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

MAR 16 1994

MEMORANDUM

OFFICE OF
PREVENTION, PESTICIDES AND
TOXIC SUBSTANCES

SUBJECT: ADDENDUM: OCCUPATIONAL AND RESIDENTIAL EXPOSURE ASSESSMENT AND RECOMMENDATIONS FOR THE REREGISTRATION ELIGIBILITY DOCUMENT FOR FENAMIPHOS: POST-APPLICATION EXPOSURE ASSESSMENT

FROM: Laura E. Morris, Environmental Scientist Laura E. Morris

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Please find the OREB review of fenamiphos.

DP Barcode: D187031

Pesticide Chemical Codes: 100601

EPA Reg. Nos.: 003125-00236, 003125-00237, 003125-00283, 3125-333, 3125-269

EPA MRID Nos.: 419017-01

LUIS Report Date: Updated Report 6/8/93 (7/15/93 Cover Memorandum) [replaces initial Report 5/14/92 (5/20/92 Cover Memorandum)

PHED: Yes

This addendum presents the OREB post-application exposure section of the science chapter review for the Fenamiphos Reregistration Eligibility Document (RED). Occupational and residential exposure data requirements to support the reregistration of fenamiphos are

discussed in this chapter. As requested, the mixer/loader/applicator exposure assessment was provided in a previous memorandum (memorandum dated 3/2/94 from L. Morris/OREB to E. Saito/CCB). [Note: Additional mitigation notes have been added to Table 2. Exposure Scenario Descriptions for Fenamiphos; please replace Table 2 included with this assessment with the previously submitted Table 2 in the 3/2/94 memorandum.]

Post Application/Re-Entry Exposure:

As previously stated, fenamiphos is applied to the soil and to be effective it should be incorporated or irrigated into the soil immediately after treatment. With the exception of pineapples, fenamiphos is not applied to foliage (even though foliage may be present during application (based on LUIS report), and human post-application exposure to foliage should be minimal. Post-application exposure is a concern for human activities which may involve contact with the soil after treatment (i.e., applied prior to transplanting strawberries). The Registration Standard June 1987 indicated that reentry data were required. April/1988, the registrant requested a waiver of the data requirements and the proposed 48 hour reentry interval for the golf course use. OREB, then NDEB, granted a waiver for the golf course use (both the data requirement and 48 hr. restricted entry interval were waived).

The Agency has reviewed a foliar dislodgeable residue study submitted on pineapples in support of reregistration requirements [guideline #132-1(a)]. The study entitled, "Foliar Residue Following Application of NEMACUR to Pineapples" MRID # 419017-01 was submitted by Mobay Corporation. The study was conducted on 3 sites in Hawaii using Nemacur 3 (EC). Based on the data analysis and toxicology data, a 17 day restricted entry interval was proposed by the registrant. OREB concluded that the study is acceptable. However, the following study deficiencies were noted: 1) only one fortification level, instead of a range of levels, was used to generate laboratory data; 2) incomplete weather data, 3) tank mix samples were not collected, and 4) sprayer calibration data were not provided. The Agency concurs with the registrant's proposed restricted entry interval of 17 days for pineapples.

Based on the use patterns previously described, several exposure scenarios are plausible as defined by the types of application equipment and procedures that might be employed. Each scenario is presented in Table A. Post-Application Exposure Analysis for Fenamiphos along with a corresponding exposure evaluation.

Restricted Entry Interval (REI):

The acute dermal LD_{50} is 225 mg/kg (male rabbits) and 178.8 mg/kg (females rabbits), placing fenamiphos in toxicity category 1 for the active ingredient. Based on this classification, the criteria as established by Worker Protection Standard (WPS) for Agricultural Pesticides--40 CFR Parts 156 and 170--should be followed. OREB recommends a 48 hour restricted entry interval (REI) for all sites (unless otherwise noted) within the scope of the WPS (see PR Notice 93-7) as a conservative measure to mitigate risk to workers entering treated areas after application. During the REI the Agency will allow workers to enter areas treated with fenamiphos only in the few narrow exceptions allowed in the WPS.

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There are several sites (refer to shaded comments in Table A) for which the Agency requests further clarification of the use patterns (i.e., application timing) which may affect exposure potential. For these sites (i.e., ornamental herbaceous plants) the 48 hour REI should be used in the interim, until receipt and evaluation of the requested data.

Based on the use information available, some sites may result in significant human exposure. With the exception of pineapples (17 day REI), data have not been submitted for uses which may result in significant human exposure. Data should be provided for these uses (i.e., strawberries, citrus fruits, ornamental herbaceous plants, etc.-- see Table A) to determine the appropriate REI which would minimize risk to workers. If further explanation of the use patterns may negate the need for a study then these data should be submitted to the Agency for evaluation. The waiver previously granted for golf courses is still applicable assuming there is minimal hand contact with the turf, the grass is mechanically cut and the cuttings are mechanically bagged (memorandum dated 10/17/88 from H. Vandermer/HED to L. Rossi/SRRD, exempting the 48 hr. REI based on label amendments). Entry onto golf courses should be restricted until sprays have dried or dusts have settled.

Data Requirements:

Based on the use information and data available, the following post-application exposure data are required to support the reregistration of fenamiphos (see Table A).

Guideline Numbers	Guideline Description	Required Scenarios
132-1(b) 133-3 133-4	Soil Residue Dissipation Dermal Exposure Inhalation Exposure	1) Groundboom Application of Nemacur 3 on grapes, citrus, cotton, turf (except golf course turf), ornamental woody shrubs, vines, and trees 2) Broadcast application of Nemacur 10G and 15G on ornamental plants, turf (except golf course turf) 3) Banding application of Nemacur 10G and 15G on strawberries and citrus fruits

Conclusions:

Fenamiphos is an organophosphate insecticide/acaricide used to control groundborne pests such as nematodes on a variety of agricultural and ornamental crops/targets. Significant potential for exposure to fenamiphos exists via several pathways based on the use patterns of this chemical. Mixer/loader/applicator and post-application exposure (dermal and inhalation) are of concern as several application scenarios and configurations of application equipment can be typical for the use of fenamiphos. As a result, additional mixer/loader/applicator and post-application exposure data are required to adequately evaluate the risks associated with the use of fenamiphos.

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Personal Protective Equipment (PPE) Requirements:

PPE selection for mixer/loader/applicators and other handlers will be based on the end-use product. The following statements to be included on the fenamiphos labels are located on the attached Pesticide Worksheets -- Parts One and Two: **Reduce PPE When Engineering Controls Used; User Safety Requirements; Application Restrictions; Entry Restrictions; Early Entry PPE; and Notification Statements.**

The Agency is requiring PPE for applicators, mixer/loaders and other handlers as well as early entry workers consistent with the PPE level required for pesticides classified as Toxicity Category I for acute dermal toxicity. It should be noted that PR Notices 93-7 and 93-11 indicated that fenamiphos is classified as Toxicity Category II for the active ingredient, and that existing data indicates fenamiphos should be classified as a Toxicity Category I pesticide based on the active ingredient (for acute dermal toxicity). OREB recommends that the criteria as specified in the Worker Protection Standards for Toxicity Category I pesticides be adhered to unless data are evaluated which would initiate the need for an amendment.

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REFERENCES

1. U.S. EPA, 1992. Label Use Information System Report For Fenamiphos Dated 6/8/93 (Cover Memo Dated 7/15/93); Agency Approved Labels 3125-236 dated 12/10/91; 3125-237 dated 5/8/92; 3125-283 dated 7/20/93.

2. U.S. EPA, 1987. Registration Standard For Products Containing Fenamiphos: Issued .

3. PHED, 1992. The Pesticide Handlers Exposure Database. Developed by Versar, Inc., under contract by the U.S. Environmental Protection Agency (Contract No. 68-D9-0166), Health and Welfare Canada, and the National Agricultural Chemicals Association.

Attachment

cc: w/Attachment
Laura Morris, OREB
L. Schnaubelt/SRRD (7508W)
Flora Chow/CCB (7509C)
Jack Housenger (7508W)
Fenamiphos Chemical File (104601)
Correspondence File
Circulation

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Table 2. Exposure Scenario Descriptions For Fenamiphos[a]

Exposure Scenario (Scen. #)	Data Source	Clothing Scenario	Equipment	Formulation	Standard Assumptions[a] (8 hour workday)	Comments
Mixer/Loader Exposure Levels						
Open Mixing Granulars (I)	PHED	Coveralls, gloves	PHED Open Mixing Category	Granular	Based on various broadcast applications for which up to 1000 lb ai/day can be used.	Dermal data: All grade data/0-14 replicates Inhalation: All grade data/14 replicates
Open Mixing Emulsifiable Concentrates (II)	PHED	Long Sleeves, Long Pants, No Gloves	PHED Open Mixing Category	All Liquids	Based on broadcast preplant treatment of pineapples	50% protection factor applied to unit exposure data as no data were available for the WPS clothing scenario (coveralls over normal work clothing and gloves)
Open Mixing For Chemigation (III) [Only ECs are used]	PHED	Long Sleeves, Long Pants, No Gloves	PHED Open Mixing Category	All Liquids	See chemigation for Nemacur 3	Dermal: Grades A&B/14+ replicates for each body part. Inhalation: Grades A&B/40 replicates. 50% protection factor applied to unit exposure data as no data were available for the WPS clothing scenario (coveralls over normal work clothing and gloves)
Applicator Exposure Levels						
Groundboom Application (IV)	PHED	Long Sleeves, Long Pants, No Gloves	PHED Groundboom Category/Open Cab	All Formulations		Dermal: Grades A, B, C/6+ replicates Inhalation: Grades A, B, C/56 replicates 50% protection factor applied to unit exposure data as no data were available for the WPS clothing scenario (coveralls over normal work clothing and gloves)
Granular Application (V) Broadcast	PHED	Coveralls, gloves	PHED Solid Broadcast Spreader	Granular		Data based on combined mixer/loader/applicator activities. However, no adjustments to exposure data were completed based on the nominal exposures noted for the open mixing of granules (Scenario 1) – these values were nominal in comparison. Dermal: Grades C&E/5+ replicates. Inhalation: Grades C&E/19 replicates.
Granular Application (V) Banding and In-Furrow	PHED	Total Deposition	PHED Granular Category	Granular		Dermal and Inhalation: Grades A & B/2 replicates 50% protection factor applied twice to unit exposure data as no data were available for the WPS clothing scenario (coverall over normal work clothing and gloves)

a Standard Assumptions are all based on an 8 hour workday as estimated by OREB. BEAD data were not available to justify many scenarios. Additionally, all standard assumptions were based on the maximum application rate allowable by each end-use product label.

Table A. Post-Application Exposure Analysis for Fenamiphos[a]

Exposure Scenario (Scen. #) and Formulation[b]	Application Type[c]	Application Timing	Application Targets[d]	Maximum Rate (lb ai/acre)[d]	Exposure Comments[e]
Chemigation (I) [Only ECs are used for chemigation] Nemacur 3	Low Pressure	Variable	Pome/Stone/Citrus, Fruits, Grapes, Kiwi, Pineapple, Tree Nuts, Leather, Leaf Fern, Deciduous Fruit Trees	9.0 lb/acre	Based on the use patterns (i.e., variable application timing), the potential for exposure exists. Because of limited use information, OREB is requesting clarification of the application technique and timing as it relates to the possibility of human contact." Until additional information is received workers should comply with a 48 hour restricted entry interval in accordance with WPS.
	Solid Set	Variable	Ornamental Non-Flowering Plants	12.0 lb/acre	
Groundboom Application (II) Nemacur 3	In-Furrow	At/Pre-Plant	Cotton, Ornamental Herbaceous Plants	12.0 lb/acre	Based on the use patterns, the potential for exposure should be minimal. No additional data are required. It is recommended that the workers comply with a 48 hour restricted entry interval in accordance with WPS.
		Post-Plant	Ornamental Herbaceous Plants	12.0 lb/acre	
	Banding	At/Pre-Plant	Beets, Cotton, Asparagus, Peanuts	2.7 lb/acre	
		Pre-Transplant	Strawberry, Asparagus	2.7 lb/acre	
		At/Post-Transplant	Eggplant	2.0 lb/acre	
			Apple, Cherry, Citrus, Deciduous Fruit Trees, Grapes, Nectarine, Peaches, Tree Nuts	10.0 lb/acre	
		Bearing/Foliage on Plant[f]	Grapes,[g] Citrus[h]	10.0 lb/acre	Based on the use patterns, the potential exists for significant worker exposure. Therefore, it is recommended that data be submitted to determine an appropriate restricted entry interval. Until acceptable data are reviewed, an interim minimum restricted entry interval of 48 hours should be followed in accordance with WPS."
		No Timing Specified	Citrus, Cotton	10.0 lb/acre	

Table A. Post-Application Exposure Analysis for Fenamiphos[a]

Exposure Scenario (Scen. #) and Formulation[b]	Application Type[c]	Application Timing	Application Targets[d]	Maximum Rate (lb ai/acre)[d]	Exposure Comments[e]
Groundboom Application (II) Nemacur 3	Banding	Fall	Ornamental Herbaceous Plants	12.0 lb/acre	Based on the use patterns (i.e., application timing), the potential for exposure exists. Because of limited use information, OREB is requesting clarification of the application technique and timing as it relates to the possibility of human contact.* Until additional information is received workers should comply with a 48 hour restricted entry interval in accordance with WPS.
		Nonbearing Nursery-stock	Tree Nuts, Unspecified Deciduous Fruit Trees	9.0 lb/acre	Based on the use patterns, the potential for exposure should be minimal. No additional data are required. It is recommended that the workers comply with a 48 hour restricted entry interval in accordance with WPS. With the exception of the 17 day REI for pineapples.
		Dormant, Post-Harvest	Asparagus, Raspberry	6.0 lb/acre	
		Post-Plant, Pre-Emergent	Asparagus	2.0 lb/acre	
	Soil Injection	At/Pre-Plant	Cotton	3.0 lb/acre	
	Broadcast/Spray	At/Pre-Plant	Tobacco, Pineapple	20.0 lb/acre	
		Non-Bearing	Grapes, Kiwi, Unspecified Orchards	9.0 lb/acre	
		Post-Harvest (Ratoon)	Pineapple	10.0 lb/acre	
		Post-Plant, Pre-Emergent	Pineapple	3.0 lb/acre	

Table A. Post-Application Exposure Analysis for Fenamiphos[a]

Exposure Scenario (Scen. #) and Formulation[b]	Application Type[c]	Application Timing	Application Targets[d]	Maximum Rate (lb ai/acre)[d]	Exposure Comments[e]
Groundboom Application Nemacur 3	Broadcast/Spray	Foliage on Plant[f]	Sod Farm Turf, Ornamental Woody Shrubs and Vines, Ornamental Lawns and Turf, Golf Course Turf[g], Pineapple[h]	10.0 lb/acre	Based on the use patterns, the potential exists for significant worker exposure. Therefore, it is recommended that data be submitted to determine an appropriate restricted entry interval. Until acceptable data are reviewed, an interim minimum restricted entry interval of 48 hours should be followed in accordance with WPS.* The 17(hour) REI for pineapples is considered permanent; no additional data required.
	Drench	Post-Transplant	Cabbage	1.7 lb/acre	A 48 hour restricted entry interval should be followed in accordance with WPS. No additional data are required.
Granular Application (III) Nemacur 10G & 15G	Broadcast	Foliage on Plant[f]	Ornamental Herbaceous Plants, Commercial and Industrial Turf, Golf Course Turf[g], Ornamental Lawns and Turf, Ornamental Non-Flowering Plants	10.0 lb/acre	Based on the use patterns, the potential exists for significant worker exposure. Therefore, it is recommended that data be submitted to determine an appropriate restricted entry interval. Until acceptable data are reviewed, an interim minimum restricted entry interval of 48 hours should be followed in accordance with WPS.*
		At/Pre-Plant	Pineapple, Ornamental Herbaceous Plants (Protea)	20.0 lb/acre	Based on the use patterns, the potential for exposure should be minimal. No additional data are required. It is recommended that the workers comply with a 48 hour restricted entry interval in accordance with WPS.

Table A. Post-Application Exposure Analysis for Fenamiphos[a]

Exposure Scenario (Scen. #) and Formulation[b]	Application Type[c]	Application Timing	Application Targets[d]	Maximum Rate (lb ai/acre)[d]	Exposure Comments[e]
Granular Application (III) (cont.) Nemacur 10G & 15G	Broadcast	Post-Plant	Ornamental Woody Shrubs and Vines	9.75 lb/acre	Based on the use patterns (i.e., application timing), the potential for exposure exists. Because of limited use information, OREB is requesting clarification of the application technique and timing as it relates to the possibility of human contact.* Until additional information is received workers should comply with a 48 hour restricted entry interval in accordance with WPS.
		Nursery Stock	Ornamental Shade Trees, Ornamental Herbaceous Plants, Ornamental Woody Shrubs and Vines	10.0 lb/acre	
	Banding	At/Pre-Plant	Iris, Lily, Narcissus	10.0 lb/acre	Based on the use patterns, the potential for exposure should be minimal. No additional data are required. It is recommended that the workers comply with a 48 hour restricted entry interval in accordance with WPS.
			Cotton, Cabbage, Pepper, Chinese Cabbage, Okra, Peanuts	0.17 lb/1000 ft. row (3.0 lb/acre on 30" rows)	
		1 Year Stock	Iris, Lily, Narcissus	10.0 lb acre	
		Pre-Emergent, Post-Plant	Cabbage, Brussel Sprouts	0.17 lb/1000 ft. row (3.0 lb/acre on 30" rows)	
		At/Post-Transplant	Strawberries (Production and Nonbearing Nursery Stock), Cabbage, Brussel Sprouts, Eggplant, Citrus Fruit,[h] Ornamental Herbaceous Plants	10.05 lb/acre	

Table A. **Post-Application Exposure Analysis for Fenamiphos[a]**

Exposure Scenario (Scen. #) and Formulation[b]	Application Type[c]	Application Timing	Application Targets[d]	Maximum Rate (lb ai/acre)[d]	Exposure Comments[e]
Granular Application (III) Nemacur 10G & 15G		Pre-Transplant	Strawberries (production and Nonbearing Nursery Stock)	10.0 lb/acre	Based on the use patterns, the potential exists for significant worker exposure. Therefore, it is recommended that data be submitted to determine an appropriate restricted entry interval. Until acceptable data are reviewed, an interim minimum restricted entry interval of 48 hours should be followed in accordance with WPS.*
		Foliage on Plant[f]	Citrus Fruits	10.05 lb/acre	
Granular Application (III) Nemacur 15G	In-Furrow	At/Pre-Plant	Cotton, Garlic	4.5 lb/acre	Based on the use patterns, the potential for exposure should be minimal. No additional data are required. It is recommended that the workers comply with a 48 hour restricted entry interval in accordance with WPS.
		Post Plant	Ornamental Herbaceous Plants	12.0 lb/acre	Based on the use patterns (i.e., application timing), the potential for exposure exists. Because of limited use information, OREB is requesting clarification of the application technique and timing as it relates to the possibility of human contact.* Until additional information is received workers should comply with a 48 hour restricted entry interval in accordance with WPS.

Table A. **Post-Application Exposure Analysis for Fenamiphos[a]**

NOTES:

a The EPA Reg. Nos. for the fenamiphos formulations considered in this table include: (1) Nemacur 3: 3125-283; (2) Nemacur 10G: 3125-237; and (3) Nemacur 15G: 3125-236. For post-application exposure considerations, any crop with a pre-harvest interval of $\leq$ 30 days is noted on an individual basis.

b Denotes fenamiphos formulation for which this exposure scenario is applicable.

c Application type refers to the category as referred to in the LUIS system nomenclature (e.g., banding or broadcast).

d Values are defined based on the maximum application rate for the corresponding application target(s).

e Exposure comments indicate, in a qualitative fashion, the potential for post-application exposure (i.e., dermal and/or inhalation) to fenamiphos for each scenario of concern.

f LUIS reported application time as "foliar" which was interpreted to mean treatments anytime foliage was available on the target of interest. No fenamiphos applications are directly to foliar surfaces for any target/treatment scenarios.

g 2-day Pre-Harvest Interval established by Residue Chemistry Branch for this use.

h 30-day Pre-Harvest Interval established by Residue Chemistry Branch for this use.

* It should be noted that the WPS PR Notice 93-7 indicates fenamiphos is a Toxicity Category 2 chemical for the active ingredient; it should be classified as a Toxicity Category 1 pesticide. The registrant should respond according to the criteria for a Toxicity Category 1 pesticide. The restricted entry interval as proposed by the registrant for pineapples supersedes the 48 hour interval imposed by the WPS. Golf course turf use is exempt from 48 hr. REI, but entry should be restricted until sprays have dried or dusts have settled as stated in text (see Restricted Entry Interval Section). The shaded comments denote uses for which additional clarification is needed to adequately assess the potential exposure.

Attachment

ACTIVE INGREDIENT WORKSHEET – PART ONE

This two-page Worksheet lists possible label statements to require based on the characteristics of the a.i.

ACTIVE INGREDIENT: Fenamiphos

Uses Covered by Worksheet

☒ WPS ☐ NonWPS ☐ Both ☐ Home Use

PERSONAL PROTECTIVE EQUIPMENT

(Fill in sections A and B for an active ingredient ONLY if unusual risk concern, such as delayed-effect or sensitization. PPE requirements for each end-use product will be set based on the acute toxicity of that product.)

Maternal Tox NOEL = 0.5 mg/kg/day

A APPLICATOR PPE

Applicators and other handlers ▲ must wear:

~~☐ (except mixers, loaders, and others exposed to the concentrate)~~

(Choose this insert if Section B is filled in.)

Choose one item (or none) from each grouping:

16 ☐ Chemical-resistant protective suit ..... EXT
16 ☒ Coveralls over long-sleeved shirt and long pants
17 ☐ Coveralls over short-sleeved shirt and short pants
18 ☐ Long-sleeved shirt and long pants

20 ☒ Chemical-resistant gloves, such as ____

21 ☒ Chemical-resistant footwear plus socks
21 ☐ Shoes plus socks

24 ☐ Goggles
24 ☒ Protective Eyewear

23 ☒ Chemical-resistant headgear for overhead exposure

19 ☒ Chemical-resistant apron when cleaning equipment, ▲ (Select insert if not checked below in B) ☒ mixing, or loading

26 ☒ Respirator (specify type in section C)

B MIXER AND LOADER PPE

Mixers and loaders ▲ must wear:

☐ (and others exposed to the concentrate)

(Choose this insert if all persons exposed to the concentrate must wear this PPE and not the PPE selected in section A.)

Choose one item (or none) from each grouping:

6 ☐ Chemical-resistant protective suit ..... EXT
6 ☐ Coveralls over long-sleeved shirt and long pants
7 ☐ Coveralls over short-sleeved shirt and short pants
8 ☐ Long-sleeved shirt and long pants

0 ☐ Chemical-resistant gloves, such as _____

1 ☐ Chemical-resistant footwear plus socks
1 ☐ Shoes plus socks

4 ☐ Goggles
4 ☐ Protective Eyewear

3 ☐ Chemical-resistant headgear for overhead exposure

☐ Chemical-resistant apron when mixing or loading

☐ Respirator (specify type in section C)

C TYPE OF RESPIRATOR

[Select respirator type(s) for each active ingredient in category I or II for acute inhalation toxicity OR if respirator chosen in A or B. See Appendix B for instructions about selecting respirator type(s).]

☐ In enclosed areas only

26 ☐ ▲ A supplied-air respirator (MSHA/NIOSH approval number prefix TC-19C) OR (b) a self-contained breathing apparatus (SCBA) (MSHA/NIOSH approval number prefix TC-13F).

☐ In enclosed areas only OR ☐ In outdoor areas only

27 ☐ ▲ A respirator with either an organic-vapor-removing ..... EXT 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).

~~☐ In enclosed areas only OR ☐ In outdoor areas only~~

29 ☒ ▲ A dust/mist filtering respirator (MSHA/NIOSH approval number prefix TC-21C).

D REDUCE PPE WHEN ENGINEERING CONTROLS USED

(Already allowed in WPS; Select to allow for NonWPS uses)

31 ☐ When handlers use closed systems, enclosed cabs, or aircraft 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.

E USER SAFETY STATEMENTS

(See Appendix F in the GUIDE for other user safety requirements to consider for special situations.)

REQUIREMENTS:

40 ☒ Follow manufacturer's instructions for cleaning/ ..... ALL WPS maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

(Consider the statement below if delayed- or allergic-effect concerns AND formulated as a concentrate.)

40 ☒ Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them.

RECOMMENDATIONS:

39 ☒ Users should wash hands before eating, drinking, ... ALL chewing gum, using tobacco, or using the toilet.

39 ☒ Users should remove clothing immediately if pesticide ..... ALL gets inside. Then wash thoroughly and put on clean clothing.

37 ☒ Users should remove PPE immediately after handling ..... ALL this product. ▲ As soon as possible, wash thoroughly and change into clean clothing.

☒ [redacted]

(Select this insert if gloves are required PPE.)

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ACTIVE INGREDIENT WORKSHEET – PART TWO

ACTIVE INGREDIENT: . . . . . **Uses Covered by Worksheet** ☐ WPS ☐ NonWPS ☐ Both

F ENGINEERING CONTROLS

(See Appendix E if considering mandatory engineering controls, such as closed systems, enclosed cabs, or aircraft.)

G APPLICATION RESTRICTIONS

(See p. 46 in the Guide for other application restrictions, such as setback restrictions, to consider for special situations.)

45 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.
✓ WPS uses This is a WPS requirement.

~~☐ All NonWPS uses ☐ All NonWPS uses, except _____~~
Consider for most nonWPS uses, other than wide-area mosquito control, insect repellents, etc.)

H ENTRY RESTRICTIONS

48 **WPS ENTRY RESTRICTIONS**
(Set one REI for whole product OR different REI's for different uses. If subpart K data are not available, use acute toxicity of active ingredient to set REI. If delayed-effect concern, consider raising REI one level.)

Choose this item if only one REI for entire product:
☐ Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of ▲
- ☐ _____ days. . . . . NOT WPS, EPA SET
- ☐ 72 hours. . . . . NOT WPS, EPA SET
- ☐ 48 hours. . . . . I-D/S/EYE
- ☐ 24 hours. . . . . II-D/S/EYE
- ☐ 12 hours. . . . . III/IV-D/S/EYE

Choose this item if two REI's for product:
☒ Do not enter or allow worker entry into treated areas during the restricted-entry interval (REI) of 48 ☒ hours ☐ days, except for Pineapples (crop with different REI). The REI for Pineapples (crop with different REI) is 17 ☐ hours ☒ days.

Choose this item if more than two REI's for product:
☐ Do not enter or allow worker entry into treated areas during the restricted entry interval (REI).
- ☐ ____ ☐hours ☐days REI for _____(specify uses)
- ☐ ____ ☐hours ☐days REI for _____(specify uses)
- ☐ ____ ☐hours ☐days REI for _____(specify uses)
- ☐ ____ ☐hours ☐days REI for _____(specify uses)
- ☐ ____ ☐hours ☐days REI for _____(specify uses)

58 **Longer REI for organophosphates in arid areas:**

☐ Each 48-hour REI is increased to 72 hours . . . . . I-D/S/EYE-OP in outdoor areas where average annual rainfall is less than 25 inches a year.

18 **NON-WPS ENTRY RESTRICTIONS**
(See p. 50 in the Guide for entry restrictions, ventilation criteria, and notification requirements to consider for nonWPS uses.)

I EARLY ENTRY PPE

(Use the acute toxicity of active ingredient, then adjust if delayed-effects, allergic-effects, or other special concerns.)

☒ 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: . . . . . WPS

☐ PPE required for early entry to treated areas that involves contact with anything that has been treated is: . . . . . NonWPS

Choose one item (or none) from each grouping:

16 ☐ Chemical-resistant protective suit . . . . . EXT
16 ☒ Coveralls over long-sleeved shirt and long pants . . . . . I-D/S
17 ☐ Coveralls over short-sleeved shirt and short pants . . . . . II-D/S
17 ☐ Coveralls . . . . . III/IV-D/S
18 ☐ Long-sleeved shirt and long pants . . . . . NonWPS Only
(WPS requires at least coveralls for early entry.)

20 ☒ Chemical-resistant gloves, such as ____ . . . . . I/II/III/IV-D/S

21 ☒ Chemical-resistant footwear plus socks . . . . . I/II-D/S
21 ☐ Shoes plus socks . . . . . III/IV-D/S

24 ☐ Goggles . . . . . EXT
24 ☐ Protective Eyewear . . . . . I/II-EYE

23 ☒ Chemical-resistant headgear for overhead exposure I/II-D/S

26 ☐ Respirator (specify type in section C) . . . . . NonWPS Only or EXT
(WPS allows only handlers (not early-entry workers) to enter during an REI if inhalation is a concern. See p. 14 in the Guide.)

J NOTIFICATION

62 **WPS Only:** (WPS requires oral warning OR treated area posting for all WPS uses – select this statement to require both.)
☒ Notify workers of the application by warning them orally and by posting warning signs at entrances to treated areas. . . . . I-D/S

62 **NonWPS:** (Do not select the above statement– a custom statement is required.)

KEY TO PESTICIDE WORKSHEETS

▲	= Insert shaded text here, if selected
▒	= Text must be selected or crossed out
I, II, III, IV	= Toxicity Categories
1, 2, 3, etc	= Page numbers where discussed in GUIDE
ALL	= Consider for all products
D	= Acute Dermal Toxicity (oral=surrogate)
EXT	= Extraordinary PPE (heat/stress concern)
EYE	= Eye Irritation Potential
INH	= Acute Inhalation Toxicity (oral=surrogate)
NonWPS	= Uses outside Worker Protection Standard
NonWPS only	= Select for NonWPS only; not for WPS
OP	= Organophosphate Pesticide
S	= Skin Irritation Potential
WPS	= Uses under Worker Protection Standard

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