF SALE,
LIMITED WARRANTY
AND LIMITATION OF LIABILITY**

IMPORTANT: Read the entire Label including this Disclaimer, Limited Warranty and Limitation of Liability before using this product. If the terms are not acceptable, return the unopened product within 15 days of purchase.

RISKS OF USING THIS PRODUCT

It is impossible to eliminate all risks associated with the use of this product. Such risks include, but are not limited to, injury to plants and crops to which this product is applied, lack of control of the target pests or weeds, resistance, injury caused by drift, and injury to rotational crops caused by carryover in the soil. Such risks of crop injury, non-performance or other unintended consequences are unavoidable and may result because of such factors as weather, soil conditions, moisture conditions, irrigation practices, presence of other materials, cultural practices or the manner of use or application, all of which are factors beyond the control of Valent. **All such risks shall be assumed by the Buyer.** Valent shall not be responsible for losses or damages resulting from use of this product in any manner not set forth on the label. User assumes all risks associated with the use of this product in any manner or under conditions not specifically directed or approved on the label.

LIMITED WARRANTY

Valent warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated in the label, under average use conditions, when used strictly in accordance with the label and subject to the Risks of Using This Product described above.

DISCLAIMER OF ALL OTHER WARRANTIES

VALENT MAKES NO OTHER EXPRESS OR IMPLIED WARRANTY OF FITNESS OR OF MERCHANTABILITY OR ANY OTHER EXPRESS OR IMPLIED WARRANTY. No agent or representative of Valent or Seller is authorized to make or create any other express or implied warranty.

LIMITATION OF LIABILITY

In no event shall Valent or Seller be liable for any incidental, consequential, indirect or special damages resulting from the use or handling of this product. **THE EXCLUSIVE REMEDY OF THE USER OR BUYER, AND THE EXCLUSIVE MAXIMUM LIABILITY OF VALENT OR SELLER FOR ANY AND ALL CLAIMS, LOSSES, INJURIES OR DAMAGES (INCLUDING CLAIMS BASED ON BREACH OF WARRANTY, CONTRACT, NEGLIGENCE, TORT, STRICT LIABILITY OR OTHERWISE) RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT SHALL BE THE RETURN OF THE PURCHASE PRICE OF THIS PRODUCT OR, AT THE ELECTION OF VALENT OR SELLER, THE REPLACEMENT OF THIS PRODUCT.**

NO AMENDMENTS

Valent and Seller offer this product, and Buyer and User accept it, subject to the foregoing Disclaimer, Conditions of Sale, Limited Warranty and Limitation of Liability, which may not be modified by any oral or written agreement.

PROMPT NOTICE OF CLAIM

Valent must have prompt notice as soon as Buyer or User has reason to believe they may have a claim (not to exceed twenty-one days from date of application) so that an immediate inspection of the affected property and growing crops can be made. Unless Buyer and Users shall promptly notify Valent of any claims, they shall be barred from obtaining any remedy.

TANK MIXES

NOTICE: Tank mixing or use of this product with any other product which is not specifically and expressly authorized by the label shall be the exclusive risk of user, applicator and/or application advisor.

Read and follow the entire label of each product to be used in the tank mix with this product.

6027

DIRECTIONS

CONTAINER GROWN NURSERY STOCK

Including Outdoor and Shadehouse, Lathhouse and Greenhouse Grown Containers

CROP	PESTS	AMOUNT PINPOINT 15 GRANULAR	SPECIAL INSTRUCTIONS
Container-Grown Nursery Stock: (Including Outdoor, Shadehouse, Lathhouse and Greenhouse Grown Containers) Azalea Holly Pyracantha Photinia Crape Myrtle Poinsettia	Aphids Mealybugs Azalea Lacebug Ants, Including Imported Fire Ants	Manual Application: 1/2 to 3/4 teaspoon/pot Broadcast Application: Apply over pots at 0.4 lb. per 1000 square feet with a broadcast applicator.	Potted Plants: Pot Size (diameter) 3" to 12": Uniformly distribute specified dosage over soil surface. Use lower rate for manual application to smaller pots. Irrigate after application and as needed, avoiding excessive irrigation to maintain product in root zone. Do Not Apply to freshly rooted cuttings.

TURFGRASS AND NON-CROP AREAS - MOUND TREATMENT

CROP	PEST	AMOUNT PINPOINT 15 GRANULAR	SPECIAL INSTRUCTIONS
Turfgrass Non-Crop Areas	Ants, including Imported Fire Ants	Mound Treatment Evenly distribute 2 tablespoons of product over the mound. (2 tablespoons = 15 shakes)* *This statement will be added to 12 ounce shaker canister label only.	For best results, apply material in the early morning or late afternoon when the ants are most active. Applications made under prolonged hot and dry conditions may be ineffective due to the location of the ants deep within the nest. Grass in treated area may be injured.

7 of 7

TURFGRASS:
Lawns and Recreational Turfgrass
and
Commercial Turfgrass

CROP	PESTS CONTROLLED	RATE OF PINPOINT 15 GRANULAR PER ACRE	REMARKS
TURFGRASS: LAWNS AND RECREATIONAL TURFGRASS Including Golfcourses and Residential Lawns (Non-Agricultural Classification) and COMMERCIAL TURFGRASS Including Sodfarms [Agricultural Classification]	Armyworms Mole Crickets Cutworms Chinch Bugs Sod Webworms Spittlebugs	27 to 33 lbs. per acre (3/5 to 3/4 lb. per 1,000 square feet)	Apply using broadcast ground equipment accurately calibrated to uniformly apply a granular pesticide. Repeat application may be necessary. Do not apply at more than 1 week intervals. Do not allow livestock to graze treated areas. Do not feed treated grass to livestock.
USE PRECAUTIONS: Irrigate immediately after application with 1/8 inch of water. Do not over-water or allow puddles to form. This formulation readily dissolves when exposed to water. Immediate irrigation without puddling minimizes exposure of birds to broadcast granules.			

STORAGE AND DISPOSAL

PROHIBITIONS

Do not contaminate water, food or feed by storage, disposal or cleaning of equipment. Open dumping is prohibited.

STORAGE

Keep pesticide in original container.
Store in a cool, dry place. Protect from excessive heat.
Do not contaminate food or foodstuffs.
Do not store or transport near feed or food.
For help with any spill, leak, fire or exposure involving this material, call day or night 1-800-892-0099.

PESTICIDE DISPOSAL

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

CONTAINER DISPOSAL

Completely empty bag into application equipment. Do not reuse container. 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.

Copyright© 1996 by Valent U.S.A. Corporation.

Manufactured for
Valent U.S.A. Corporation
Walnut Creek, CA 94596-8025
Form R1500B0.1981215 Made in U.S.A.
EPA Reg. No. 59639-87
EPA Est. No. 33560-TN-01

Reference No. 11

1677-192

10/17/2000

1/2

Please read instructions on reverse before completing form

Form Approved OMB No. 2070-0060 Approval Expires 5-31-98

	United States Environmental Protection Agency Washington, DC 20460	<input type="checkbox"/> Registration <input type="checkbox"/> Amendment <input checked="" type="checkbox"/> Other	OPP Identifier Number
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Application for Pesticide - Section I

1. Company/Product Number 1677-192	2. EPA Product Manager Marilyn Mautz	3. Proposed Classification <input checked="" type="checkbox"/> None <input type="checkbox"/> Restricted
3. Company/Product (Name) ECO2000-FB	PM# 04 Insecticide-Rodenticide Branch	
5. Name and Address of Applicant (Include ZIP Code) Ecolab Inc. Ecolab Center St. Paul, MN 55102 <input type="checkbox"/> Check if this is a new address	6. Expedited Review. In accordance with FIFRA Section 3 (c) (3) (b) (i), my product is similar or identical in composition and labeling to: EPA Reg. No. _____ Product Name _____	

Section - II

<input type="checkbox"/> Amendment - Explain below.	<input type="checkbox"/> Final printed labels in response to	NOTIFICATION OCT 17 2000
<input type="checkbox"/> Resubmission in response to Agency letter dated _____	<input type="checkbox"/> "Me Too" Application	
<input checked="" type="checkbox"/> Notification - Explain below.	<input type="checkbox"/> Other - Explain below.	

Explanation: Use additional Page(s) if necessary. (For section I and Section II)
 This submission serves as a notification to add additional in-door, nonfood sites to the label pursuant to PR Notice 98-10, Section III(C).
 This notification is consistent with the provisions of PR Notice 98-10 and EPA regulations at 40 CFR 152.46, and no other changes have been made to the labeling or the confidential statement of formula of this product. I understand that it is a violation of 18 U.S.C. Sec. 1001 to willfully make any false statement to the EPA. I further understand that if this notification is not consistent with the terms of PR Notice 98-10 and 40 CFR 152.46, this product may be in violation of FIFRA and I may be subject to enforcement action and penalties under sections 12 and 14 of FIFRA.

Section - III

1. Material This Product Will Be Packaged In:				2. Type of Container	
Child-Resistant Packaging <input type="checkbox"/> Yes* <input type="checkbox"/> No * Certification must be submitted	Unit Packaging <input type="checkbox"/> Yes <input type="checkbox"/> No If "Yes" Unit Packaging wgt. No. per Container	Water Soluble Packaging <input type="checkbox"/> Yes <input type="checkbox"/> No If "Yes" Unit Package wgt. No. Per Container	<input type="checkbox"/> Metal <input type="checkbox"/> Plastic <input type="checkbox"/> Glass <input type="checkbox"/> Paper <input type="checkbox"/> Other (Specify) _____		
3. Location of Net Contents Information <input type="checkbox"/> Label <input type="checkbox"/> Container		4. Size(s) Retail Container		5. Location of Label Directions <input type="checkbox"/> On Label <input type="checkbox"/> On Labeling accompanying product	
6. Manner in Which Label is Affixed to Product <input type="checkbox"/> Lithograph <input type="checkbox"/> Paper glued <input type="checkbox"/> Stenciled <input type="checkbox"/> Other _____					

Section - IV

1. Contact Point. (Complete items directly below for identification of individual to be contacted if necessary to process this application.)					
Name Brian C. Brosdahl		Title Manager, North American Registrations		Telephone No. (Include Area Code) (651) 293-2948	
I certify that the statements which I have made on this form and all attachments are true, accurate and complete. I acknowledge that any knowingly false or misleading statement may be punishable by fine or imprisonment or both under applicable law.					6. Date Application Received (Stamped)
2. Signature 		3. Title Manager, North American Registrations			
4. Typed Name Brian C. Brosdahl		5. Date 09/26/00			

ECO2000-FB

FOR CONTROL OF: Cockroaches

PRECAUTIONARY STATEMENTS

Hazards to Humans and Domestic Animals

CAUTION: Harmful if swallowed or absorbed through the skin. Causes moderate eye irritation. Avoid contact with eyes, skin or clothing. Wash thoroughly with soap and water after handling.

STATEMENT OF PRACTICAL TREATMENT:

IF SWALLOWED: Call a physician or Poison Control Center. Drink 1 or 2 glasses of water and induce vomiting by touching back of throat with finger. If person is unconscious, do not give anything by mouth and do not induce vomiting.

IF IN EYES: Flush eyes with plenty of water. Call a physician if irritation persists.

IF ON SKIN: Wash with plenty of soap and water. Call a physician if irritation persists.

IF INHALED: Remove person from treatment area.

NOTE TO PHYSICIAN: Acephate is a cholinesterase inhibitor. If signs and symptoms of cholinesterase inhibition appear, atropine is antidotal. 2-PAM is also antidotal and may be administered in conjunction with atropine but should not be used alone.

Worker Safety

USE ONLY WHEN WEARING THE FOLLOWING PROTECTIVE CLOTHING AND EQUIPMENT DURING MIXING/LOADING, APPLICATION, AND DISPOSAL OF THE PESTICIDE: Chemical-resistant gloves, long-sleeved shirt, long-legged pants, shoes and socks.

Work Safety

Always wash hands, face, and arms with soap and water before smoking, eating, drinking or using the toilet.

After Work

Before removing gloves, wash them with soap and water. Do not wear contaminated clothing. Personal and protective clothing worn during work must be laundered separately from household articles. Store protective clothing separately from personal clothing. Clean or launder protective clothing after each use.

STORAGE AND DISPOSAL

Do not contaminate water, food and feed by storage or disposal. **STORAGE:** Keep pesticide in original container. Store in a secured cool and dry place. Protect from excessive heat. Do not store or transport near feed or food. **PESTICIDE DISPOSAL:** Wastes resulting from the use of this product may be disposed of on-site or at an approved waste disposal facility. **CONTAINER DISPOSAL:** Do not reuse empty ECO2000-FB glass vial, Bait Base packet or ECO2000-FB dispensing cartridge. Wrap and put in trash.

DIRECTIONS FOR USE: It is a violation of Federal Law to use this product in a manner inconsistent with its labeling. Not for re-sale. To prepare 1% insecticidal bait, open one ECO2000-FB vial and add 30 ml water. Replace cover and shake until ECO2000-FB is dissolved. Add vial contents to one packet of Bait Base, close packet and thoroughly mix by shaking or kneading. Insecticidal bait is now prepared. Pour the prepared insecticidal bait into an ECO2000-FB dispensing cartridge, cover and let set for at least 20 minutes. If left unattended during the 20 minute period, store in a secure or locked area. Place the prepared ECO2000-FB dispensing cartridge in a bait applicator and apply pea-sized or small portions of bait behind and under stoves, ovens, refrigerators and freezers, dishwashers and sinks. Reapply as necessary. Remove any deposits of bait from exposed surfaces. Do not use the ECO2000-FB dispensing cartridge for any purpose other than as instructed on the label. Store any unused bait in a secure or locked area.

FOOD AND FEED HANDLING ESTABLISHMENTS: Establishments such as restaurants; dairies; packaging, bottling and canning plants; bakeries; mills or anywhere food and feed is stored, prepared, processed and packaged.

FOOD AREA - LIMITED TO SPOT AND CRACK AND CREVICE TREATMENTS ONLY: Includes areas where food or feed is received, stored, prepared, served, packaged, handled in an enclosed system and where edible waste is stored. Apply prepared bait directly into cracks and crevices, where equipment meets floors and walls, equipment and counter legs; bases, motors and conduits; holes and openings leading to wall voids where insects hide. Avoid contamination of food and foodstuffs and exposed surfaces where food is prepared, processed and served.

NON-FOOD AREAS: Include garbage rooms, rest rooms, laboratories, offices, locker rooms, boiler and equipment rooms, garages, mop closets and storage. Apply to cracks and crevices around baseboards, around water and drain pipes, underneath and behind sinks, lockers, tables and similar areas where insects may hide.

SERVING AREAS OF FOOD SERVICE ESTABLISHMENTS: Includes dining rooms, mess halls and other areas where prepared food is served. Apply pea-sized or smaller placements to selected surfaces such as baseboards, underneath booths and into cracks and crevices. Avoid contamination of exposed surfaces where food contact can occur.

NOTIFICATION
OCT 17 2000

For Use only by Professional Applicators
Not for Residential Use

ACTIVE INGREDIENT:

Acephate (O,S-dimethyl acetylphosphoramidothioate) 96.0%

INERT INGREDIENTS:

4.0%
TOTAL 100.0%

KEEP OUT OF REACH OF CHILDREN
CAUTION

NET WEIGHT: 0.44 oz. (12.48 gm)
(12/0.037 oz (1.04 gm) vials)

DO NOT REMOVE PACKAGES FROM OUTER CONTAINER EXCEPT FOR IMMEDIATE USE

E.P.A. REG. NO. 1677-192
E.P.A. EST. NO. 69349-MN-001

**MANUFACTURED FOR: ECOLAB INC.,
ECOLAB CENTER, ST. PAUL, MINNESOTA 55102**

Reference No. 12a



Details for GULF MOTH PROOFER

EPA Contact Information

[Search Again](#)

You will need Adobe Reader to view some of the files on this page. See [EPA's PDF page](#) to learn more.

Provided below is the information for the product you selected. To view the label, click on the date in the **Accepted Date** Field. The latest label is at the top of the list.

EPA Registration Number: 239-2537
Company Name: THE SCOTTS COMPANY
Division Name: D/B/A THE ORTHO GROUP
Address: 14111 SCOTTSLAWN ROAD
City, State Zip: MARYSVILLE, OH 43041
First Registered Date: OCTOBER 03, 1985
Current Status (Date): Cancelled (MAY 01, 1987)
Restricted Use: NO

- Labels
- Data Comp
- Chemical
- Alt Brand Name
- Inactive Alt Brand Name
- Transfer History
- Site
- Pest

EPA Reg. No.	Product Name	Accepted Date
239-2537	GULF MOTH PROOFER	November 12, 1987 (PDF)
729-15	GULF MOTH PROOFER	October 30, 1969 (PDF)

1 - 2

Version: 2.4.1.1

TEMPLATE UPDATED ON
11 DECEMBER 2016

Reference No. 12b

white

USDA Registration No. 179 15

TO OPERATE: Aim spray opening away from person and press button. Hold dispenser about 18" from surface. Move nozzle steadily and quickly to avoid wetting over-application. Spray only on woolen fabrics.

GULFSPRAY MOTH PROOFER kills all stages of clothes moths and carpet beetles wet by the spray. To protect woolens, brush and clean, then spray all surfaces, particularly seams and folds. A thorough application protects stored wools for a year. Spray so that fabric both sides is lightly and uniformly saturated. Avoid saturation. A man's suit or topcoat requires about 2 minutes' spraying or about 10 seconds per pound of material. Respray if articles are washed or dry-cleaned. Permit treated garments, blankets, etc., to dry thoroughly before using. Spray inner surfaces of storage containers (except plastic bags), walls, ceilings, and cracks of clothes closets. Used as directed **GULFSPRAY MOTH PROOFER** will not stain or stain colorfast woolens.

Drapery materials should not be sprayed without testing on a small, inconspicuous area. Allow test area to dry and inspect for effect on nap. Avoid wetting asphalt tile, rubber, and plastic materials. Tiny crystals, which encrust your woolens, are sometimes visible on dark fabrics. They may be brushed off before article is used.

Clean upholstery, rugs, and carpets before spraying. Spray only weaker surfaces: linens, etc. Pay particular attention to folds and seams. Thoroughly mop carpets, especially along the edges and under seldom-moved furniture. Spray cracks in flooring and around baseboards.

SILVERFISH, FLEAS, SPIDERS, TICKS, MITES, ANTS, TERMITES, CRICKETS, BEETLES, MOTHS in food storage areas. Thoroughly wet infested areas. **BED BUGS:** Treat bed and mattress. Allow mattress to dry before using. **TICKS:** Treat floor, floor coverings, and animal sleeping quarters. **GULFSPRAY MOTH PROOFER** used as directed will provide excellent control of the insects listed.

GULFSPRAY FLYING INSECT KILLER or **GULFSPRAY QUICK ACTION INSECTICIDE** in a hand sprayer, are most effective for killing flying insects.

CAUTION: Do not spray acetate rayon, similar synthetic fabrics, silk or fur. If spray gets on skin, wash with soap and water. Do not spray on humans, pets, plants, foodstuffs, or food containers. **KEEP OUT OF REACH OF CHILDREN. HARMFUL IF SWALLOWED.** Persons hypersensitive to ingredients should not use spray. Avoid inhalation. Do not use as a "space spray" against flying insects. Remove bird cages and fish bowls while spraying. **DO NOT PUNCTURE INCINERATE OR STORE ABOVE 110°F.** Contents under pressure. Overheating may cause container to explode.

ACTIVE INGREDIENTS:
Dibutyl Tinylolyl 3.00%
Dichloroethane 65%
Residual Compounds 9.15%
Petroleum Distillates 59.00%
INERT INGREDIENTS 35.00%

NYE CO. CASE No. 3350
GULF CORPORATION
Gulf Building, P.O. Box 17007, U.S.A.
DALLAS, TEXAS

Gulf Spray

moth proofer



NET WEIGHT 14 OZS. — 0.397 KILOGRAM
CAUTION — COMBUSTIBLE
KEEP FROM HEAT OR FLAME
KEEP OUT OF REACH OF CHILDREN
Read Carefully Cautions on Back

*Technical Methoxychlor

Equivalent to 2.647 of 2,2-bis(p-methoxyphenyl)-1,1,1-trichloroethane and 0.367 of other isomers and related compounds.

ACCEPTED

3 3 9 1 1
1950

Reference No. 12c

US ENVIRONMENTAL PROTECTION AGENCY OFFICE OF PESTICIDES PROGRAMS REGISTRATION DIVISION (FS-767) WASHINGTON, DC 20460	EPA REGISTRATION NO. 239-2537	DATE OF ISSUANCE NOVEMBER 12, 1987
	TERM OF ISSUANCE <i>Until Reregistration</i>	
NOTICE OF PESTICIDE: <input checked="" type="checkbox"/> REGISTRATION <input type="checkbox"/> REREGISTRATION <i>(Under the Federal Insecticide, Fungicide, and Rodenticide Act, as amended)</i>	NAME OF PESTICIDE PRODUCT Ortho. Insect & Disease Control Formula II	
NAME AND ADDRESS OF REGISTRANT (Include ZIP code)		
Chevron Chemical Company Ortho Consumer Products Division P.O. Box 4010 Richmond CA 94806-0010		
<p>NOTE: Changes in labeling formula differing in substance from that accepted in connection with this registration must be submitted to and accepted by the Registration Division prior to use of the label in commerce. In any correspondence on this product always refer to the above U.S. EPA registration number.</p> <p>On the basis of information furnished by the registrant, the above named pesticide is hereby Registered/Reregistered under the Federal Insecticide, Fungicide, and Rodenticide Act.</p> <p>A copy of the labeling accepted in connection with this Registration/Reregistration is returned herewith.</p> <p>Registration is in no way to be construed as an indorsement or approval of this product by this Agency. In order to protect health and the environment, the Administrator, on his motion, may at any time suspend or cancel the registration of a pesticide in accordance with the Act. The acceptance of any name in connection with the registration of a product under this Act is not to be construed as giving the registrant a right to exclusive use of the name or to its use if it has been covered by others.</p> <p>This product is conditionally registered in accordance with FIFRA section 3(c)(7)(A) provided that you:</p> <ol style="list-style-type: none"> 1. Submit/cite all data required for registration/reregistration of your product under FIFRA section 3(c)(5) when the Agency requires all registrants of similar products to submit such data. 2. Make the labeling changes listed below before you release the product for shipment: <ol style="list-style-type: none"> a. Add the phrase "EPA Registration No. 239-2537." b. On the top of the front panel of your label add the following statement: Not to be sold, offered for sale, held for sale, shipped, delivered for shipment, offered for delivery, or received after December 31, 1988. Not for use after March 31, 1989. 		
<input type="checkbox"/> ATTACHMENT IS APPLICABLE		
SIGNATURE OF APPROVING OFFICIAL <i>Dennis H. Edwards</i>		DATE 11/12/87

EPA Form 8570-6 (Rev. 5-76)

PREVIOUS EDITION MAY BE USED UNTIL SUPPLY IS EXHAUSTED.

15893: I: Edwards; E-4: KENCO: 11/4/87; 11/17/87; rw: vo: ek: rw:
 R: 15895: Edwards; E-4: KENCO: 11/09/87; 11/19/87; aw: JH: aw

c. In the beginning of your Directions for Use add:

Skin contact with this pesticide may be hazardous; wear chemical resistant gloves when mixing, loading, or applying this product.

This statement may appear on a sticker rather than on a supplemental label. The terms mixing and loading may be omitted for products that do not require mixing or loading.

3. Submit five (5) copies of your final printed labeling before you release the product for shipment.

4. On April 21 and September 17, 1986 EPA issued Data Call-In Notices to Rohm & Haas Company and Makhteshim-Agan, the basic manufacturers of dicofol, requiring additional data to be submitted by certain deadlines to support the registration of pesticide products containing dicofol. The data required include environmental monitoring and certain avian studies. These data requirements must be satisfied by the applicable deadlines. If these data requirements are not met in a timely manner by you or some other person, this registration will be subject to cancellation under FIFRA section 6(e).

5. The Office of Endangered Species (OES) has issued several Biological Opinions concerning the possible impact on threatened and endangered species from the use of pesticide products containing dicofol. You must amend the registration of your product to reflect any restrictions on the sale, distribution, or use of dicofol products required or recommended in any future Biological Opinion issued by OES. You must agree to carry out such other actions, including submission to EPA of additional data, as are required or recommended in a Biological Opinion issued by OES regarding dicofol.

6. The continued registration of this product is conditioned on timely compliance with the requirements of EPA's Notice of Intent to Cancel published in the Federal Register on May 29, 1986 (51 FR 19508).

If these conditions are not complied with, the registration will be subject to cancellation in accordance with FIFRA section 6(e). Your release for shipment of the product constitutes acceptance of these conditions.

A stamped copy of the label is enclosed for your records.

Dennis H. Edwards, Jr.
Product Manager (12)
Insecticide-Rodenticide Branch
Registration Division (TS-767C)

Enclosure

ORTHENEX® Insect & Disease Control

Formula II

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS & DOMESTIC ANIMALS

DANGER: Causes irreversible eye damage. Do not get in eyes. Wear goggles or face shield when handling. Harmful swallowed. Avoid contact with skin or clothing. Avoid breathing vapors or spray mist. **STATEMENT OF PRACTICAL TREATMENT:** In case of eye contact, immediately flush eyes with fresh water for 15 minutes and get medical attention. If swallowed, promptly drink a large quantity of water and induce vomiting. Get medical attention immediately. In case of skin contact, wash skin with plenty of soap and water. If inhaled, remove person from exposure area. **Note to Physicians:** Emergency information—call (415) 233-3337.

ENVIRONMENTAL HAZARDS: This pesticide is toxic to birds. Do not apply directly to water or wetlands. Do not contaminate water by cleaning of equipment or disposal of wastes. Cover or sod-incorporate spills. This product is highly toxic to bees exposed to direct treatment or residues on blooming crops or weeds. Do not apply this product or allow it to drift to blooming crops or weeds if bees are visiting treatment area.

PHYSICAL OR CHEMICAL HAZARDS: Do not use or store near heat or open flame.

DIRECTIONS FOR USE

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

READ ENTIRE LABEL. USE STRICTLY IN ACCORDANCE WITH LABEL PRECAUTIONARY STATEMENTS AND DIRECTIONS.

ORTHENEX Insect & Disease Control effectively controls many of the insects, mites and diseases that attack roses, flowers and ornamentals. Systemic action enables part of the insecticide to be absorbed internally through leaf and stem surfaces to provide longer, more effective protection.

GENERAL DIRECTIONS

Skin contact with this pesticide may be hazardous; wear chemical resistant gloves when applying this product. Shake well before using. Use ORTHENEX Insect & Disease Control at the rate of 2 tablespoons (1 fl. oz.) or 1 per gallon of water. Spray thoroughly to cover all plant surfaces (both upper and lower leaf surfaces) including new growth. May be applied with an ORTHO SPRAY-ETTE, ORTHO Lawn & Garden Sprayer (hodge setting), tank-type or power sprayer. Does not require

the addition of wetting agents.

FOR INSECT CONTROL—Roses, Flowers and Ornamentals; Aphids, Flower Thrips, Lacebugs, Leafhoppers, Budworms, Leafminers, Spittlebugs, Fuchsia Mite and Two-spotted Mites. Spray when insects are present or when feeding injury is first noted. Repeat if reinfestation occurs. **NOTE:** Two or three applications at a 7 to 10 day interval may be required to control Two-spotted Mites.

FOR DISEASE CONTROL—Black Spot on Roses, Rust on Roses, Asters and Carnations, Powdery Mildew on Roses, Calendulas, Crape Myrtle, Oakleaf, Euonymus, Jerusalem Thorn, Lilac, Philo, Phlox, Snap Dragon and Zinnia. **Prevention:** Begin spraying when first signs of disease appear. Apply every 7 to 10 days during the spring and fall or whenever weather conditions encourage the spread of disease. **NOTE:** If disease is already established, follow a 7 day application schedule until control is achieved.

STORAGE AND DISPOSAL

STORAGE: Keep pesticide in original container. Do not put concentrate or dilute into food or drink containers. Avoid contamination of feed and foodstuffs. Store in a cool, dry place, preferably in a locked storage area. Do not store below 25 F. Do not store diluted spray.

DISPOSAL: PRODUCT—Partially filled bottle may be disposed of by securely wrapping original container in several layers of newspaper and discard in trash. **CONTAINER—**Do not reuse empty bottle. Rinse thoroughly before discarding in trash.

NOTICE: Buyer assumes all responsibility for safety and use not in accordance with directions.

Chevron Chemical Company © 1977

Ortho Consumer Products Division
San Francisco CA 94120 3144
Product 5381 Made in U.S.A.
Form C5-A
EPA Reg No. 233-
EPA Est. 233 MO-1



71549-03551



ORTHO

ORTHENEX® Insect & Disease Control Formula II

Controls Black Spot, Rust, Powdery Mildew, Controls Aphids, Mites & Other Listed Insects. On Roses, Flowers and Ornamentals. Contains ORTHENEX® Systemic Insecticide, FUNGINEX® Fungicide, KELTHANE® Miticide



Active Ingredients
*Acephate (O,S dimethyl acetylphosphoramide)
**Imidacloprid (1-methyl-1H-imidazo[4,5-b]pyridine-3-yl N,N-dimethylcarbamoyl) (1,1-bis[4-chlorophenyl]-2,2,2-trichloroethane)
Inert Ingredients
*ORTHENEX® Acephate U.S. Pat. No. 3,716,600
**FUNGINEX®—Reg. 1M of CCLAMERCK GmbH
Trifluoro Fungicide, U.S. Pat. No. 3,896,106

Keep out of reach of children
DANGER
See side panel for additional precautionary
***NET CONTENTS 1 PT.**

BEST AVAILABLE COPY

CONFIDENTIAL

PROPERTY OF
CHEVRON CHEMICAL COMPANY
UNTIL ACCEPTED BY EPA

ACCEPTED
with COMMENTS
on 12/1/77

NOV 1977

Use
For
as
reg
239-2537

Reference No. 13



Details for GUSTAFSON ACEPHATE 90 SEED PROTECTANT

EPA Contact Information

You will need Adobe Reader to view some of the files on this page. See [EPA's PDF page](#) to learn more.

Provided below is the information for the product you selected. To view the label, click on the date in the **Accepted Date** Field. The latest label is at the top of the list.

EPA Registration Number: 7501-137
Company Name: GUSTAFSON LLC
P.O. Box: 660065
City, State Zip: DALLAS, TX 75266
First Registered Date: OCTOBER 24, 1989
Current Status (Date): Cancelled (SEPTEMBER 30, 1991)
Restricted Use: NO

- Labels
- Data Comp
- Chemical
- Alt Brand Name
- Inactive Alt Brand Name
- Transfer History
- Site
- Pest

There's no label.
Version: 2.4.1.1

TEMPLATE UPDATED ON
11 DECEMBER 2016

Reference No. 14a



Details for ISOTOX INSECT KILLER FORMULA III

EPA Contact Information

You will need Adobe Reader to view some of the files on this page. See [EPA's PDF page](#) to learn more.

Provided below is the information for the product you selected. To view the label, click on the date in the **Accepted Date** Field. The latest label is at the top of the list.

EPA Registration Number: 239-2575

Company Name: THE SCOTTS COMPANY

Division Name: D/B/A THE ORTHO GROUP

Address: 14111 SCOTTSLAWN ROAD

City, State Zip: MARYSVILLE, OH 43041

First Registered Date: NOVEMBER 12, 1987

Current Status (Date): Cancelled (JULY 29, 1999)

Restricted Use: NO

Labels

Data Comp

Chemical

Alt Brand Name

Inactive Alt Brand Name

Transfer History

Site

Pest

EPA Reg. No.	Product Name	Accepted Date
239-2575	ISOTOX INSECT KILLER FORMULA III	October 19, 1989 (PDF)
239-2575	ISOTOX INSECT KILLER FORMULA III	November 12, 1987 (PDF)

1 - 2

Version: 2.4.1.1

TEMPLATE UPDATED ON
11 DECEMBER 2016

Reference No. 14b

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

OCT 19 1988

General Chemical Company
Tech. Computer Products Division
1100 San Pablo Avenue
Berkeley, CA 94706-4010
Telephone: 415/863-0000

Re: Labeling

Subject: Acceptable Registration Standard
Isotox Insect Mitic Formula III
EPA Registration No. 239-2575
Your Labeling Submitted May 31, 1988

The labeling referred to above, submitted in connection with registration under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), is acceptable, provided that you submit five (5) copies of your final printed labeling incorporating the following correction before you release the product for shipment.

o Delete the following statements from the label:

Not to be sold, offered for sale, held for sale, shipped, delivered for shipment, offered for delivery, or received after December 31, 1988. Not for use after March 31, 1989.

52814:1:Johnson:E-9:KENCO:10/17/89:11/28/89:AS:SW:VO:CT

CONCURRENCES							
SYMBOL							
SURNAME							
DATE							

EPA Form 1320-1 (12-70)

OFFICIAL FILE COPY

-2-

If this condition is not complied with, the registration will be subject to cancellation in accordance with FIFRA section 6(e). Your release for shipment of the product bearing the amended labeling constitutes acceptance of this condition.

A stamped copy of the label is enclosed for your records.

Sincerely yours,

Dennis B. Edwards, Jr.
Product Manager (12)
Insecticide-Rodenticide Branch
Registration Division (H7505C)

Enclosure

COPY A

When handling this product wear chemical resistant gloves, long pants, and long sleeved shirt. When using outdoors, spray with the wind to your back and do not use when wind speeds are 10 mph or more. Wash the outside of the gloves with soap and water before removing. Do not allow children or pets to come into contact with treated surfaces until sprays have dried.

CONFIDENTIAL
PROPERTY OF
CHEVRON CHEMICAL COMPANY
UNTIL ACCEPTED BY EPA

WLC:rm 6/51
5/9/88

Reference No. 14c

US ENVIRONMENTAL PROTECTION AGENCY OFFICE OF PESTICIDES PROGRAMS REGISTRATION DIVISION (TS-767) WASHINGTON, DC 20460 NOTICE OF PESTICIDE: <input checked="" type="checkbox"/> REGISTRATION <input type="checkbox"/> REREGISTRATION (Under the Federal Insecticide, Fungicide, and Rodenticide Act, as amended)	EPA REGISTRATION NO. 239-2575	DATE OF ISSUANCE November 12, 1987
	TERM OF ISSUANCE Until Reregistration	
	NAME OF PESTICIDE PRODUCT Isotox Insect Killer Formula III	
NAME AND ADDRESS OF REGISTRANT (Include ZIP code)		
[Cheyenne Chemical Company Of the Consumer Products Division P.O. Box 4010 Richmond, CA 94806-0010]		
<p>NOTE: Changes in labeling formula differing in substance from that accepted in connection with this registration must be submitted to and accepted by the Registration Division prior to use of the label in commerce. In any correspondence on this product always refer to the above U.S. EPA registration number.</p> <p>On the basis of information furnished by the registrant, the above named pesticide is hereby Registered/Reregistered under the Federal Insecticide, Fungicide, and Rodenticide Act.</p> <p>A copy of the labeling accepted in connection with this Registration/Reregistration is returned herewith.</p> <p>Registration is in no way to be construed as an indorsement or approval of this product by this Agency. In order to protect health and the environment, the Administrator, on his motion, may at any time suspend or cancel the registration of a pesticide in accordance with the Act. The acceptance of any name in connection with the registration of a product under this Act is not to be construed as giving the registrant a right to exclusive use of the name or to its use if it has been covered by others.</p> <p>This product is conditionally registered in accordance with FIFRA section 3(c)(7)(4) provided that you:</p> <ol style="list-style-type: none"> 1. Submit/cite all data required for registration/reregistration of your product under FIFRA section 3(c)(5) when the Agency requires all registrants of similar products to submit such data. 2. Make the labeling changes listed below before you release the product for shipment: <ol style="list-style-type: none"> a. Add the phrase "EPA Registration No. 239-2575." b. On the top of the front panel of your label add the following statement: Not to be sold, offered for sale, held for sale, shipped, delivered for shipment, offered for delivery, or received after December 31, 1988. Not for use after March 31, 1989. 		
<p style="text-align: center;">BEST AVAILABLE COPY</p>		
<input type="checkbox"/> ATTACHMENT IS APPLICABLE		
SIGNATURE OF APPROVING OFFICIAL <i>Dennis H. Edwards</i>		DATE 11/12/87

EPA Form 8570-6 (Rev. 5-76)

PREVIOUS EDITION MAY BE USED UNTIL SUPPLY IS EXHAUSTED.

R:15895:Edwards:E-4:KENCO:11/09/87:11/19/87:aw:JH:aw

R:10206:Edwards:E-4:KENCO:12/03/87:12/15/87:CB:lf:dd:rw:

c. In the beginning of your Directions for Use add:

Skin contact with this pesticide may be hazardous; wear chemical resistant gloves when mixing, loading, or applying this product.

This statement may appear on a sticker rather than on a supplemental label. The terms mixing and loading may be omitted for products that do not require mixing or loading.

3. Submit five (5) copies of your final printed labeling before you release the product for shipment.

4. On April 21 and September 17, 1986 EPA issued Data Call-In Notices to Rohm & Haas Company and Makhteshim-Agan, the basic manufacturers of dicofol, requiring additional data to be submitted by certain deadlines to support the registration of pesticide products containing dicofol. The data required include environmental monitoring and certain avian studies. These data requirements must be satisfied by the applicable deadlines. If these data requirements are not met in a timely manner by you or some other person, this registration will be subject to cancellation under FIFRA section 6(e).

5. The Office of Endangered Species (OES) has issued several Biological Opinions concerning the possible impact on threatened and endangered species from the use of pesticide products containing dicofol. You must amend the registration of your product to reflect any restrictions on the sale, distribution, or use of dicofol products required or recommended in any future Biological Opinion issued by OES. You must agree to carry out such other actions, including submission to EPA of additional data, as are required or recommended in a Biological Opinion issued by OES regarding dicofol.

6. The continued registration of this product is conditioned on timely compliance with the requirements of EPA's Notice of Intent to Cancel published in the *Federal Register* on May 29, 1986 (51 FR 19508).

If these conditions are not complied with, the registration will be subject to cancellation in accordance with FIFRA section 6(e). Your release for shipment of the product constitutes acceptance of these conditions.

A stamped copy of the label is enclosed for your records.

Dennis H. Edwards, Jr.
Product Manager (12)
Insecticide-Rodenticide Branch
Registration Division (TS-767C)

Enclosure

11383



ORTHO ISOTOX[®] Insect Killer

Formula III

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS & DOMESTIC ANIMALS
WARNING: Causes reversible eye damage. Do not get in eyes. Avoid contact with skin or clothing. Harmful if swallowed. Wear goggles or face shield when handling. Avoid breathing vapor or spray mist. Wash thoroughly after handling.
STATEMENT OF PRACTICAL TREATMENT: In case of eye contact, immediately flush eyes with fresh water for 15 minutes and get medical attention. If swallowed, promptly drink a large quantity of water and induce vomiting. Get medical attention immediately. **First Aid:** Emergency Information - call (415) 233-7373. This product contains a cholinesterase inhibitor. If signs and symptoms of cholinesterase inhibition are present, atropine is antidotal. 2-PAM may also be given in conjunction with atropine.
ENVIRONMENTAL HAZARDS: This pesticide is toxic to birds. Do not apply directly to water or wetlands. Do not contaminate water by cleaning of equipment or disposal of wastes. Cover or soil-incorporate spray.
This product is highly toxic to bees exposed to direct treatment or residues on blooming crops or weeds. Do not apply this product or allow it to drift to blooming crops or weeds if bees are visiting treatment area.
PHYSICAL OR CHEMICAL HAZARDS: Flammable. Keep away from heat and open flame.

COPY C

DIRECTIONS FOR USE: It is a violation of Federal law to use this product in a manner inconsistent with its labeling.
READ ENTIRE LABEL. USE STRICTLY IN ACCORDANCE WITH LABEL PRECAUTIONARY STATEMENTS AND DIRECTIONS.

COPY D

HOW TO USE: Mix thoroughly and spray entire plant, covering both upper and lower leaf surfaces. May be applied with an ORTHO SPRAYETTE, ORTHO Lawn and Garden Sprayer, the E-type or power sprayer. Make new dilution for each use. This product is designed for outdoor use only by home gardeners. It has not been tested on rare unusual varieties; therefore, when these plants are present, it is advisable to test on a few plants before spraying large numbers. Do not apply to plants to be used for food or feed.
Rate of Apply: Aphids and Grasshoppers on Roses, Flowers, Shrubs and Trees as Listed: Apply 4 Tbs (1 fl oz) to 1 gal water. Spray as aphids appear. Repeat if reinfestation occurs.
Japanese Weeds on Roses, Linden and Bursera: Apply 4 Tbs (2 fl oz) to 1 gal water. Begin spraying when beetles or their damage first appear and repeat at 7 to 10 day intervals for as long as needed.
All Other Listed Pests on Roses, Flowers, Shrubs and Trees as Listed: Apply 2 Tbs (1/2 fl oz) to 1 gal water. Spray when insects or mites are present or feeding damage is first noticed. Repeat if reinfestation occurs. For Mealybugs, Flower Thrips, Whiteflies, Mites, Scales and other hard-to-control pests, spray 2 to 3 times about 7 to 10 days apart. For best results, apply at first sign of infestation, before population becomes large.
CONTROLS: Aphids, Ash Plant Bug, Bagworm, Beet Armyworm, Birch Leafminer, Black Vine Weevil, B. worms, Cabbage Looper, Caterpillar Sphinx Moth (larvae), Cottonwood Leaf Beetle, Cuban Laurel Thrips, Elm Leaf Beetle, Fall Caterpillar, Fall Webworm, Fuchsia Mite, Glasshoppers, Gypsy Moth (larvae), Holly Leafminer, Lacebugs, Leafrollers, Leafhoppers, Lilac Leafminer, Maple Shoot Moth (larvae), Mimosa Webworm, Mealybug, Nantucket Pine

Tip Moth (larvae), Oak Webworm, Obscure Root Weevil, Orange-striped Oakworm, Poplar Tentmaker, Psyllids, Saddled Prominent Caterpillar, Sawflies (Dusky Birch, Blackheaded Ash), Redheaded Pine and European Pine, Scales (crawlers), Spittlebugs, Spruce Mite, Stinkbugs, Thrips, Tent Caterpillars, Two-spotted Spider Mite, Whiteflies, Willow Leaf Beetle.
PLANTS: Ageratum, Alpine Currant, Aluminum Plant, Alyssum, Andromeda, Arborvitae, Ach. Aspen, Aster, Azalea, Bald Cypress, Birch (Gray, Coliseum, Cut Leaf, White Paper), Bird's-nest Fern, Bird's-nest Sansevieria, Bird of Paradise, Boston Ivy, Bottlebrush, Burr Oak, Calendula, Camellia, Catalpa, Chastnut Oak, Cherry Laurel, Cosmos, Cottonwood, Crapemyrtle, Cuban Laurel, Dahlia, Dracaena, Dianthus, Elm, Euonymus, False Aralia, Flowering Plum, Forsythia, Fuchsia, Gardenia, Gazania, Geranium, Green Ash, Gladiolus, Hawthorn, Holly (American, Burford, Yaupon), Honey Locust, Money Tree, Impatiens, Italian Cypress, Jade Plant, Juniper, Kalanchoe, Laurel, Liliac, Linden, Maple, Marigold, Mimosa, Mountain Holly, Myosporium, Oak, Ornamental Cabbage, Ornamental Pear, Oleander, Petiole Weevil, Palmetto, Phoenix, Phlox, Phlox, Pinesap, Poinsettia, Pine, Pyracantha, Prayer Plant, Podocarpus, Poplar, Potatoes, Privet, Purple Passion, Rhododendron, Rose, Salvia, Saxifrage, Schaffner, Silver Maple, Snapdragon, Spider Plant, Spirea, Spruce, Stock, Strawberry Begonia, Sycamore, Viburnum, White Oak, Wild Plum, Wild Rose, Wild Black Cherry, Willow, Yaupon, Yew, Zinnia.
NOTE: Do not apply to American Elm, Flowering Crabapple, Sugar Maple, Red Maple, Red-bud, Begonia and Weigela as foliage injury may occur.
****SPECIAL DIRECTIONS: BLACK VINE WEEVIL** - Apply full coverage spray to foliage and soil beneath plants. Begin applications in mid-June and make 3 additional applications at 3 week intervals. **OBSCURE ROOT WEEVIL** - Apply full coverage spray to the foliage in late spring as soon as feeding is noticed (usually about May). Repeat every 4 weeks through September (Mid-July through August are the peak feeding times).
COMBINATION SPRAY WITH FUNGICIDE OR FERTILIZER ON ROSES: ISOTOX Insect Killer may be used together with PHALTAN Rose & Garden Fungicide or ORTHOCIDE (Captan) Garden Fungicide or ORTHO FUNGIX[®] Rose Disease Control or ORTHO Rose & Flower Food 8-12-4 (liquid) at the rates recommended on each product label. Apply fungicide on a regular schedule to control disease and add ISOTOX Insect Killer only when insect control is desired. Do not apply more than three consecutive applications of ISOTOX Insect Killer in combination with any of the above fungicides. Clean sprayer after each use by flushing with water; do not use household bleach as a cleaning agent.
STORAGE AND DISPOSAL: Keep pesticide in original container. Do not put concentrate or dilute into food or drink containers. Avoid contamination of feed and foodstuffs. Store in a cool, dry place, preferably in a locked storage area. Do not store diluted spray.
DISPOSAL: PRODUCT - Partially filled bottle may be disposed of by securely wrapping original container in several layers of newspaper and discard in trash.
CONTAINER - Do not reuse empty bottle. Rinse thoroughly before discarding in trash.
FUNGIX[®] - Reg. TM of CELAMERCK GmbH Co for Insecticide Fungicide.
NOTICE: Buyer assumes all responsibility for safety and use not in accordance with directions.

COPY C

Chevron Chemical Company
Ortho Consumer Products Division
San Francisco CA 94120-7144 Richmond CA 94804-0036
Form 10086-1 Product 5447 Made in U.S.A.
EPA Reg No 233-8470-2
EPA Est 290-Nat'l, 233-840-1
Supplies for wood-to-wood contact of lot numbers



CONFIDENTIAL
PROPERTY OF
CHEVRON CHEMICAL COMPANY
UNTIL ACCEPTED BY EPA

Reference No. 15

239-2595

10-19-2001

1/5

Please read instructions on reverse before completing form.

Form Approved. OMB No. 2070-0060. Approval expires 2-28-95

	United States Environmental Protection Agency Washington, DC 20460	<input type="checkbox"/> Registration	OPP Identifier Number
		<input checked="" type="checkbox"/> Amendment	
		<input checked="" type="checkbox"/> Other	

Application for Pesticide - Section I

1. Company/Product Number 239-2595	2. EPA Product Manager Tina Levine	3. Proposed Classification <input checked="" type="checkbox"/> None <input type="checkbox"/> Restricted
4. Company/Product (Name) Isotox Insect Killer Formula IV	PM# 14	
5. Name and Address of Applicant (Include ZIP Code) The Scotts Company d/b/a The ORTHO Group 14111 Scottslawn Rd Marysville, OH 43041 <input type="checkbox"/> Check if this is a new address	6. Expedited Review. In accordance with FIFRA Section 3(c)(3) (b)(i), my product is similar or identical in composition and labeling to: EPA Reg. No. _____ Product Name _____	

Section - II

<input type="checkbox"/> Amendment - Explain below.	<input checked="" type="checkbox"/> Final printed labels in response to Agency letter dated	NOTIFICATION OCT 19 2001
<input type="checkbox"/> Resubmission in response to Agency letter dated _____	<input type="checkbox"/> "Me Too" Application.	
<input checked="" type="checkbox"/> Notification - Explain below.	<input type="checkbox"/> Other - Explain below.	

Explanation: Use additional page(s) if necessary. (For section I and Section II.)

The ORTHO Group is submitting a notification of "minor label revisions" per PR Notice 98-10. This notification is consistent with the provisions of PR Notice 98-10 and EPA regulations at 40 CFR 152.46, and no other changes have been made to the labeling or the confidential statement of formula of this product. I understand that it is a violation of 18 U.S.C. Sec. 1001 to willfully make any false statement to EPA. I further understand that if this notification is not consistent with the terms of PR Notice 98-10 and 40 CFR 152.46, this product may be in violation of FIFRA and I may be subject to enforcement action and penalties under sections 12 and 14 of FIFRA.

Section - III

1. Material This Product Will Be Packaged In:

Child-Resistant Packaging <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Unit Packaging <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Water Soluble Packaging <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	2. Type of Container <input checked="" type="checkbox"/> Metal <input type="checkbox"/> Plastic <input type="checkbox"/> Glass <input type="checkbox"/> Paper <input type="checkbox"/> Other (Specify) _____
* Certification must be submitted		If "Yes" Unit Packaging wgt. 16 fl oz	No. per container 1
		If "Yes" Package wgt	No. per container

3. Location of Net Contents Information
 Label Container

4. Size(s) Retail Container

5. Location of Label Directions

6. Manner in Which Label is Affixed to Product
 Lithograph
 Paper glued
 Stenciled Other _____

Section - IV

1. Contact Point (Complete items directly below for identification of individual to be contacted, if necessary, to process this application.)

Name Charles T. Levey	Title Manager, Federal Registrations	Telephone No. (Include Area Code) 937-644-7696
--------------------------	---	---

Certification

I certify that the statements I have made on this form and all attachments thereto are true, accurate and complete. I acknowledge that any knowingly false or misleading statement may be punishable by fine or imprisonment or both under applicable law.

6. Date Application Received (Stamped)

2. Signature 	3. Title Manager, Federal Registrations
4. Typed Name Charles T. Levey	5. Date October 4, 2001

2/5

ORTHO®

NOTIFICATION

OCT 19 2001

SYSTEMIC INSECT KILLER

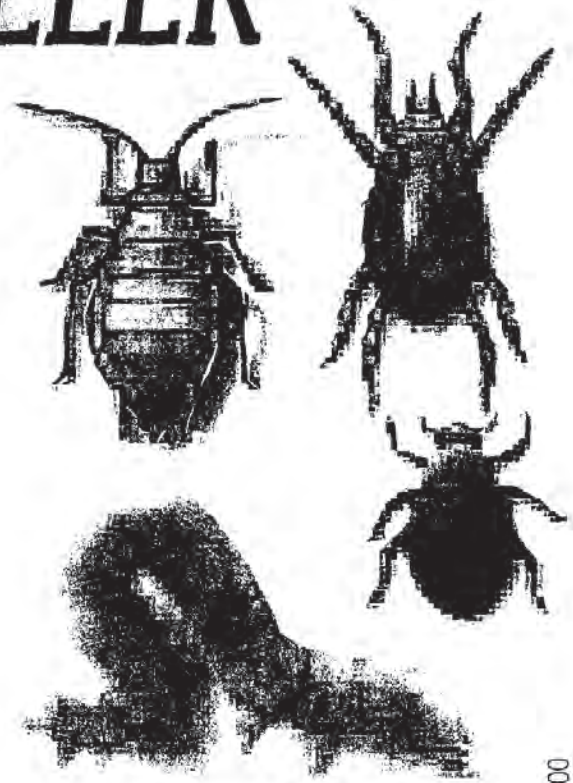


OUTDOOR
USE ONLY

CONTROLS INSECTS & MITES

CONCENTRATE

Protects entire plant from
chewing or sucking insects



Active Ingredients	
Acephate.....	8.0%
Fenbutatin-oxide.....	0.5%
Other Ingredients	91.5%

KEEP OUT OF REACH OF CHILDREN
DANGER See back panel booklet for
additional precautionary statements.
NET 16 FL OZ (1 PT) 473 mL



LF00990T000

3/5

ORTHO

SYSTEMIC INSECT KILLER

Kills from the inside

OPEN
Resealable Label
for Directions &
Precautions

Product Facts

Makes up to 16 gallons spray

KILLS INSECTS Aphids, Mites, Japanese Beetles, Leafminers, Thrips, Mealybugs, Whiteflies, Scales, Other Beetles & Caterpillars

WHERE TO USE Roses, Flowers, Shrubs & Trees

AMOUNT TO USE
• Aphids & Grasshoppers: 2 Tbs (1 fl oz) / gal water
• Japanese Beetles: 4 Tbs (2 fl oz) / gal water
• Other Listed Insects: 3 Tbs (1 1/2 fl oz) / gal water

 **Questions, Comments or Medical Information**
call 1-800-225-2883 www.ortho.com

Do not apply to plants to be used for food or feed.



©2001 The ORTHO Group
Manufactured for The ORTHO Group
P.O. Box 1749
Columbus, OH 43216
Form LB01000U000
EPA Reg. No. 239-2595
EPA Est. 239-1A-31 58996-M0-1A
Superscript is first letter of lot number
Made in USA



DIRECTIONS FOR USE

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

This product is for outdoor use only by home gardeners. It has not been tested on rare, unusual varieties; therefore, when these plants are present, it is advisable to test on a few plants before spraying large numbers. Do not apply to plants to be used for food or feed. Do not apply to American Elm, Flowering Crabapple, Sugar Maple, Red Maple, Redbud, Begonia or Weigelia as foliage injury may occur.

MIXING INSTRUCTIONS

Aphids & Grasshoppers

Amount to Use: 2 Tbs (1 fl oz) per gal of water.
Ortho® Dial 'n Spray® setting: 1 oz.

Japanese Beetles

Amount to Use: 4 Tbs (2 fl oz) per gal of water.
Ortho® Dial 'n Spray® setting: 2 oz.

Other Listed Insects

Amount to Use: 3 Tbs (1 1/2 fl oz) per gal of water.
Ortho® Dial 'n Spray® setting: 1 1/2 oz.

When using **Ortho® Dial 'n Spray®**: Set dial to the setting indicated above. Pour product into sprayer to fill jar one-quarter to one-half full. **DO NOT** add water. After spraying, unused product can be poured back into its original container.

1 Tablespoon (Tbs) = 3 teaspoons (tsp) 1 fl oz = 2 Tbs

Clean sprayer after use by flushing with water.

OTHER INSECTS CONTROLLED

Ash Plant Bug, Bagworm, Beet Armyworm, Birch Leafminer, Black Vine Weevil, Budworms, Cabbage Looper, Catalpa Sphinx Moth

(larvae), Cottonwood Leaf Beetle, Cuban Laurel Thrips, Elm Leaf Beetle, Fall Cankerworm, Fall Webworm, Fuchsia Mite, Gypsy Moth (larvae), Holly Leafminer, Lacebugs, Leafrollers, Leafhoppers, Lilac Leafminer, Maple Shoot Moth (larvae), Mimosa Webworm, Mealybugs, Nantucket Pine Tip Moth (larvae), Oak Webworm, Obscure Root Weevil, Orangestriped Oakworm, Poplar Tentmaker, Psyllids, Saddled Prominent Caterpillar, Sawflies (Dusky Birch, Blackheaded Ash, Redheaded Pine & European Pine), Scales (crawlers), Spittlebugs, Spruce Mite, Stinkbugs, Thrips, Tent Caterpillars, Two-Spotted Spider Mite, Whiteflies, Willow Leaf Beetle

HOW TO APPLY

Spray entire plant covering upper and lower leaf surfaces thoroughly.

WHEN TO APPLY

- Spray when insects are present or when feeding injury is first noticed.
- For hard to kill insects such as Mealybugs, Flower Thrips, Whiteflies, Mites & Scales, spray 2 to 3 times, waiting 7 to 10 days between applications.
- Repeat if reinfestation occurs.

SPECIAL DIRECTIONS

- **For Honeysuckle Aphid (Honeysuckle):** Spray foliage as leaves begin spring expansion. Spray 3 times, waiting 2 weeks between applications.
- **For Obscure Root Weevil (adults):** Spray foliage in late spring as soon as feeding is noticed (usually about April). Repeat every 4 weeks through September (mid-July through August are the peak feeding times).
- **For Black Vine Weevil:** Spray foliage and soil beneath plants. Begin applications in mid-June. Spray 4 times, waiting 3 weeks between applications.

COMBINATION SPRAY WITH FUNGICIDE ON ROSES

May be used together with RosePride® Rose & Shrub Disease Control or Ortho® Garden Disease Control at the rates recommended on each product label. Apply fungicide on a regular schedule to control disease, and add Systemic Insect Killer only when insect control is desired. Do not apply more than three consecutive applications in combination with any of the above fungicides.

HOW IT WORKS

Stops plant damage from a wide range of insects including mites. Quickly kills sprayed insects and continues killing insects which contact or feed on treated plants. Sprayed leaves and stems absorb Ortho® Systemic Insect Killer providing internal protection that won't wash off with rain or watering.

STORAGE AND DISPOSAL

STORAGE: Store away from heat or open flame. Keep pesticide in original container. Do not put concentrate or dilute into food or drink containers. Avoid contamination of feed and foodstuffs. Store in a cool, dry place, preferably in a locked storage area. Do not store diluted spray.

DISPOSAL: PRODUCT – Partially filled bottle may be disposed of by securely wrapping original container in several layers of newspaper and discard in trash.

CONTAINER – Do not reuse empty bottle. Rinse thoroughly before discarding in trash.

5/5

PRECAUTIONARY STATEMENTS HAZARDS TO HUMANS & DOMESTIC ANIMALS

DANGER: Causes irreversible eye damage and skin irritation. May be harmful if swallowed or absorbed through skin. Do not get in eyes, on skin, or on clothing. Wear goggles. Wash thoroughly with soap and water after handling. Remove contaminated clothing and wash before reuse.



Do not allow persons or pets to enter the treated area until sprays have dried.

FIRST AID: IF IN EYES: Hold eyelids open and flush with a steady, gentle stream of water for 15 minutes. See a physician immediately. IF ON SKIN: Wash with plenty of water. Get medical attention. IF SWALLOWED: Do not induce vomiting. Call a physician or Poison Control Center. Drink promptly a large quantity of milk, egg whites, gelatin solution, or, if these are not available, drink large quantities of water. Avoid alcohol. When handling this product, wear chemical resistant gloves, long pants, and long-sleeved shirt. When using outdoors, spray with the wind to your back and do not use when wind speeds are 10 mph or more. Wash the outside of the gloves with soap and water before removing. **Note to Physicians:** Probable mucosal damage may contraindicate the use of gastric lavage. Emergency Information call 1-800-225-2883.

ENVIRONMENTAL HAZARDS: This pesticide is toxic to birds, mammals, fish and aquatic invertebrates. Do not apply directly to water. Drift and runoff may be hazardous to aquatic organisms in neighboring areas. Do not contaminate water when disposing of equipment washwater or rinsate. Cover or soil-incorporate spills. This product is highly toxic to bees exposed to direct treatment or residues on blooming crops or weeds. Do not apply this product or allow it to drift to blooming crops or weeds if bees are visiting treatment area.

PHYSICAL OR CHEMICAL HAZARDS: Flammable. Keep away from heat and open flame.

NOTICE: Buyer assumes all risks of use, storage or handling of this product not in accordance with directions.

The ORTHO Guarantee
If for any reason you are not satisfied with this product, mail us proof of purchase to obtain a full refund of your purchase price.



Questions, Comments or Medical Information
call 1-800-225-2883 www.ortho.com

© 2001 The ORTHO Group
Manufactured for The ORTHO Group
P.O. Box 1749
Columbus, OH 43216

Form LB01000U000
EPA Reg. No. 239-2595
EPA Est. 239-1A-3¹, 58996-MO-1^A
Superscript is first letter of lot number
Made in USA

PRESS TO RESEAL

Reference No. 16



ORTHO

FREE Shaker Measuring Cup In Top

A

PRECAUTIONARY STATEMENTS

HAZARD TO HUMANS & DOMESTIC ANIMALS

CAUTION: Harmful if absorbed through skin. Avoid breathing dust. Avoid contact with skin, eyes or clothing. In case of contact, immediately flush eyes and skin with plenty of fresh water. For eyes, obtain medical attention if irritation persists. *copy*
Note to Physicians: Emergency Information - call (415) 233-3737.

ENVIRONMENTAL HAZARD

Keep out of lakes, streams or ponds. Do not contaminate water by cleaning of equipment or disposal of wastes.

Systemic chemical is absorbed by roots and moves to all parts of plant through sap stream.

Provides up to 6 weeks protection against listed insects.

DIRECTIONS FOR USE

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

READ ENTIRE LABEL. USE STRICTLY IN ACCORDANCE WITH LABEL PRECAUTIONARY STATEMENTS AND DIRECTIONS.

ORTHO Granules contains an effective systemic insecticide, acephate. It provides the proper amount of systemic insecticide necessary to protect plants from the damage normally caused by sucking insects (aphids, leafhoppers, leafminers, Cuban laurel thrips) and certain chewing insects (leafminers, leaf beetles, leaf-tiers and worms) as listed.

Systemic means that the insecticide is actually absorbed into the plant through the root system and then moves internally through the sap stream into the branches, leaves and new growth.

ORTHO Granules protects against insects for up to 6 weeks. It cannot be washed off by rain or sprinkling since the protection is internal. This unique action protects all surface areas, including undersides of leaves. Even new growth is fully protected from insect damage.

DIRECTIONS

ORTHO Granules, when used as directed, kills the following insects on roses and other flowers, shrubs, and small trees as listed below:

- | | |
|-------------------------|--|
| Insect | Hests |
| Aphids (Plant Lice) | Roses*, Viburnum, Chrysanthemum, Birch, Snapdragon, Petunia, Ageratum, Soliva, Spirea, Photinia, Crapemyrtle |
| Leafminers (See NOTE) | Holly, Yaupeñ, Birch, Zinnia |
| Leafhoppers | Dahlia**, Aster, Marigold, Zinnia |
| Leafbugs | Sycamore**, Pyracantha**, Azalea |
| Leaf-tier (Larvae) | Cherry Laurel* |
| Maple Shoot Moth | Maple* |
| Cuban Laurel Thrips | Cuban Laurel (Ficus) |
| Dusky Birch Sawfly | Birch |
| Laurel Beetles (Larvae) | Elin, Willow |
| Loopers | Petunia, Dahlia* |

ACCEPTED
JUL 28 1988
Checked by: [illegible]
EPA Reg. No. 233-2472

See back panel for additional precautionary statements.

Keep out of reach of children

CAUTION

Protects — Roses, Flowers, Shrubs, Trees
Kills both chewing and sucking insects (as listed)
New Systemic Insecticide

Protects Plants up to 6 weeks.

Active Ingredient *2*
*Acephate (O,S-Dimethyl acetylphosphorodithioate) 1.5%
Inert Ingredients *98.5%*
By Wt. 98.5%
U.S. Patent No. 3,716,600

*Apply 2 applications in the spring (6 weeks apart) at the first sign of new growth and one additional application in the fall to control aphids. Do not exceed 3 applications per year. A slight marginal tip burn may result on leaves of sensitive varieties of roses.

**Do not exceed 3 applications per year.

WHEN TO USE

ORTHO Granules should be applied when plants first begin to grow in the spring. Do not apply ORTHO Granules to newly planted roses in sandy soils.

NOTE: For Birch Leafminer control, apply in early spring when leaves are unfolding (leaf puncture stage), or at the earliest sign of leaf damage. Repeat application in 4 to 6 weeks for second generation.

HOW TO USE

ON ESTABLISHED ROSES: At first signs of new growth, spread 1 shaker cup evenly over an area 3' x 3' (9 sq. ft.) around the base of each plant and work into 1 to 2 inches of soil. Water thoroughly to carry the systemic control deep into the root zone. Repeat application at 4 to 6 weeks if necessary in the spring and again in the fall. Do not make multiple application in the spring on sandy soils, as injury may occur. Do not get granules on wet foliage.

WHEN PLANTING NEW ROSE BUSHES: Do not apply to newly planted roses until they have become well established, or have been planted in the ground for 3 months. Then proceed the same as for Established Roses.

ON FLOWERS: Apply 3 shaker cups per each 25 sq. ft. (5' x 5') of bed area. Work into top 1 to 2 inches of soil. Plant seed or set plants and water thoroughly. Do not get on foliage when foliage is wet.

ON ORNAMENTAL SHRUBS AND SMALL TREES (Under 10 to 12 Feet High): Apply 3 shaker cups per each 25 sq. ft. (5' x 5') over the root zone of plants to be treated. Distribute the required amount evenly from the base to the drip line on all sides of the plant. In cultivated areas, work into the top 1 to 2 inches of soil and water thoroughly. In lawn areas, water thoroughly after application to carry the systemic action into the root zone. Do not get granules on wet foliage.

STORAGE AND DISPOSAL

Keep product in original container. Do not contaminate food or feed by storage, disposal or cleaning of equipment. Do not reuse empty container. Wrap container and put in trash collection.

NOTICE: Buyer assumes all responsibility for safety and use not in accordance with directions.

CONFIDENTIAL

PROPERTY OF

CHEVRON CHEMICAL COMPANY

MADE IN U.S.A. ACCEPTED BY EPA

Chevron Chemical Company
Ortho Consumer Products Division
San Francisco 6A-94119 Richmond CA 94804
Product 5439 Made in U.S.A.
EPA Reg. No. 233-2472

BEST AVAILABLE COPY

NET WT. 5 LBS.

COPY A

When handling this product, wear chemical resistant gloves, long pants, and long sleeved shirt. Wash the outside of the gloves with soap and water before removing.

COPY B

STORAGE: Keep pesticide in original container. Do not put into food or drink containers. Avoid contamination of feed and foodstuffs. Store in a cool, dry place, preferably in a locked storage area.

DISPOSAL: **PRODUCT**--Partially filled canister may be disposed of by securely wrapping original container in several layers of newspaper and discard in trash. **CONTAINER**--Do not reuse empty canister. Discard canister in trash.

COPY C

NOTE: THIS PACKAGE IS FILLED TO PROPER WEIGHT, BUT VARIATION IN PRODUCT DENSITY MAY CAUSE VARYING FILL LEVELS IN CAN.

TO OPEN--LIFT OUT MEASURING CUP WITH SCREW-DRIVER--REPLACE CUP FIRMLY AFTER USE.

CONFIDENTIAL

PROPERTY OF

CHEVRON CHEMICAL COMPANY

UNTIL ACCEPTED BY EPA

WLC:rm 6/51
5/9/88



ORTHO

FREE
Shaker
Measuring Cup
In Top

Pm14

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STORAGE AND DISPOSAL

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NOTICE: Buyer assumes all responsibility for safety and use not in accordance with directions.

CONFIDENTIAL

PROPERTY OF

CHEVRON CHEMICAL COMPANY

MADE IN U.S.A.

Chevron Chemical Company
Ortho Consumer Products Division
San Francisco - CA - 94119
Product 5439
Form 9605-A
EPA Reg. No. 239-2472

1/2

BEST AVAILABLE COPY

7-28-88

239-2472

ORTHENE® Granules

Protects — Roses, Flowers, Shrubs, Trees
Kills both chewing and sucking insects (as listed)
New Systemic Insecticide
Protects Plants up to 6 weeks.

← copy c

Active Ingredient: Acephate (O,Sdimethyl acetylphosphorodithioate) 1.5%
Inert Ingredients 98.5%
By Wt. 98.5%
*U.S. Patent No. 3,716,600

copy

Keep out of reach of children

CAUTION

See back panel for additional precautionary statements.

ACCEPTED
JUL 28 1988
Under the Federal Insecticide, Fungicide, and Rodenticide Act as amended for the pesticide registered under 2472
EPA Reg. No. 239-2472

NET WT. 5 LBS.

PRECAUTIONARY STATEMENTS
HAZARD TO HUMANS & DOMESTIC ANIMALS
CAUTION:
Harmful if absorbed through skin. Avoid breathing dust. Avoid contact with skin, eyes or clothing. In case of contact, immediately flush eyes and skin with plenty of fresh water. For eyes obtain medical attention if irritation persists. ← copy
Note to Physicians: Emergency Information - call (415) 233-3737.
ENVIRONMENTAL HAZARD
Keep out of lakes, streams or ponds. Do not contaminate water by cleaning of equipment or disposal of wastes.

Systemic chemical is absorbed by roots and moves to all parts of plant through sap stream.
Provides up to 6 weeks protection against listed insects.

DIRECTIONS FOR USE
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READ ENTIRE LABEL. USE STRICTLY IN ACCORDANCE WITH LABEL PRECAUTIONARY STATEMENTS AND DIRECTIONS.

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Systemic means that the insecticide is actually absorbed into the plant through the root system and then moves internally through the sap stream into the branches, leaves and new growth.
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- | | |
|-----------------------|--|
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| Leafminers (See NOTE) | Holly, Yaupein, Birch, Zinnia |
| Leafhoppers | Dahlia**, Aster, Marigold, Zinnia |
| Lacebugs | Sycamore**, Pyracantha**, Azalea |
| Leaflier (Larvae) | Cherry Laurel** |
| Maple Shoot Moth | Maple* |
| Cuban Laurel Thrips | Cuban laurel (Ficus) |
| Dusky Birch Sawfly | Birch |
| Leaf Beetles (Larvae) | Elm, Willow |
| Loopers | Petunia, Dahlia** |

COPY A

When handling this product, wear chemical resistant gloves, long pants, and long sleeved shirt. Wash the outside of the gloves with soap and water before removing.

COPY B

STORAGE: Keep pesticide in original container. Do not put into food or drink containers. Avoid contamination of feed and foodstuffs. Store in a cool, dry place, preferably in a locked storage area.

DISPOSAL: **PRODUCT**--Partially filled canister may be disposed of by securely wrapping original container in several layers of newspaper and discard in trash. **CONTAINER**--Do not reuse empty canister. Discard canister in trash.

COPY C

NOTE: THIS PACKAGE IS FILLED TO PROPER WEIGHT, BUT VARIATION IN PRODUCT DENSITY MAY CAUSE VARYING FILL LEVELS IN CAN.

TO OPEN--LIFT OUT MEASURING CUP WITH SCREW-DRIVER--REPLACE CUP FIRMLY AFTER USE.

CONFIDENTIAL

PROPERTY OF

CHEVRON CHEMICAL COMPANY

UNTIL ACCEPTED BY EPA

WLC:rm 6/51
5/9/88

Reference No. 17a



Details for ORTHENE MFG

EPA Contact Information

You will need Adobe Reader to view some of the files on this page. See [EPA's PDF page](#) to learn more.

Provided below is the information for the product you selected. To view the label, click on the date in the **Accepted Date** Field. The latest label is at the top of the list.

EPA Registration Number: 62499-26
Company Name: CHEVRON CHEMICAL CO
Division Name: C/O THOMAS H. PICKENS
Address: 6001 BOLLINGER CANYON RD
P.O. Box: 5047
City, State Zip: SAN RAMON, CA 945830947
First Registered Date: AUGUST 04, 1989
Current Status (Date): Cancelled (JUNE 16, 1992)
Restricted Use: NO

Labels

Data Comp

Chemical

Alt Brand Name

Inactive Alt Brand Name

Transfer History

Site

Pest

EPA Reg. No.	Product Name	Accepted Date
239-2507	ORTHENE MFG	April 12, 1984 (PDE)

1 - 1

Version: 2.4.1.1

TEMPLATE UPDATED ON
11 DECEMBER 2016

Reference No. 17b

PRECAUTIONARY STATEMENTS
HAZARDS TO HUMANS & DOMESTIC ANIMALS
CAUTION

For information on **Mitigation** by rotation and contact with water, consult the label. Avoid breathing dust or spray or if swallowed, get a large amount of water to drink, make person vomit and call a doctor in case of pain. If on skin, wash with soap and water for 15 minutes. Irritation to eyes, use a doctor. Wash face or clothing if after handling.

How to Pesticide: Emergency information - call 1-800-233-3333. Always use a caution label which is signed and approved by EPA. Always use caution and label. 2-DAT may also be used in conjunction with other pesticides that should not be used alone.

ENVIRONMENTAL HAZARDS

This product is highly toxic to birds, aquatic life, honey bees, and other beneficial insects. For other information, refer to the Toxicology Cooperative Agricultural Extension Service.

INSTRUCTIONS FOR FORMULATION

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

READ ENTIRE LABEL, USE STRICTLY IN ACCORDANCE WITH PRECAUTIONARY STATEMENTS AND DIRECTIONS, AND WITH APPLICABLE STATE AND FEDERAL REGULATIONS.

STORAGE AND DISPOSAL

PROHIBITIONS

Do not contaminate water, food or feed by storage, disposal or cleaning of equipment. Observe disposal instructions. Do not reuse empty containers.

STORAGE

Keep closed in original container. Do not put concentrate or concentrate into food or drink containers. Store in cool, dry place. Protect from excessive heat. Do not store near food or feedstuffs. Do not store or transport near food or feed.

PESTICIDE DISPOSAL

Read and follow instructions on label which may be used according to label instructions. Do not use the original container for any other purpose. Follow applicable Federal, State or local procedures.

CONTAINER DISPOSAL

Completely empty container and all contents before recycling or disposal. Do not reuse for any other purpose. Do not use for any other purpose. Do not use for any other purpose.

CHEVRON
 COPY A
 Causes

ORTHO
ORTHENE®
MFG

AN INSECTICIDE FOR FORMULATING USE ONLY

THIS PRODUCT IS FOR USE IN THE FURTHER PREPARATION OF INSECTICIDE PRODUCTS. CONTACT CHEVRON CHEMICAL COMPANY FOR SPECIFIC FORMULATING INFORMATION. DO NOT USE FOR ANY OTHER PURPOSES. Products formulated with ORTHENE MFG will require registration with the Environmental Protection Agency.

Active Ingredient: Thiophanate-Methyl (0.5 Dimethyl acetylphosphorothioic acid) 25%
 Inert Ingredients: 75%
 U.S. Pat. No. 2,716,600

KEEP OUT OF REACH OF CHILDREN
CAUTION
 SEE SIDE PANEL FOR ADDITIONAL PRECAUTIONARY STATEMENTS

REGISTERED
 WITH CHEVRON
 IN EPA Letter 1987-1

339-2507

NET WEIGHT _____

BEST DOCUMENT AVAILABLE

Chevron Chemical Company
 Ortho Agricultural Products Division
 San Francisco, CA 94177-1104 Richmond, CA 94804-0036
 Product 3509 Made in U.S.A.
 Form 10250-A
 EPA Reg. No. 239-06W

CONDITIONS OF SALE: Chevron Chemical Company warrants that this material conforms to the chemical description on the label. Chevron Chemical Company neither makes nor authorizes any agent or representative to make any other warranty of fitness or of MERCHANTABILITY, guarantee or representation, express or implied, concerning this material.

U.S. ENVIRONMENTAL PROTECTION AGENCY OFFICE OF PESTICIDES PROGRAMS REGISTRATION DIVISION (WH 527) WASHINGTON, D.C. 20460	EPA REGISTRATION NO.	DATE OF ISSUANCE
	TERM OF ISSUANCE	
NOTICE OF PESTICIDE: <input checked="" type="checkbox"/> REGISTRATION <input type="checkbox"/> RENEWAL <i>(Under the Federal Insecticide, Fungicide, and Rodenticide Act, as amended)</i>	NAME OF PESTICIDE PRODUCT	
	NAME AND ADDRESS OF REGISTRANT (Include ZIP code)	
<p>NOTE: Changes in labeling formula differing in substance from that accepted in connection with this registration must be submitted to and accepted by the Registration Division prior to use of the label in commerce. In any correspondence on this product always refer to the above U.S. EPA registration number.</p> <p>On the basis of information furnished by the registrant, the above named pesticide is hereby Registered/Reregistered under the Federal Insecticide, Fungicide, and Rodenticide Act.</p> <p>A copy of the labeling accepted in connection with this Registration/Reregistration is returned herewith.</p> <p>Registration is in no way to be construed as an indorsement or approval of this product by this Agency. In order to protect health and the environment, the Administrator, on his motion, may at any time suspend or cancel the registration of a pesticide in accordance with the Act. The acceptance of any name in connection with the registration of a product under this Act is not to be construed as giving the registrant a right to exclusive use of the name or to its use if it has been covered by others.</p>		
<input type="checkbox"/> ATTACHMENT IS APPLICABLE		
SIGNATURE OF APPROVING OFFICIAL		DATE

166/18 11/6, 64/1

4. Subject to the approval of the Labeling Office, you
release the product for shipment. See also the 270 enclosure for a further
description of final printed labeling.

If these conditions are not complied with, the registration will be
subject to cancellation in accordance with FDCA sec. 305. Your release for
shipment of the product constitutes acceptance of these conditions.

A stamped copy of the label is enclosed for your records.

WLM
William H. Miller
Product Manager (16)
Institution-Pediatric Branch
Registration Division TG-767

Enclosures

UPL 2007-01113 - 312 of 340

Reference No. 18

1052
Pm/6 239-2453

Ortho
ORTHENE®
Systemic Rose & Flower Care 8-8-8

FREE
 Shaker
 Measuring Cup
 In Top

Protects and Feeds—Roses, Flowers, Shrubs, Trees
Kills both chewing and sucking insects (as listed)
New Systemic Insecticide
Protects Plants up to 6 Weeks

INGREDIENT STATEMENT AS AN INSECTICIDE

Active Ingredient (O,S dimethyl acetylphosphoramide dihydrate) 1.5%
 Inert Ingredients 98.5%
 —U.S. Patent No. 3,716,600

Keep out of reach of children

CAUTION

See back panel for additional precautionary statements.

NET WT. 5 LBS.



PRECAUTIONARY STATEMENTS
HAZARD TO HUMANS AND DOMESTIC ANIMALS
CAUTION: Harmful if absorbed through skin. Avoid breathing dust. Avoid contact with skin, eyes or clothing. In case of contact, immediately flush eyes and skin with plenty of fresh water. For eyes, obtain medical attention if irritation persists. ← COPY A
ENVIRONMENTAL HAZARD
 Keep out of lakes, streams or ponds. Do not contaminate water by cleaning of equipment or disposal of wastes.

GUARANTEED FERTILIZER ANALYSIS

Total Nitrogen (N)	8%
4.5% Ammoniacal Nitrogen	
3.5% Nitrate Nitrogen	8%
Available Phosphoric Acid (P ₂ O ₅)	8%
Soluble Potash (K ₂ O)	8%
Calcium (Ca)	10%
Magnesium (Mg)	5%

Primary Nutrients from Ammonium Nitrate, Ammonium Phosphate, Ammoniated Superphosphate and Muriate of Potash
 Secondary and Trace Nutrients from Superphosphate and Dolomitic Limestone
 Potential Basicity 600 lbs. Calcium Carbonate Equivalent per ton.

Systemic chemical is absorbed by roots and moves through to all parts of plant through sap stream.

DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.
 READ ENTIRE LABEL. USE STRICTLY IN ACCORDANCE WITH LABEL PRECAUTIONARY STATEMENTS AND DIRECTIONS.
 ORTHENE Systemic Rose & Flower Care is an effective systemic insecticide combined with a fertilizer containing the three essential plant food elements, Nitrogen, Phosphate and Potash. This combination provides the proper amount of plant food and systemic insecticide necessary to maintain strong vigorous plants which are protected from the damage normally caused by sucking insects (aphids, lacebugs, leafhoppers, Cuban laurel thrips) and certain chewing insects (leafminers, leaf beetles, leathers and sawflies).
 Systemic means that the insecticide is actually absorbed into the plant through the root system and then moves internally through the sap stream into the branches, leaves and new growth.
 ORTHENE Systemic Rose & Flower Care protects against insects for up to 6 weeks.
 It cannot be washed off by rain or sprinkling since the protection is internal. This unique action protects all surface areas, including undersides of leaves. Even new growth is fully protected from insect damage.
 ORTHENE Systemic Rose & Flower Care, when used as directed, kills the following insects on roses and other flowers, shrubs and small trees as listed below:

Insect **Plant (See Note)**

Leafminers (See NOTE)
 Aphids
 Lacebugs
 Leaf beetles
 Leafhoppers
 Lacebugs
 Leaf beetles
 Leafhoppers
 Sawflies
 Leaf beetles (larvae)
 Leaf beetles (adults)
 Oblique Root Weevil (adults)

Plant
 Rose
 Azalea
 Holly
 Magnolia
 Cherry Laurel
 Maple
 Dogwood
 Elm
 Willow
 Yew
 Catalpa
 Ailanthus
 Rhododendron

*Apply 2 applications in the spring (6 weeks apart) at the first sign of new growth and one application in the fall. Do not exceed 3 applications per year. A slight marginal top burn may result on flowers of sensitive varieties.
 **Apply 3 applications per year.
 ***Apply in late spring (May) and repeat at 4 to 6 week intervals through September.

WHEN TO USE

ORTHENE Systemic Rose & Flower Care should be applied when plants first begin to grow in the spring. In addition to control of insects, your plants will be provided with the proper amount of plant food necessary to maintain strong, vigorous growth. Do not apply ORTHENE Systemic Rose & Flower Care to newly planted roses in sandy soils.

HOW TO USE

For best results, apply ORTHENE Systemic Rose & Flower Care in early spring when leaves are beginning to put out (before stage), or at the earliest sign of leaf damage. Repeat application in 1 to 8 weeks for second generation.
ON ESTABLISHED ROSES: At first signs of new growth, spread 1 shaker cup (3.3 oz.) evenly over an area 3' x 3' (9 sq. ft.) around the base of each plant and work into 1 to 2 inches of soil. Water thoroughly to carry the systemic control deep into the root zone. Repeat application at 4 to 6 weeks, if necessary in the spring and again in the fall. Do not make multiple application in the spring on sandy soils as injury may occur. Do not get granules on wet foliage.

WHEN PLANTING NEW ROSE BUSHES

Do not apply to newly planted roses until they have become well established, or have been planted in the ground for 3 months. Then proceed the same as for Established Roses.

ON FLOWERS:

Apply 3 shaker cups (10 oz.) per each 2' x 2' sq. ft. (5' x 5') of bed area. Work into top 1 to 2 inches of soil. Plant used or set plants and water thoroughly. Do not apply additional fertilizer for about 6 weeks. Do not get on foliage when foliage is wet.

ON ORNAMENTAL SHRUBS AND SMALL TREES (Under 10 to 12 Feet High):

Apply 3 shaker cups (10 oz.) per each 25 sq. ft. (5' x 5') over the root zone of plants to be treated. Distribute the required amount evenly from the top 1 to 2 inches of soil and water thoroughly. Do not get granules on wet foliage. Do not get granules on wet foliage.

STORAGE AND DISPOSAL

Keep product in original container. Do not contaminate food or feed by storage or disposal. Wash thoroughly with soap and water before reuse. Do not reuse empty container. Recycle when possible. Do not burn.

NOTICE: Buyer assumes all responsibility for safety and use not in accordance with directions.

Chemron Chemical Company
 2400 Stevenson Avenue, Richmond, CA 94807
 Product 5354 Made in U.S.A.
 Form 9275-B
 EPA Reg. No. 239-2453

and long sleeved shirt. Wash the outside of the gloves with soap and water before removing.

COPY B

STORAGE: Keep pesticide in original container. Do not put into food or drink containers. Avoid contamination of feed and foodstuffs. Store in a cool, dry place, preferably in a locked storage area.
DISPOSAL: PRODUCT--Partially filled canister may be disposed of by securely wrapping original container in several layers of newspaper and discard in trash. CONTAINER--Do not reuse empty canister. Discard canister in trash.

COPY C

NOTE: THIS PACKAGE IS FILLED TO PROPER WEIGHT, BUT VARIATION IN PRODUCT DENSITY MAY CAUSE VARYING FILL LEVELS IN CAN.

TO OPEN--LIFT OUT MEASURING CUP WITH SCREW-DRIVER--REPLACE CUP FIRMLY AFTER USE.

CONFIDENTIAL

PROPERTY OF
CHEVRON CHEMICAL COMPANY
UNTIL ACCEPTED BY EPA

MLC:rm 6/51
5/9/88

Reg. no: 239-2453



ORTHO

FREE
Shaker
Measuring Cup
In Top

ORTHENE[®] Systemic Rose & Flower Care 8-8-8

Protects and Feeds—Roses, Flowers, Shrubs, Trees
Kills both chewing and sucking insects (as listed)

New Systemic Insecticide
Protects Plants up to 6 Weeks

COPY C →

INGREDIENT STATEMENT AS AN INSECTICIDE

Active ingredient: **d**
*Azinphos 0.5 dimethyl acetylphosphoramidodithioate
Inert ingredients
EPA Patent No. 3,716,600

By Wt.
1.5%
98.5%

Keep out of reach of children

CAUTION

See back panel for additional precautionary statements.

NET WT. 5 LBS.



PRECAUTIONARY STATEMENTS HAZARD TO HUMANS AND DOMESTIC ANIMALS

CAUTION:

Keep out of reach of children. Avoid breathing dust. Avoid contact with skin. If contact occurs, wash with plenty of water. For eyes, obtain medical attention. See back panel for first aid instructions. ← COPY A

Note to Physicians: See medical information, call 415-239-2453

ENVIRONMENTAL HAZARD

Keep out of reach of children and pets. Do not contaminate water, food, or feed. Do not apply to lawns or gardens.

GUARANTEED FERTILIZER ANALYSIS

Total Nitrogen, N
4.5% Ammoniacal Nitrogen
3.5% Nitrate Nitrogen
Available Phosphoric Acid, P₂O₅
Soluble Potash, K₂O
Calcium, Ca
Magnesium, Mg

Primary Nutrients from Ammonium Nitrate, Ammonium Phosphate, Ammoniated Superphosphate and Muriate of Potash
Secondary and Trace Nutrients from Superphosphate and Limestone

Potential Basicity 600 lbs. Calcium Carbonate Equivalent per ton

Systemic chemical is absorbed by roots and moves to all parts of plant through sap stream. Provides up to 6 weeks protection against listed insects.

DIRECTIONS FOR USE

Apply to soil at 1000-2000 ppm to use this product in a broadcast manner.

READ ENTIRE LABEL USE STRICTLY IN ACCORDANCE WITH LABEL CAUTIONARY STATEMENTS AND DIRECTIONS.

Orthene Systemic Rose & Flower Care is an effective systemic insecticide which kills both chewing and sucking insects. This systemic insecticide is absorbed by the roots of plants which are protected from the damage caused by chewing insects (beetles, weevils, leaf beetles, etc.) and sucking insects (aphids, mealybugs, leafhoppers, etc.). Orthene Systemic Rose & Flower Care is not a contact insecticide and does not kill insects that are on the surface of the plant.

Orthene Systemic Rose & Flower Care is actually absorbed into the plant through the roots and then moves internally through the plant to protect it from insects and diseases.

ORTHENE Systemic Rose & Flower Care protects against insects 6 weeks.

It cannot be washed off by rain or sprinkling since the product is internal. Orthene Systemic Rose & Flower Care protects all surface areas, including new growth. Even new growth is fully protected from insect damage. Orthene Systemic Rose & Flower Care, when used as directed, will protect roses and other flowers, shrubs and small trees.

Reference No. 19a



Details for ORTHENEX INSECT & DISEASE CONTROL FORMULA II

EPA Contact Information

You will need Adobe Reader to view some of the files on this page. See [EPA's PDF page](#) to learn more.

Provided below is the information for the product you selected. To view the label, click on the date in the **Accepted Date** Field. The latest label is at the top of the list.

EPA Registration Number: 239-2574

Company Name: THE SCOTTS COMPANY

Division Name: D/B/A THE ORTHO GROUP

Address: 14111 SCOTTSLAWN ROAD

City, State Zip: MARYSVILLE, OH 43041

First Registered Date: NOVEMBER 20, 1989

Current Status (Date): Cancelled (JULY 29, 1999)

Restricted Use: NO

Labels

Data Comp

Chemical

Alt Brand Name

Inactive Alt Brand Name

Transfer History

Site

Pest

EPA Reg. No.	Product Name	Accepted Date
239-2574	ORTHENEX INSECT & DISEASE CONTROL FORMULA II	November 12, 1987 (PDF)

1 - 1

Version: 2.4.1.1

TEMPLATE UPDATED ON
11 DECEMBER 2016

Reference No. 19b

US ENVIRONMENTAL PROTECTION AGENCY OFFICE OF PESTICIDES PROGRAMS REGISTRATION DIVISION (75-757) WASHINGTON, DC 20460	EPA REGISTRATION NO.	DATE OF ISSUANCE
	239-2574	November 12, 1987
NOTICE OF PESTICIDE: <input checked="" type="checkbox"/> REGISTRATION <input type="checkbox"/> Reregistration (Under the Federal Insecticide, Fungicide, and Rodenticide Act, as amended)	TERM OF ISSUANCE	
	Until Reregistration	
	NAME OF PESTICIDE PRODUCT	
	Ortho Orthenex Insect & Disease Control Formula II	
NAME AND ADDRESS OF REGISTRANT (Include ZIP code)		
Chevron Chemical Company Ortho Consumer Products Division P.O. Box 4010 Richmond, CA 94806-0010		
<p>NOTE: Changes in labeling formula differing in substance from that accepted in connection with this registration must be submitted to and accepted by the Registration Division prior to use of the label in commerce. In any correspondence on this product always refer to the above U.S. EPA registration number.</p> <p>On the basis of information furnished by the registrant, the above named pesticide is hereby Registered/Reregistered under the Federal Insecticide, Fungicide, and Rodenticide Act.</p> <p>A copy of the labeling accepted in connection with this Registration/Reregistration is returned herewith.</p> <p>Registration is in no way to be construed as an indorsement or approval of this product by this Agency. In order to protect health and the environment, the Administrator, on his motion, may at any time suspend or cancel the registration of a pesticide in accordance with the Act. The acceptance of any name in connection with the registration of a product under this Act is not to be construed as giving the registrant a right to exclusive use of the name or to its use if it has been covered by others.</p> <p>This product is conditionally registered in accordance with FIFRA section 3(c)(7)(A) provided that you:</p> <ol style="list-style-type: none"> 1. Submit/cite all data required for registration/reregistration of your product under FIFRA section 3(c)(5) when the Agency requires all registrants of similar products to submit such data. 2. Make the labeling changes listed below before you release the product for shipment: <ol style="list-style-type: none"> a. Add the phrase "EPA Registration No. 239-2574." b. On the top of the front panel of your label add the following statement: Not to be sold, offered for sale, held for sale, shipped, delivered for shipment, offered for delivery, or received after December 31, 1988. Not for use after March 31, 1989. <p><input type="checkbox"/> ATTACHMENT IS APPLICABLE</p>		
SIGNATURE OF APPROVING OFFICIAL	DATE	
Dennis H. Edwards	11/12/87	

EPA Form 8570-6 (Rev. 5-76)

PREVIOUS EDITION MAY BE USED UNTIL SUPPLY IS EXHAUSTED.

R:15995;Edwards:E-4;KENCO:11/09/87:11/19/87:aw:JH:aw

R:10206;Edwards:E-4;KENCO:12/03/87:12/15/87:CB:lf:dd:rw:

c. In the beginning of your Directions for Use add:

Skin contact with this pesticide may be hazardous; wear chemical resistant gloves when mixing, loading, or applying this product.

This statement may appear on a sticker rather than on a supplemental label. The terms mixing and loading may be omitted for products that do not require mixing or loading.

3. Submit five (5) copies of your final printed labeling before you release the product for shipment.

4. On April 21 and September 17, 1986 EPA issued Data Call-In Notices to Rohm & Haas Company and Makhteshim-Agan, the basic manufacturers of dicofol, requiring additional data to be submitted by certain deadlines to support the registration of pesticide products containing dicofol. The data required include environmental monitoring and certain avian studies. These data requirements must be satisfied by the applicable deadlines. If these data requirements are not met in a timely manner by you or some other person, this registration will be subject to cancellation under FIFRA section 6(e).

5. The Office of Endangered Species (OES) has issued several Biological Opinions concerning the possible impact on threatened and endangered species from the use of pesticide products containing dicofol. You must amend the registration of your product to reflect any restrictions on the sale, distribution, or use of dicofol products required or recommended in any future Biological Opinion issued by OES. You must agree to carry out such other actions, including submission to EPA of additional data, as are required or recommended in a Biological Opinion issued by OES regarding dicofol.

6. The continued registration of this product is conditioned on timely compliance with the requirements of EPA's Notice of Intent to Cancel published in the *Federal Register* on May 29, 1986 (51 FR 19508).

If these conditions are not complied with, the registration will be subject to cancellation in accordance with FIFRA section 6(e). Your release for shipment of the product constitutes acceptance of these conditions.

A stamped copy of the label is enclosed for your records.

Dennis M. Edwards, Jr.
Product Manager (12)
Insecticide-Rodenticide Branch
Registration Division (TS-767C)

Enclosure

ORTHENEX® Insect & Disease Control

Formula II

HAZARDS TO HUMANS & DOMESTIC ANIMALS

DANGER: Causes irreversible eye damage. Do not get in eyes. Wear goggles or face shield when handling. If inhaled or swallowed, avoid contact with skin or clothing. Avoid breathing vapors or spray mist. **STATEMENT OF PRACTICAL TREATMENT:** In case of eye contact, immediately flush eyes with fresh water for 15 minutes and get medical attention. If swallowed, promptly drink a large quantity of water and induce vomiting. Get medical attention immediately. In case of skin contact, wash skin with plenty of soap and water. If inhaled, remove person from exposure area. **NOTE to Physicians:** Emergency information—call (415) 233-3737.

ENVIRONMENTAL HAZARDS: This pesticide is toxic to birds. Do not apply directly to water or wetlands. Do not contaminate water by cleaning of equipment or disposal of wastes. Cover or soil-incorporate spills. This product is highly toxic to bees exposed to direct treatment or residues on blooming crops or weeds if bees are visiting treatment area.

PHYSICAL OR CHEMICAL HAZARDS: Do not use or store near heat or open flame.

DIRECTIONS FOR USE: It is a violation of federal law to use this product in a manner inconsistent with its labeling.

READ ENTIRE LABEL. USE STRICTLY IN ACCORDANCE WITH LABEL PRECAUTIONARY STATEMENTS AND DIRECTIONS.

ORTHENEX Insect & Disease Control effectively controls many of the insects, mites and diseases that attack roses, flowers and ornamentals. Systemic action enables part of the insecticide to be absorbed internally through leaf and stem surfaces to provide longer, more effective protection.

GENERAL DIRECTIONS: Skin contact with this pesticide may be hazardous; wear chemical resistant gloves when applying this product. Shake well before using. Use ORTHENEX Insect & Disease Control at the rate of 2 Tablespoons (1 fl. oz.) per gallon of water. Spray thoroughly to cover all plant surfaces (both upper and lower leaf surfaces) including new growth. May be applied with an ORTHO SPRAY-EITE, ORTHO Lawn & Garden Sprayer (if appropriate setting), tank-type or power sprayer. Does not require

the addition of wetting agents.

FOR INSECT CONTROL—Roses, Flowers and Ornamentals; Aphids, Flower Thrips, Lacebugs, Leafhoppers, Budworms, Leaf-miners, Spittlebugs, Flecked Mite and Twospotted Mites; Spray when insects are present or when feeding injury is first noted. Repeat if reinfestation occurs. **NOTE:** Two or three applications at a 7 to 10 day interval may be required to control Twospotted Mites.

FOR DISEASE CONTROL—Black Spot on Roses, Rust on Asters and Carnations, Powdery Mildew on Roses, Calandula, Lippia, Gerbera, Dahlia, Eucalyptus, Jerusalem Thorn, Lilac, Philoxera, Photinia, Snapdragon and Zinnia. **Prevention:** Begin spraying when first signs of disease appear. Apply every 7 to 10 days during the spring and fall or whenever weather conditions encourage the spread of disease. **NOTE:** If disease is already established, follow a 7 day application schedule until control is achieved.

STORAGE AND DISPOSAL: Keep pesticide in original container. Do not put concentrate or dilute into food or drink containers. Avoid contamination of feed and food-stuffs. Store in a cool, dry place, preferably in a locked storage area. Do not store below 25°F. Do not store diluted spray.

DISPOSAL: PRODUCT—Partially filled bottle may be disposed of by securely wrapping original container in several layers of newspaper and discard in trash. **CONTAINER—**Do not reuse empty bottle. Rinse thoroughly before discarding in trash.

NOTICE: Buyer assumes all responsibility for safety and use not in accordance with directions.

Chevron Chemical Company © 1987
 Ortho Consumer Products Division
 San Francisco CA 94120-7144
 Product 5311 Made in U.S.A.
 Form CO-A
 EPA Reg. No. 233-1
 EPA Est. 233-MD-1



ORTHE

**ORTHE
 Insect &
 Control
 Formula**

Controls Black Spot, Rust, Powdery Mite & Other Listed Insects. On Roses, Flowers
 Contains ORTHENEX® Systemic Insecticide
 KETHANE® Miticide



Active Ingredients
 * Acephate (C)
 ** Fipronil (N)
 Imidacloprid
 Dicyclofopamil
 Inert Ingredients
 ORTHENEX®
 KETHANE®
 Inert Ingredients

Keep out of reach
DANGER
 See side panel for
NET CONTENTS

ACCEPTED
 with COMMENTS
 in EPA Letter Dated:

NOV 12 1987

Under
 Fungicide
 as now
 registered
 239-2504

BEST AVAILABLE COPY

CONFIDENTIAL
 PROPERTY OF
CHEVRON CHEMICAL
 UNTIL ACCEPTED

Reference No. 20

239-2594

04-09-1999

12 B 10-3

14

Please read instructions on reverse before completing form.

Form Approved. OMB No. 2070-0060. Approval expires 2-28-95

	United States Environmental Protection Agency Washington, DC 20460	<input type="checkbox"/> Registration <input type="checkbox"/> Amendment <input checked="" type="checkbox"/> Other	OPP Identifier Number 264502
	Application for Pesticide - Section I		

1. Company/Product Number 239-2594	2. EPA Product Manager TINA LEVINE	3. Proposed Classification <input type="checkbox"/> None <input type="checkbox"/> Restricted
4. Company/Product (Name) ORTHENEX Insect & Disease Control Formula III	PM# 04	
5. Name and Address of Applicant (Include ZIP Code) The SOLARIS Group of Monsanto P. O. Box 5006 San Ramon, CA 94583-0906 <input type="checkbox"/> Check if this is a new address		6. Expedited Review. In accordance with FIFRA Section 3(c)(3) (b)(i), my product is similar or identical in composition and labeling to: EPA Reg. No. _____ Product Name _____

Section - II

<input type="checkbox"/> Amendment - Explain below.	<input type="checkbox"/> Final printed labels in response to Agency letter dated _____	NOTIFICATION APR 9 1999
<input type="checkbox"/> Resubmission in response to Agency letter dated _____	<input type="checkbox"/> "Me Too" Application.	
<input checked="" type="checkbox"/> Notification - Explain below.	<input type="checkbox"/> Other - Explain below.	

Explanation: Use additional page(s) if necessary. (For section I and Section II.)

Submit two copies of finished labeling for ABN: RosePride® ORTHENEX® Insect & Disease Control, Form 0-265-01. This label captures the Notification of October 12, 1998.

Section - III

1. Material This Product Will Be Packaged In:				2. Type of Container	
Child-Resistant Packaging <input type="checkbox"/> Yes <input type="checkbox"/> No	Unit Packaging <input type="checkbox"/> Yes <input type="checkbox"/> No	Water Soluble Packaging <input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Metal <input type="checkbox"/> Plastic <input type="checkbox"/> Glass <input type="checkbox"/> Paper <input type="checkbox"/> Other (Specify) _____		
<i>Certification must be submitted</i>		If "Yes" Unit Packaging wgt. _____ No. per container _____	If "Yes" Package wgt _____ No. per container _____		
3. Location of Net Contents Information <input type="checkbox"/> Label <input type="checkbox"/> Container		4. Size(s) Retail Container		5. Location of Label Directions	
6. Manner in Which Label is Affixed to Product			<input type="checkbox"/> Lithograph <input type="checkbox"/> Paper glued <input type="checkbox"/> Stenciled <input type="checkbox"/> Other _____		

Section - IV

1. Contact Point (Complete items directly below for identification of individual to be contacted, if necessary, to process this application.)

Name Frank Kamienski	Title Registration Specialist	Telephone No. (Include Area Code) 925/553-3335
2. Signature 		6. Date Application Received (Stamped)
3. Title Registration Specialist		
4. Typed Name Frank Kamienski	5. Date March 26, 1999	

Certification
I certify that the statements I have made on this form and all attachments thereto are true, accurate and complete. I acknowledge that any knowingly false or misleading statement may be punishable by fine or imprisonment or both under applicable law.

EPA Form 8570-1 (Rev. 3-94) Previous editions are obsolete.

White - EPA File Copy (original)

Yellow - Applicant Copy

8/4

ORTHO[®]

RosePride[®]
Orthenex[®] Insect
& Disease Control
CONCENTRATE

SYSTEMIC 3-WAY ACTION
Kills Insects - Aphids, Leafhoppers & More
Stops & Prevents Plant Diseases
Plus Controls Spider Mites

For Use On Roses, Flowers,
Shrubs & Shade Trees

Active Ingredients

Acyprate	4.00%
Triazophos	3.25%
Fenbutatin-oxide*	0.75%
Other Ingredients	92.00%

*Hexazin

KEEP OUT OF REACH OF CHILDREN
DANGER See back panel booklet for additional
precautionary statements.
NET 16 FL OZ (1 PT) 473 mL

TREATS OVER
100 ROSE BUSHES

OUTDOOR
USE ONLY



1-800-851-0000

ORTHO **RosePride**
Orthenex[®] Insect & Disease Control

Easy to apply with an Ortho Star[®] Spray[®], hose-end or tank sprayer.

Product Facts
Treats over 100 rose bushes.

KILLS INSECTS & MITES	Aphids, leafhoppers, leafminers, flower thrips, leafhopper leafminers, spider mites, ticks, mites and two-spotted spider mite
STOPS & PREVENTS DISEASES	Black spot, powdery mildew and rust
FORM	Powder, granules, shrubs and shade trees
FOR USE	For use on rose-woody plants only
ADJUNCT	1 fl oz (2.1oz) per gallon of water

Directions, Warnings or Special Precautions call 1-800-851-0000 www.ortho.com

Manufactured for
The Ortho Group of
Monsanto Company
P.O. Box 2000
San Ramon, CA 94583-0000
Form U-205-01
EPA Reg. No. 256-0204
EPA Est. 256-98-1, 256-98-1A
Superseded as first letter of lot number
Made in USA

0 71549 03551 AB

PRESS TO RECAL

NOTIFICATION
APR 9 1999

ORTHO[®]

RosePride[®]
Orthenex[®] Insect
& Disease Control
CONCENTRATE

SYSTEMIC 3-WAY ACTION
Kills Insects - Aphids, Leafhoppers & More
Stops & Prevents Plant Diseases
Plus Controls Spider Mites

For Use On Roses, Flowers,
Shrubs & Shade Trees

Active ingredients
Acephate _____ 4.00%
Thiometon _____ 3.25%
Permethrin-sulfate _____ 0.75%
Other ingredients _____ 92.00%
*Heptachlor

KEEP OUT OF REACH OF CHILDREN
DANGER See back panel booklet for additional
precautionary statements.
NET 16 FL OZ (1 PT) 473 mL

TREATS OVER
100 ROSE BUSHES

OUTDOOR
USE ONLY

9 385 01

ITF CODE IS
928501

Front

Page 1

ORTHO[®] **RosePride**[®]
Orthenex[®] Insect & Disease Control

Easy to apply with an Ortho Dial 'n Spray[®], hose-end or tank sprayer.

Product Facts
Treats over 100 rose bushes.

KILLS INSECTS & MITES	Aphids, budworms, leafminers, flower thrips, leafhoppers, leafhoppers, spittlebugs, larcha mite and two-spotted spider mite
STOPS & PREVENTS DISEASES	Black spot, powdery mildew and rust
WHERE TO USE	Roses, flowers, shrubs and shade trees For use on non-edible plants only
AMOUNT TO USE	1 1/2 oz (2 Tbs) per gallon of water

Questions, Comments or Medical Information
call 1-800-225-3893 www.ortho.com

Specially formulated for residential use.

Manufactured for: **SOLARS**[®]
The SOLARS Group of
Monsanto Company
P.O. Box 5009
San Ramon, CA 94583-0803
Form D-285-01
EPA Reg. No. 259-2594
EPA Est. 259-18-J, 50998-A0-1*
Superscript in first letter of lot number
Made in USA

7 1549 03551 AB

ITF CODE IS
025501

DIRECTIONS FOR USE
It is a violation of Federal law to use this product in a manner inconsistent with its labeling.
Skin contact with this pesticide may be hazardous; wear chemical resistant gloves when mixing or applying this product. Shake well before using.

MIXING INSTRUCTIONS

Amount to Use: 1 1/2 oz (2 Tbs) per gallon of water

When using Ortho Dial 'n Spray[®]:

- Set dial to 1 oz.
- Pour product into sprayer to fill jar one-quarter to one-half full. DO NOT add water.
- After spraying, unused product can be poured back into its original container.

1 Tablespoon (Tbs) = 3 teaspoons (tsp) 1 fl oz = 2 Tbs

PLANTS
Roses, flowers, shrubs and shade trees
For use on non-edible plants only

INSECTS & MITES CONTROLLED
Aphids, flower thrips, lacebugs, leafhoppers, budworms, leafminers, spittlebugs, larcha mite and two-spotted spider mite

DISEASES STOPPED & PREVENTED
Black spot on roses
Powdery mildew on calendulas, crapemyrtle, dahlia, auronymus, Jerusalem thorn, lilac, philox, photinia, roses, snapdragon and zinnia
Rust on asters, carnations and roses

10/16/98
CATRFL
H1 NY

4/4

HOW IT WORKS

Ortho® RosaPride® Orthenex® is absorbed by leaves for lasting systemic insect and disease protection that won't wash off with rain or watering.

Orthenex quickly kills sprayed insects and mites and continues controlling insects which feed on treated plants.

Although, no fungicide can clear up diseased areas already on plants, Orthenex with its systemic formula will stop major plant diseases and protect unaffected areas and new growth when used as directed.

Thank you for choosing Ortho. You'll like the results and so will your plants.

HOW TO APPLY

- Use a tank, Ortho Dial In Spray or other hose-end sprayer.
- Spray thoroughly to cover all plant surfaces (upper and lower leaf surfaces, flowers, stems and branches) including new growth.

WHEN TO APPLY

- Spray when first sign of insects, mites or disease appears.
- For **hant** to control pests such as two-spotted spider mite. It may be necessary to spray 2 to 3 times, waiting 7 to 10 days between each application.
- For **diseases**: Apply every 7 to 10 days if disease conditions persist.



People and pets may enter treated area after spray has dried.

STORAGE AND DISPOSAL

STORAGE: Store away from heat or open flame. Keep pesticide in original container. Do not put concentrate or dilute into food or drink containers. Avoid contamination of feed and foodstuffs. Store in a cool, dry place, preferably in a locked storage area. Do not store below 25°F. Do not store diluted spray.

DISPOSAL: PRODUCT - Partially filled bottle may be disposed of by securely wrapping original container in several layers of newspaper and discard in trash.

CONTAINER - Do not reuse empty bottle. Rinse thoroughly before discarding in trash.

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS & DOMESTIC ANIMALS

DANGER: Causes irreversible eye damage and skin irritation. May be harmful if swallowed or absorbed through skin. Do not get in eyes, on skin or on clothing. Wear goggles. Wash thoroughly with soap and water after handling. Remove contaminated clothing and wash before reuse.

FIRST AID: IF IN EYES: Hold eyelids open and flush with a steady, gentle stream of water for 15 minutes. See a physician immediately. **IF ON SKIN:** Wash with plenty of water. Get medical attention. **IF SWALLOWED:** Do not induce vomiting. Call a physician or Poison Control Center. Drink promptly a large quantity of milk, egg whites, gelatin solution, or, if these are not available drink large quantities of water. Avoid alcohol. (continued)

PRECAUTIONARY STATEMENTS (continued)

When handling this product, wear chemical resistant gloves, long pants, and long-sleeved shirt. When using outdoors, spray with the wind to your back and do not use when wind speeds are 10 mph or more. Wash the outside of the gloves with soap and water before removing. **Note to Physicians:** Probable mucosal damage may contraindicate the use of gastric lavage. Emergency information call 1-800-225-2883.

ENVIRONMENTAL HAZARDS: This pesticide is toxic to birds, mammals, fish and aquatic invertebrates. Do not apply directly to water. Drift and runoff may be hazardous to aquatic organisms in neighboring areas. Do not contaminate water when disposing of equipment washwater or rinsate. Cover or soil-incorporate spills. This product is highly toxic to bees exposed to direct treatment or residues on blooming crops or weeds. Do not apply this product or allow it to drift to blooming crops or weeds if bees are visiting treatment area.

PHYSICAL OR CHEMICAL HAZARDS: Do not use or store near heat or open flame.

NOTICE: Buyer assumes all responsibility for safety and use not in accordance with directions.



Questions, Comments or Medical Information call 1-800-225-2883 www.ortho.com

©Monsanto Company 1998
Manufactured for The 30 LARIS Group of Monsanto Company
P.O. Box 5098 San Ramon CA 94580-0808
Form 0-265-01
EPA Reg. No. 239-2594 EPA Est. 239-16-31, S2996-MO-114
Superscript is first letter of lot number Made in USA

PREP TO RESISTAL

Reference No. 21

239-2476

03/23/2000 S 577263 1/7



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

MAR 23 2000

Mr. Charles Levey, Manager
Federal Registrations
The Scotts Company
14111 Scottslawn Road
Marysville, OH 43041

OFFICE OF
PREVENTION, PESTICIDES AND
TOXIC SUBSTANCES

Dear Mr. Levey:

Subject: Ortho Systemic Rose & Floral Spray
EPA Reg. No. 239-2476

This is in reference to your letter of March 17, 2000 regarding use of your current warehouse inventory of 11,079 finished labeled units for the subject registration bearing the labeling claim, "lasting". The labeling claim had been submitted to the Agency on August 23, 1999 through the notification process and the various deficiencies with the notification were described to you in our letter of March 14, 2000. Your letter specified that new labeling with this claim removed will be printed this September.

Based on the information submitted for the subject product, there is no objection to your use of the 11,079 finished labeled units bearing the "lasting" claim labeling. No new products bearing the objectionable lasting claim may be produced as of the date of this letter.

The draft master or basic product name labeling submitted in connection with registration under the Federal Insecticide, Fungicide, and Rodenticide Act, As Amended (FIFRA) and showing the deletion of the objectionable claim, is acceptable, provided that you incorporate the following corrections and submit one copy of the corrected basic label for our files. You are advised that additional brand name product labeling may not bear claims in excess of those appearing on the basic product name labeling and that labeling amendments, including notifications must be submitted for the basic product label. The Agency does not generally review nor stamp additional brand name labeling. If you do not intent to market the product under the basic product name, Ortho Systemic Rose & Floral Spray, you may wish to consider designating it as your additional product name and designate the marketed product name as your basic product name.

1. Update the second sentence in the environmental hazards section to read as cited below in accordance with PR Notice 93-8.

Do not apply directly to water.

Internet Address (URL) = <http://www.epa.gov>

Recycled/Recyclable • Printed with Vegetable Oil Based Inks on Recycled Paper (Minimum 25% Postconsumer)

- 2. Complete the last sentence on page three regarding the CFCs.

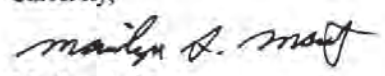
3. Labeling claims for use on ornamental plants, trees or shrubs are considered ambiguous claims as such use may come under the scope of the Worker Protection Standard. To ensure non-WPS use of a product where no WPS use is intended, labeling statements as directed on the enclosure are to be added to the label.

Submit one copy of your final printed label incorporating the corrections cited above before you release the product for shipment bearing the amended label.

If this condition is not complied with, the registration will be subject to cancellation in accordance with FIFRA sec. 6(e). Your release for shipment of the product bearing the amended label constitutes acceptance of this condition.

A stamped copy of the label is enclosed for your records.

Sincerely,



Marilyn A. Mautz
Biologist
Insecticide-Rodenticide Branch
Registration Division (7504C)

Enclosure

Enclosure to 3-23-2000
EPA Letter
3/7

WPS USE

If the product is intended for uses under the scope of WPS, the label must be revised to incorporate the WPS protective language under 40 CFR Part 156 Subpart K.

HOMEOWNER USE

If it is your intention that the product be marketed only for use by the homeowner, add the appropriate language to clarify this intended use; i.e. "For outdoor use around the home only."

NON-WPS, NON-HOMEOWNER USE

If it is your intention that the product be marketed for application by a professional applicator or for use in areas other than around the home, but not for uses under the scope of WPS, you must add a special statement to remove the product from the scope; i.e. "Not for use on plants being grown for sale or other commercial use, or for commercial seed production, or for research purposes."

4/7

ORTHO® SYSTEMIC ROSE & FLORAL SPRAY, EPA Reg. No. 239-2476

ABN: ORTHENEX Rose & Flower Spray
RosePride ORTHENEX Insect & Disease Control,

Gives systemic protection against insect reinfestation for up to 2 weeks on Roses and Flowers

[8/27/96]: Controls Insects & Diseases on Roses & Flowers
Gives Systemic Protection for Up to 2 Weeks

[8/11/97]: ENDORSED - AMERICAN ROSE SOCIETY [LOGO]

Contains ORTHENE® Systemic Insecticide and FUNGINEX® Systemic Fungicide

10/16/96]: Beautiful Roses From... (Display on shipping case)

Kills: Aphids, Whiteflies, Mealybugs, Budworms, Mites, Leafminers, Thrips, Scales and other listed insects.

PROTECTS AGAINST DISEASES: Blackspot, Rust and Powdery Mildew of Roses and other listed diseases.

Active Ingredients	By Wt.
*Acephate (O,S-Dimethylacetylphosphoramidothioate)...	0.250%
**Resmethrin[5-(phenylmethyl)-3-furanyl]methyl 2,2-dimethyl-3-(2-methyl-1-propenyl) cyclopropanecarboxylate.....	0.100%
Related compounds.....	0.014%
Triforine (N,N'-[1,4-piperazinediylbis (2,2,2-trichloroethylidene)] bis [formamide]).....	0.100%
Inert Ingredients.....	99.536% <u>99.550%</u>

*ORTHENE®, Acephate U.S. Pat. Nos. 3,716,600 & 3,914,417
**cis/trans isomers ratio max. 30% (+) cis and min. 70%
(+)trans

U.S. Pat. Nos. 3,456,007 & 3,683,078

KEEP OUT OF REACH OF CHILDREN

WARNING

See back panel for additional precautionary statements

NET WT. 14 OZ.

239-2476.WP6
Form

EPA Accepted 1/25/91
Notifications of 7/25/94, 4/8/96, 5/7/96, 8/27/96, 8/28/96, 10/16/96 & 8/11/97

ACCEPTED
with COMMENTS
in EPA Letter Dated:

MAR 23 2000

Under the Federal Insecticide,
Fungicide, and Herbicide Act
as amended, for the pesticide
registered under EPA Reg. No.
239-2476

HOW TO APPLY: Hold can in upright position approximately 18" from plants. Apply as a light spray, covering both upper and lower leaf surfaces. Not for use on houseplants inside the home. Note: Holding aerosol can too close to foliage may result in overwetting and damage to tender foliage. Protect plastic, enameled, varnished, and painted surfaces from spray.

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS & DOMESTIC ANIMALS

WARNING: Causes eye irritation. Harmful if swallowed. Do not get in eyes. Avoid contact with skin or clothing. Do not allow children or pets to come into contact with treated surfaces until sprays have dried. [8/28/96]: **FIRST AID:** In case of eye contact, wash eyes immediately with fresh water for 15 minutes and see a doctor. In case of skin contact, wash skin with soap and water. If a large amount of the liquid is swallowed, give water to drink, make person vomit and call a doctor. Note to Physicians: Emergency Information - call 1-800-457-2022. Avoid contamination of food. Do not contaminate water supplies.

ENVIRONMENTAL HAZARDS: This pesticide is highly toxic to fish. Do not apply directly to water or wetlands (swamps, bogs, marshes, and potholes). Drift and runoff from treated sites may be hazardous to fish in adjacent waters. **PHYSICAL OR CHEMICAL**

HAZARDS: Extremely Flammable. Contents under pressure. Keep away from fire, flames, sparks, heated surfaces or other sources of ignition. Do not puncture or incinerate container. Exposure to sunlight or temperatures above 130°F may cause bursting.

STORAGE AND DISPOSAL

STORAGE: Store in a secure, preferable locked storage area away from heat or open flame.

DISPOSAL: PRODUCT- unused product may be disposed of by securely wrapping original container in several layers of newspaper and discard in trash.

CONTAINER- Replace cap and discard in trash. Do not incinerate or puncture.

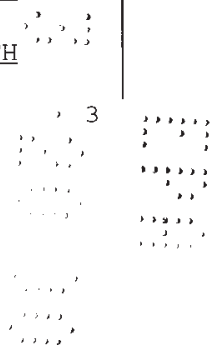
NOTICE: Buyer assumes all responsibility for safety and use not in accordance with directions.

[4/8/96]: Federal regulations prohibit CFC propellants in aerosols.

[LOGO]: CONTAINS NO CFCs WHICH NO CFCs

239-2476.WP6 Form

EPA Accepted 1/25/91 Notifications of 7/25/94, 4/8/96, 5/7/96, 8/27/96, 8/28/96, 10/16/96 & 8/11/97

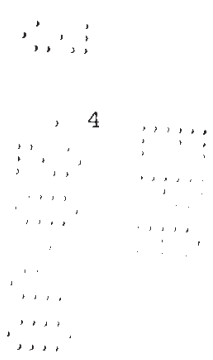


DEplete THE OZONE LAYER |

Manufactured for
The SOLARIS Group of Monsanto Company
Ortho Consumer Products
P.O. Box 5047 San Ramon, CA 94583-0947
Product 1000-83
Form R10219-F EPA Reg. No. 239-2476-ZA
 C A
EPA Est. No. 9688-MO-1, 58996-MO-1
Superscript corresponds to first letter of lot number on bottom
of can.

239-2476.WP6
Form

EPA Accepted 1/25/91
Notifications of 7/25/94, 4/8/96, 5/7/96, 8/27/96, 8/28/96, 10/16/96 & 8/11/97



Reference No. 22

192-210

6/8/2000

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5577326



U.S. ENVIRONMENTAL PROTECTION AGENCY
Office of Pesticide Programs
Registration Division, #7505C
401 "M" St., S.W.
Washington, D.C. 20460

EPA Reg. Number:
192-210

Date of Issuance:
JUN 8 2000

Term of Issuance:
Conditional

NOTICE OF PESTICIDE:
 x Registration
 Reregistration

Name of Pesticide Product:
Dexol Systemic
Granules for Plant
Insect Control

(Under FIFRA, as amended)

Name and Address of Registrant (include ZIP Code):
Dexol, A Wholly Owned Subsidiary
of Verdant Brands, Inc.
9555 James Ave., South, Suite 200
Bloomington, MN 55431-2543

Note: Changes in labeling differing in substance from that accepted in connection with this registration must be submitted to and accepted by the Registration Division prior to use of the label in commerce. In any correspondence on this product always refer to the above EPA registration number.

On the basis of information furnished by the registrant, the above named pesticide is hereby registered/reregistered under the Federal Insecticide, Fungicide and Rodenticide Act.

Registration is in no way to be construed as an endorsement or recommendation of this product by the Agency. In order to protect health and the environment, the Administrator, on his motion, may at any time suspend or cancel the registration of a pesticide in accordance with the Act. The acceptance of any name in connection with the registration of a product under this Act is not to be construed as giving the registrant a right to exclusive use of the name or to its use if it has been covered by others.

This product is conditionally registered in accordance with FIFRA sec. 3(c)(7)(A) provided that you:

1. Submit and/or cite all data required for registration of your product under FIFRA sec. 3(c)(5) when the Agency requires all registrants of similar products to submit such data; and submit acceptable responses required for reregistration of your product under FIFRA section 4.
2. Make the following label changes before you release the product for shipment:
 - a. Add the designation, "EPA Reg. No.192-210".
 - b. Refer to PR Notice 2000-3 for current guidance in regards to the First Aid statements.
 - c. The finished label must reflect the deletion of the following wording which has been struck through on the enclosed stamped label in accordance with your e-mail of June 7, 2000: "in and " and "houseplants " .
3. Submit two copies of the revised final printed label before you release the product for shipment.

Signature of Approving Official:
Monika R. Meant

Date:
JUN 8 2000

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page 2
EPA Reg. No. 192-210

If these conditions are not complied with, the registration will be subject to cancellation in accordance with FIFRA sec. 6(e). Your release for shipment of the product constitutes acceptance of these conditions.

A stamped copy of the label is enclosed for your records.



Marilyn A. Mautz
Biologist
Insecticide-Rodenticide Branch
Registration Division (7504C)

FRONT PANEL

DEXOL SYSTEMIC GRANULES for PLANT INSECT CONTROL

For Flowers
Protection Against Sucking
And Chewing Insects As Listed
For Outdoor Use Around The Home Only.

KEEP OUT OF REACH OF CHILDREN
CAUTION

See additional precautionary statements and First Aid on back panel

ACTIVE INGREDIENTS:

Acephate (O,S-Dimethyl acetylphosphoramidothioate).....	1.50%
OTHER INGREDIENTS:.....	98.50%
TOTAL.....	100.00%

NET WEIGHT _____

EPA Reg. No. 192-

EPA Est. No. ^D 192-CA-1; ^S 769-GA-1; ^{II} 44616-MO-1

Circled letter corresponds to first letter of lot number on container.

Distributed by: Dexol, a division of
VERDANT BRANDS, INC.
9555 JAMES AVENUE SOUTH
SUITE 200
BLOOMINGTON, MN 55431

ACCEPTED
with COMMENTS
in EPA Letter Dated:

JUN 8 2000

Under the Federal Insecticide,
Fungicide, and Herbicide Act
as amended, for the pesticide
registered under EPA Reg. No.
192-210

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4 8 4

BACK PANEL

PRECAUTIONARY STATEMENTS
HAZARDS TO HUMANS AND DOMESTIC ANIMALS

CAUTION: Harmful if absorbed through the skin. Avoid breathing dust. Avoid contact with skin, eyes, or clothing.

FIRST AID

If Swallowed: Call a physician or Poison Control Center immediately. **If Inhaled:** Remove victim to fresh air. Apply artificial respiration, preferably mouth-to-mouth, if indicated. **If On Skin:** Remove contaminated clothing. Wash affected area with soap and water. If irritation appears get medical attention. **If In Eyes:** Flush eyes with plenty of water. Get medical attention if irritation persists. **Note to Physician:** If symptoms of cholinesterase inhibition are present, atropine sulfate by injection is antidotal. 2-PAM is also antidotal and may be administered in conjunction with atropine.

USER SAFETY RECOMMENDATIONS

When handling the product, wear chemical resistant gloves, long pants, and long sleeved shirt. Wash the outside of gloves with soap and water before removing. Users should wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet. User should remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.

ENVIRONMENTAL HAZARDS

Do not apply directly to water. Do not contaminate water when disposing of equipment washwaters or rinsate.

DIRECTIONS FOR USE

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

This product is for use only on plants grown ~~in and~~ around the house as listed. Do not apply to plants or sites not listed on this label. Dextol Systemic Granules for Plant Insect Control contains an effective systemic insecticide that provides up to 6 weeks control of Aphids, Thrips, Mites, Leafhoppers, Leafminers and other insects as listed. Systemic means that the insecticide is actually absorbed into the plant through the root system and then moves internally through the sap stream into the branches, leaves, blossoms and the new growth. Working from inside the plant, Dextol Systemic Granules for Plant Insect Control kills sucking insects as they feed. It cannot be washed off by sprinkling or rain since the protection is internal. When used as directed, Dextol Systemic Granules for Plant Insect Control kills the following insects on roses, flowers, ~~houseplants~~ and shrubs: Aphids (Plant Lice), Cuban Laurel Thrips (~~Trips~~), Leafhoppers, Lace Bugs, Holly Leaf Miners, Birch Leaf Miners, Maple Shoot Moth, Elm Leaf Beetles, Willow Leaf Beetles, Obscure Root Weevil on Azalea and Rhododendron. Avoid contact with skin. When handling the product, wear chemical resistant gloves, long pants, and long sleeved shirt when applying this product or mixing into the soil as directed. DO NOT apply to plants to be used for food or feed. DO NOT apply to ornamentals that are planted directly beneath food producing trees such as fruit or nut bearing trees.

FOR ORNAMENTAL SHRUBS: Apply 3.3 oz. (2/3 cups) for each foot of shrub height. Distribute the required amount evenly from the base to the dripline of all sides of the plants. Work into the top 1 to 2 inches of soil and water in thoroughly. Apply when plants have had about 1 inch of new growth in the spring and reapply every six weeks through the end of summer. **FOR ESTABLISHED ROSES:** Apply 3.3 oz. (1/2 cup) evenly over an area of 3' x 3' (9 sq. ft.) around the base of each plant and work into top 1 or 2 inches of soil. Water in thoroughly. **WHEN PLANTING NEW ROSE BUSHES:** Do not apply to newly planted roses until they have become well established or have been planted in the ground for 3 months. Then follow direction for Established Roses. **FOR FLOWERS:** Before Planting-Apply 2/3 lb. (10oz) per each 25 sq. ft. (5'x5') of bed area. Work into the top 1 to 2 inches of soil. Plant seed or set plants and water thoroughly. Growing Plants-Apply 2 level teaspoonfuls in a band around each plant. Work into the top 1 to 2 inches of soil. Water thoroughly.

STORAGE AND DISPOSAL

Do not contaminate water, food or feed by storage and disposal

Storage: Store in a cool dry place away from children and pets. Keep in original container and preferably in a locked storage area. **Pesticide Disposal:** Partially filled container can be disposed of by securely wrapping container in several layers of newspaper and discarding in trash. **Container Disposal:** Do not reuse empty container. Securely wrap container in several layers of newspaper and discard in trash.

Verdant Brands will not accept liability for damage or injury resulting from misuse. For information on this pesticide product (including health concerns, medical emergencies, or pesticide incidents), call the National Pesticide Telecommunications Network at 1-800-858-7378. If you are not completely satisfied with this product, or for consumer information, call (612) 703-3300 weekdays 9-5 Central Time to arrange for a refund of the purchase price or replacement of the product. Proof of purchase is required.

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