

GUIDANCE FOR THE
REREGISTRATION OF PESTICIDE PRODUCTS
CONTAINING
TRICHLORFON
AS THE ACTIVE INGREDIENT
(057901)
CAS 52-68-6

ENVIRONMENTAL PROTECTION AGENCY
OFFICE OF PESTICIDE PROGRAMS

WASHINGTON, D.C. 20460

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INTRODUCTION

The Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA Section 3(g), as amended in 1978, directs EPA to reregister all pesticides as expeditiously as possible. Each registrant of a manufacturing use product of the active ingredient who wishes to continue to sell or distribute that product must apply for reregistration.

To fulfill this Congressional mandate, we have established the Registration Standards program which will review all pesticide active ingredients first registered before January 1, 1977. These pesticides will be reviewed in use clusters which are prioritized on the basis of a ranking scheme giving preference to pesticides used on food and feed crops.

The Registration Standards program involves a thorough review of the scientific data base underlying pesticide registrations and an identification of essential but missing studies which may not have been required when the product was initially registered or studies that are now considered insufficient. Our reassessment results in the development of a regulatory position, contained in this document, on each pesticide and its uses. The regulatory position may require the registrant to modify product labels to provide additional precautionary statements, restrict the use of the pesticide to certified applicators, provide reentry intervals, modify uses or formulation types, specify certain packaging limitations, or other requirements to assure that proper use of the pesticide poses no potential adverse effects to human health or the environment.

The scientific review, which is not contained herein but is available upon request, concentrates on the technical grade of the active ingredient and identifies missing generic data. However, during the review of these data we are also looking for potential hazards that may be associated with the formulated (end-use) products that contain the active ingredient. If we find serious concerns, we will bring formulated products under the provisions of the Registration Standards program to the extent necessary to protect the public.

EPA has the authority under FIFRA §3(c)(2)(B) to require that certain registrants submit generic data that will answer our questions regarding the hazard that may result from the intended use of the pesticide under review. Further, §3(c)(2)(B) provides that these data are to be submitted by those registrants who do not qualify for the formulator's exemption [FIFRA §3(c)(2)(D)]. Normally, this means that the registrants who are responsible for filling the data gaps are the manufacturing-use product producers (basic

suppliers of the active ingredient). However, end-use producers will not qualify for the formulator's exemption if the source of their active ingredient: (1) is not registered with EPA, and/or (2) is produced by the registrant's firm, or a firm which has ownership in common with the registrant's firm. These end-use producers can qualify for the formulator's exemption if they change their source of supply to a registered source, provided the source does not share ownership in common with the registrant's firm. If the end-use product registrant decides to switch sources, a new Confidential Statement of Formula, EPA Form 8570-4, must be submitted to the appropriate Product Manager within 90 days of receipt of this Guidance Document. The chart on the following page shows what is generally required of those who do and do not qualify for the formulator's exemption in the Registration Standards program.

If you decide to request the Agency to discontinue the registration of any of your products subject to the reregistration requirements of this Guidance Document, please notify the Product Manager named in the cover letter, within 90 days from the receipt of this document, that you wish to voluntarily cancel the registration(s). If you decide to maintain your product registration(s), you must provide the information described in the following pages within the timeframes outlined. EPA will issue a notice of intent to cancel or suspend the registration of any currently registered product if you fail to comply with the requirements set forth in this Guidance Document.

This Guidance Document will be supplemented by EPA with additional information about compliance with data support requirements. In Monsanto v. Administrator, EPA was recently enjoined from implementing in any way the "mandatory data licensing" aspects of §3(c)(1)(D) of FIFRA. EPA is assessing the implications of the injunction for the reregistration process. Because this situation is currently unresolved, EPA has decided to proceed with the requirements in this Guidance Document which do not relate to compliance with the §3(c)(1)(D) provisions and to supplement the Document with additional guidance when circumstances permit. Failure to comply with the provisions of the subsequent guidance will also result in issuance by EPA of an intent to cancel the affected product registration(s).

Registrants are reminded that §6(a)(2) of FIFRA requires you at any time to submit factual information raising concerns of possible unreasonable adverse effects of a pesticide. You should notify the Agency of interim results of studies in progress if those results show possible unreasonable adverse effects.

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

II. REGULATORY POSITION AND RATIONALE

A. INTRODUCTION

This Guidance Document describes the Agency's regulatory position on registered manufacturing-use products (MPs) containing the insecticide trichlorfon. This position is based on a consideration of all accepted uses of pesticide products containing trichlorfon as the sole active ingredient, under Sections 3 and 24(c) of the FIFRA. Other considerations include the known chemical, environmental, and the toxicological characteristics of this pesticide and the established tolerances for residues in or on food and feed commodities. From these considerations the Agency sets forth the data and labeling requirements that must be met by registrants and applicants of trichlorfon products in order for a product to be registered or reregistered under this Document. Only those registration and labeling requirements for current and future substantially similar MPs are addressed here. Future MPs that differ appreciably from those described in this Document may require that amendments be made to this Document to reflect the differences.

B. Chemical Description and Use Profile

Trichlorfon is a common name for the insecticide dimethyl-(2,2,2-trichloro-1-hydroxyethyl)phosphonate as determined by

the International Organization For Standardization (ISO). The Chemical Abstracts Registry (CAS) number is 52-68-6, and the EPA Chemical Reference number is 057901. Trichlorfon registered in the U.S. is manufactured by Mobay Chemical Corp., Intrachem S.A., Aceto Chemical Co., Inc., and Makhteshim Beer-Sheva Chemical Works Ltd.

Technical trichlorfon is a white crystalline solid with a melting point of 81-82°C. The empirical formula is $C_4H_8O_4Cl_3P$ and the molecular weight is 257.6. The boiling point for technical trichlorfon is 100°C at 0.1 mm Hg and the vapor pressure is 7.8 mm Hg at 20°C. Trichlorfon is soluble in water (9% at 20°C), alcohols, methylene chloride and ketones and slightly soluble in aromatic solvents.

There are thirteen federally registered manufacturing-use products (MPs) containing trichlorfon as a single active ingredient and one MP containing trichlorfon in combination with other active ingredients. A total of 118 end-use products containing trichlorfon are registered under Section 3 of FIFRA and seventeen are registered under Section 24(c) of FIFRA (Special Local Needs Registration).

Trichlorfon is a selective insecticide registered for use on a variety of vegetable, fruit, and field crops; livestock;

ornamental and forestry plantings; in agricultural premises and domestic dwellings; and for the control of parasites on fish in designated aquatic environments. Trichlorfon is an organophosphate pesticide exhibiting both contact and stomach poison action. Trichlorfon is commercially available as emulsifiable concentrate, soluble concentrate (liquid, solid), pressurized liquid, ready to use liquid, pelleted/tableted, impregnated material, dust, granular, and wettable powder/dust. Most products are applied by using either ground or aerial equipment. The particular type of equipment is determined by site and equipment available. Trichlorfon is classified as a general use pesticide.

C. Regulatory Position

Based on a review and evaluation of data and other relevant information on trichlorfon, the Agency has made the following determinations:

1. The data that have been reviewed do not show that the criteria listed in 40 CFR §162.11(a) have been met or exceeded for the uses of trichlorfon listed in this Guidance Document. However, because of gaps in the data base, the Agency cannot complete a full assessment of trichlorfon.

2. The Agency is unable to complete a tolerance reassessment because of extensive residue chemistry and toxicology data gaps. Future requests for tolerances will not be considered or approved until all the chronic toxicology data requirements have been satisfied.
3. No federal or state reentry intervals have been established for trichlorfon. However, based on available environmental fate and toxicology data, the Agency is requiring an interim reentry interval of 24 hours. This reentry interval will be re-evaluated when the data requirements in Tables A and B have been satisfied.
4. Manufacturing-use pesticide products containing trichlorfon as the sole active pesticide ingredient may be registered for sale, distribution, reformulation, and use, subject to the terms and conditions specified in this Guidance Document.
5. Registrants must provide or agree to develop additional data, as specified in the data tables, in order to maintain existing registrations or to obtain new registrations for substantially similar MPs.
6. There are unique label precautions that must be included on the labeling for trichlorfon products. These precautions are cited in Section G of this Document.

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D. REGULATORY RATIONALE

[The Agency has determined that it should continue to allow the registration of trichlorfon}after considering the following:

1. Dichlorvos RPAR

Dichlorvos (DDVP), a putative metabolite of trichlorfon, was originally referred and accepted for the Rebuttable Presumption Against Registration (RPAR) process because scientific studies indicated that dichlorvos was mutagenic as well as potentially carcinogenic, neurotoxic and teratogenic in laboratory animals. The RPAR Decision Document on Dichlorvos was issued by the Agency on September 30, 1982. In this document (i.e., Decision Document on Dichlorvos, Office of Pesticides and Toxic Substances, U.S. EPA, Washington, D.C., September 30, 1982) the Agency evaluated the available data on dichlorvos in accordance with 40 CFR 162.11 (Criteria for Determination of Unreasonable Adverse Effects) and concluded that the existing evidence did not support the issuance of an RPAR for dichlorvos and consequently, that an RPAR for trichlorfon as a precursor of dichlorvos was also not warranted.

The DDVP Decision Document concluded that additional data on carcinogenicity and mutagenicity were needed to complete the risk assessment for dichlorvos. DDVP was removed from the

RPAR process and returned to the registration process. On March 23, 1983, the Agency issued a Data Call-In Notice under FIFRA Section 3(c)(2)(b), requesting data on potential mutagenic effects of dichlorvos be submitted by March 23, 1985. However, the Agency will wait until the continuing National Cancer Institute (NCI) dichlorvos bioassay on carcinogenicity is completed (currently scheduled for completion in 1985) and evaluated prior to determining if additional data on the carcinogenicity of dichlorvos will be required. Since dichlorvos can be metabolized from trichlorfon, evaluation of these studies will be necessary for the completion of the trichlorfon risk assessment.

2. Trichlorfon RPAR

Trichlorfon was originally referred and entered the Rebuttable Presumption Against Registration (RPAR) process* because scientific studies suggested that trichlorfon may be oncogenic, teratogenic, fetotoxic and mutagenic. In this document the Agency has evaluated the available data on trichlorfon in accordance with 40 CFR 162.11 (Criteria for Determination of Unreasonable Adverse Effects) and concluded that the existing evidence does not support the issuance of an RPAR for trichlorfon, because the existing data base is inadequate for a valid risk assessment. Additional data are required to complete the risk assessment for trichlorfon.

*Federal Register, Vol. 43, No. 77, Thurs. April 20, 1978.

Oncogenicity, chronic feeding, teratogenicity, mutagenicity, inhalation, dermal, neurotoxicity, and metabolism studies are required as specified in Table A. A decision as to whether trichlorfon should reenter the RPAR process will be made when these studies are completed.

3. Acute Toxicity

Adequate data indicate that trichlorfon is in Toxicity Category II on the basis of acute oral effects and Category III on the basis of dermal effects. Human hazard precautionary statements associated with these Toxicity Categories [40 CFR 162.10 (h)(2)(i)] should minimize the acute hazards associated with these routes of exposure. Adequate studies are unavailable to fully assess the acute inhalation, primary eye, primary dermal sensitization effects of trichlorfon to humans. The Agency has no valid acute inhalation, primary eye, dermal, or dermal sensitization data for trichlorfon manufacturing-use products.

4. Subchronic and Oncogenicity and Chronic Feeding

The Agency has no acceptable subchronic studies, chronic feeding or oncogenicity studies. The available data suggest that trichlorfon induces tumors at high dietary levels (500 and 1000 ppm), but are insufficient as the basis for an oncogenic risk assessment because of major protocol

design and/or reporting deficiencies, as follows:

- (i) High mortality in all groups (control and experimental), resulting in shortened duration of studies;
- (ii) inadequate dosage regimens;
- (iii) too few tissues (selected only at terminal sacrifice) in 5 or less animals per sex group examined;
- (iv) inadequate histopathological data.

Additional subchronic, oncogenicity and chronic feeding studies are required as specified in Table A.

5. Mutagenicity

There is sufficient evidence that trichlorfon or its degradation products is mutagenic to bacteria and mammalian cells in vitro, and thus these data requirements are satisfied.

Trichlorfon may also be clastogenic (cause chromosome breakage), as suggested by inadequately-controlled and/or inconclusive studies in vivo. Inconsistent results have been reported with many systems, however, and the instability of trichlorfon may be an important consideration in interpreting these data. Therefore, additional data on chromosome aberrations are required.

6. Teratogenicity

Trichlorfon administered by gavage to pregnant animals during the critical period of major organogenesis appears to be fetotoxic and teratogenic in rabbits, rats, mice and hamsters, but only at doses greater than those causing significant maternal effects and/or death. However, a teratology study in the rat where trichlorfon was fed during gestation did report an increased rate of anomalies at a dietary dose below the dose producing maternal effects. This study was not considered acceptable according to current Agency guidelines since the authors did not present the teratology data on a litter basis nor indicate the number of fetuses with specific malformations. Further, an insufficient number of pregnant females were available for analysis. Therefore the Agency is requiring an adequate dietary teratology study in the rat to resolve this issue.

7. Tolerance Assessment and Exposure

The ADI has been based on a NOEL for cholinesterase inhibition from a one-year feeding study in dogs. However, this study has now been judged inadequate according to current Agency guidelines since there were only 2 animals per sex per feeding level; individual animal data were not fully reported; and gross histopathologic examinations were incomplete or inadequate, and only a limited number of tissues were sampled. Further, hyperplastic adrenal nodules were found at all dose levels tested including the dose from which the ADI was

based. Because of the above listed deficiencies in the design and conduct of the study, the Agency lacks confidence in interpreting the results. The significance of the nodules will be determined by a required additional dog study. The present study does not support the ADI regardless of the reported results. A complete tolerance reassessment is necessary with a new data base, including chronic feeding studies, being required.

Based on residue chemistry and toxicology considerations, however, there is no adequate data to confirm that current tolerances are likely to expose the public to unreasonable adverse effects.

8. Incidents

The Pesticide Incident Monitoring System (PIMS) reports covering the period from 1966 to January 1980 include 52 incidents involving the pesticide trichlorfon. Of these, 22 involved trichlorfon alone, while the remaining 30 involved trichlorfon and other pesticides. The human and domestic animal adverse effects reported in these incidents appear to have been the result of improper handling, lack of protective clothing or ingestion of trichlorfon.

9. Ecological Effects

Based on studies available to assess hazards to wildlife and aquatic organisms, technical trichlorfon is characterized as highly to moderately toxic to both cold water and warm water fish, very highly toxic to freshwater invertebrates and highly toxic to birds. Label precautions required by this Guidance Document should reduce the hazard to wildlife and aquatic organisms.

10. Environmental Fate

Available data are insufficient to fully assess the environmental fate of trichlorofon. Trichlorfon degrades rapidly in aerobic soils under nonsterile conditions, but in sterile soils trichlorfon is stable. Trichlorfon also degrades rapidly in alkaline pond water but remains stable in pond water under acidic conditions. The major degradate in both soil and pond water is DDVP. Trichlorfon is very mobile in soils of varying textures and organic contents. The potential for ground water contamination by the parent compound may be mediated by its degradation in soil, however, the potential for ground water contamination by DDVP cannot be assessed due to data gaps. Forestry and aquatic field dissipation studies did not show a potential for trichlorfon to persist in leaves, leaf-litter, soil, water, or sediment, nor did they show a potential for trichlorfon to accumulate in nontarget fish.

11. Summary of Regulatory Rationale

Under FIFRA the Agency cannot cancel or withhold registration simply because data are missing or inadequate (see Sections 3(c)(2)(B) and 3(c)(7) of the FIFRA). Rather, issuance of this Guidance Document provides a mechanism for identifying data needs. These data will be reviewed and evaluated when they are received and the Agency will determine at that time whether they will affect the registrations of trichlorfon.

E. CRITERIA FOR PRODUCTS SUBJECT TO THE GUIDANCE DOCUMENT

This Guidance Document covers products that contain trichlorfon as the sole active ingredient and the chart in the Introduction describes the extent to which such products are subject to this Guidance Document. Applicants for registration or reregistration of such products must comply with all the terms and conditions described herein. This includes making a commitment to fill data gaps on a schedule specified by the Agency. Also, applicants for reregistration must follow the instructions contained in this Guidance Document and complete and submit the appropriate forms within the specified times. End-use products must be in compliance with the label changes specified in this Document.

F. ACCEPTABLE RANGES AND LIMITS

1. Product Composition Statements

To be covered under this Guidance Document, manufacturing-use products must contain trichlorfon as the sole active ingredient. Each MP formulation proposed for registration or reregistration must be fully described with an appropriate certification of limits.

2. Acute Toxicity Limits

The Agency will consider for registration any MP whose acute toxicity category (I, II, III, IV) is supported by adequate acute toxicology data and appropriate precautionary statements in the labeling.

G. REQUIRED LABELING

All manufacturing-use products containing trichlorfon must bear appropriate labeling as specified in 40 CFR 162.10.

1. Label Requirements for Manufacturing-Use Products

a. Ingredient Statement

The ingredient statement for MPs must list the active ingredient as:

(dimethyl-(2,2,2-trichloro-1-hydroxyethyl)
phosphonate. %.

b. Use Pattern Statement

All MPs must state that they are intended only for formulation into end-use products (EPs) for any of the use patterns listed below. A limiting factor will be the data that support each use pattern. No use may be included on the label where the registrant fails to agree to comply with the data requirements in either Table A or Table B for that use pattern.

° Terrestrial, non-domestic, food crop uses on:

Alfalfa (seed crop), clover (seed crop), alfalfa (including grass mixtures), artichoke (globe), banana, barley, beans (dried-type, succulent), beans-lima, blueberries, beets, Brussels sprouts, cabbage, carrot, cauliflower, citrus fruits, clover (including grass mixtures), collards, corn (field, pop, sweet), cotton, flax, lettuce, oats, pasture grass, peanuts, peas (field: blackeyed, cowpeas, crowder, southern), peppers, pumpkin, rangeland grasses, safflower, soybeans (seed crop), sugar beets, tomato, wheat; also: field crops, truck crops (field borders).

° Terrestrial, non-domestic, non-food uses on:

tobacco, ornamental evergreens (including pine), shade trees, woody shrubs and vines, herbaceous plants (including annuals, aster, chrysanthemum, daisy, iris, and nursery stock), lawns, turf, recreational areas (including picnic areas).

° Aquatic, non-food uses on: bait fish, gold fish.

° Domestic outdoor uses on: ornamental lawns, domestic dwellings (outdoor).

° Forestry uses: forest trees.

° Greenhouse, food uses on: cucumbers, peppers, spinach, beets (root crop), beans (lima, green and wax), corn (sweet and field), peas. These uses are from a 24(c) label restricting applications to research crops.

- ° Greenhouse, non-food use on:

Weed hosts of plant pathogens. This use is from a 24(c) label.

- ° Indoor uses:

Dairy cattle (non-lactating), beef cattle, horses, dairy barns (including manure and garbage dump treatment), milking rooms including manure and garbage dump treatment, animal buildings and premises (including barns, shelters, stables, feedlots, holding pens, manure and garbage dump treatment), animal hospitals, cat quarters, dog quarters (including kennels), dogs, domestic dwellings, garbage dumps, latrines, recreational areas (including picnic areas), poultry packing plants, red meat packing plants, commercial, institutional, and industrial areas (inedible product areas), eating establishments (inedible product areas), food processing, handling and storage plants/areas (inedible product areas).

The attached "EPA Index to Registered Pesticides" entry summarizes all currently acceptable uses for single active ingredient products containing trichlorfon, including sites of application, target pests, dosage rates, restrictions and limitations, and the method and frequency of application.

c. Precautionary Statements

Labels for all MP products containing trichlorfon must bear statements reflecting the hazards to man and the environment [40 CFR 162.10]. Trichlorfon is in Toxicity Category II on the basis of acute oral effects and Category III on the basis of acute dermal effects. The Agency has no valid acute inhalation, primary eye, primary dermal, or dermal sensitization data for trichlorfon MP products.

- ° Based on data reviewed by the Agency, the environmental hazard statement below is required to appear on all MPs containing trichlorfon:

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

2. Label Requirements for End-Use Products

a. Ingredient Statement

The ingredient statement for EPs must list the active ingredient as:

dimethyl-[2,2,2-trichloro-1-hydroxyethyl]
phosphonate.....%.

b. Precautionary Statements

Labels for all EPs containing trichlorfon must bear a statement reflecting the hazard to man and the environment [40 CFR 162.10].

- ° Based on data reviewed by the Agency, the following environmental hazards statements are required to appear on the EPs:

All trichlorfon products intended for outdoor use must bear the following statement:

"This pesticide is toxic to fish and wildlife and is extremely toxic to aquatic invertebrates."

Additional precautionary statements are required as indicated below:

Trichlorfon products intended for direct applications to ponds:

"Consult your State Fish and Game Agency before applying this product to public waters. Permits may be required before treating such waters."

Trichlorfon products intended for use in forestry:

"Do not apply directly to water or wetlands not under forest canopy. Runoff and drift from treated areas may be hazardous to aquatic organisms in neighboring areas."

Trichlorfon products intended for outdoor uses other than direct applications to ponds or forestry:

"Do not apply to water or wetlands. Runoff from treated areas may be hazardous to aquatic organisms in neighboring areas."

The Agency is currently considering various approaches to address the endangered species concerns for this and other chemicals. This standard may be amended to incorporate the results of this additional review.

- ° To avoid the possible misuse of trichlorfon in eating establishments the following statement is required for all EPs used in eating establishments.

"This product shall not be used in rooms or areas where food is either consumed or prepared."

- ° Bee precautionary language per PR Notice 68-19 is no longer required since the data indicates that trichlorfon has a low toxicity to bees.

- ° The reentry statement below must appear on all trichlorfon labels with directions for use on crops:

"Do not reenter treated fields within 24 hours unless protective clothing is worn."

Refer to PR Notice 83-2 for additional information on reentry and worker protection labeling requirements.

H. TOLERANCE REASSESSMENT

The previously established tolerances for combined residues of trichlorfon and its cholinesterase-inhibiting metabolites are published in 40 CFR 561.190 and 40 CFR 180.198. A summary of these tolerances is presented in Table 1.

The data for trichlorfon residues in or on the following raw agricultural commodities are adequate to fill the residue data requirements:

beets, blueberries; peanut hulls and vine hay; birdsfoot trefoil hay (including chaff); corn grain; fresh corn; corn forage and fodder, forage of barley, oats, and wheat; bananas; peanuts; and the fat, meat, and meat by-products of goats, horses, and sheep.

Sufficient residue data are not available to assess the adequacy of the trichlorfon tolerances for the following commodities (and their processed products, if applicable):

carrots, sugar beets and tops, lettuce, Brussels sprouts, cabbage, cauliflower, collards, cowpeas, dried beans, lima beans, snap beans, bean vines, cowpea vines, lima bean vines and hay, peppers, tomatoes, pumpkins, citrus fruits and dried citrus pulp, barley grain and straw,

oat grain and straw, wheat grain and straw, pasture and rangeland grass forage and hay, alfalfa forage and hay, clover forage and hay, artichokes, cottonseed, flax seed and straw, safflower seed, cattle (fat, meat, and meat by-products), and milk.

Residue data are required for processed products of the following commodities to determine the necessity of food/feed additive tolerances:

citrus fruits; cottonseed; wheat grain; sugar beets; and tomatoes.

Residue data for tobacco are required to determine the human hazard associated with this trichlorfon use.

Poultry residue studies are required to determine the necessity of trichlorfon tolerances for poultry fat, meat, and meat byproducts; a tolerance for eggs is not required.

No group crop tolerances are appropriate at the present time.

Residue data and tolerance proposals must be submitted for the following raw agricultural commodities for which tolerances are not currently established, but intrastate registrations exist:

strawberries; watermelon; broccoli; kale; spinach; garlic; onions; radishes; rutabagas; celery; and turnips.

No new crop groupings can be established at this time because of extensive residue chemistry data gaps. Compatibility between Codex MRLs and U.S. tolerances will be assessed when

data gaps specified in Table A have been submitted and evaluated.

The lack of adequate animal and plant metabolism studies precludes a determination of the trichlorfon residues of concern in plants and animals. Before the submission of additional residue data, it is imperative that the residues of concern be determined. The registrant is to conduct adequate plant and animal metabolism studies prior to generating residue data so that all the components of the residue (parent compound and metabolites) can be identified.

The previously established ADI for trichlorfon is 0.1250 mg/kg/day and the TMRC, based on the established tolerances for residues of trichlorfon as cited under 40 CFR 180.198, is 0.0627 mg/day assuming a 1.5 kg diet; the TMRC currently accounts for only 0.84% of the ADI. No adequate study currently supports the previously established ADI. A new ADI will be established when the chronic toxicity data requirements specified in Table A are satisfied.

TABLE I.
SUMMARY OF PRESENT TOLERANCES a/

Commodity	Tolerances (ppm)			
	United States	Canada	Mexico	International Codex 9/
Alfalfa	60.0	-	60.0	-
Alfalfa, hay	90.0	-	90.0	-
Artichokes	0.1 (N) ^{b/}	0.1 (N)	0.1 (N)	0.1
Apples	-	-	-	2.0
Bananas	2.0 ^{c/}	0.1 (N)	-	0.2
Barley, forage	50.0	-	-	-
Barley, grain	0.1 (N)	-	-	-
Barley, straw	1.0	-	-	-
Beans, dried	0.1 (N)	0.1 (N)	0.1 (N)	0.1
Beans, lima	12.0 ^{d/}	-	-	0.1
Beans, lima vine hay	12.0	-	-	-
Beans, lima vines	12.0	-	-	-
Beans, blackeyed	-	-	-	0.1
Beans, snap	0.1 (N)	-	-	-
Beans, vines	1.0	-	-	-
Beets	0.1 (N)	0.1 (N)	-	0.2
Beets, sugar	0.1 (N)	-	-	-
Beets, sugar tops	12.0	-	-	-
Birdsfoot trefoil, hay	90.0	-	-	-
Blueberries	0.1 (N)	0.1 (N)	-	-
Brussels sprouts	0.1 (N)	0.1 (N)	-	0.2
Cabbage	0.1 (N)	0.1 (N)	0.1 (N)	0.5
Carrots	0.1 (N)	0.1 (N)	-	-
Cattle fat	0.1 (N)	-	0.1 (N)	0.1
Cattle, mby ^{e/}	0.1 (N)	-	-	-
Cattle, meat	0.1 (N)	-	0.1 (N)	0.1
Cattle, offal	-	-	-	0.1
Cauliflower	0.1 (N)	0.1 (N)	-	0.2
Celery	-	-	-	0.2
Cereal grains	-	0.1 (N)	-	0.1
Citrus fruit	0.1 (N)	-	0.1 (N)	0.1
Citrus (dry pulp)	2.5	-	2.5	-
Cherries	-	-	-	0.1
Chili peppers	-	-	0.1 (N)	-
Chickpeas	-	-	0.1 (N)	-
Clover	60.0	-	-	-
Clover hay	90.0	-	-	-
Collards	0.1 (N)	0.1 (N)	-	-
Corn, fodder	30.0	-	-	-
Corn, forage	30.0	-	30.0	-
Corn, fresh	0.1 (N) ^{f/}	0.1 (N)	0.1 (N)	-
Corn, grain	0.1 (N)	0.1 (N)	0.1 (N)	-
Cottonseed	0.1 (N)	-	0.1 (N)	0.1
Cowpeas	0.1 (N)	-	-	0.1
Cowpeas, vines	1.0	-	-	-

TABLE I.
SUMMARY OF PRESENT TOLERANCES ^{a/}(continued)

Commodity	Tolerances (ppm)			
	United States	Canada	Mexico	International Codex ^{g/}
Flax, straw	1.0	-	-	-
Flaxseed	0.1 (N)	-	-	-
Goats, fat	0.1 (N)	-	-	-
Goats, mbyp	0.1 (N)	-	-	-
Goats, meat	0.1 (N)	-	-	-
Grapes	-	-	-	0.5
Grass, pasture	60.0	-	-	-
Grass, pasture hay	90.0	-	-	-
Grass, range	240.0	-	-	-
Grass, range, hay	240.0	-	-	-
Horses, fat	0.1 (N)	-	-	-
Horses, mbyp	0.1 (N)	-	-	-
Horses meat	0.1 (N)	-	-	-
Kale	0.1 (N)	0.1 (N)	-	0.2
Lettuce	0.1 (N)	0.1 (N)	0.1 (N)	0.5
Linseed	-	-	-	0.1
Milk	0.01 (N)	-	-	0.05
Mustard green	-	-	-	0.1
Oats, forage	50.0	-	-	-
Oats, grain	0.1 (N)	-	-	-
Oats, straw	1.0	-	-	-
Peaches	-	-	-	0.2
Peanuts	0.05 (N)	-	0.05	0.1
Peanuts, vine hay	4.0	-	-	-
Peanuts, vine hulls	4.0	-	4.0	-
Peppers	0.1 (N)	0.1 (N)	-	1.0
Pigs, carcass meat	-	-	-	0.1
Pigs, edible offal	-	-	-	0.1
Pigs, fat	-	-	-	0.1
Pumpkins	0.1 (N)	-	-	0.1
Radish	-	-	-	0.1
Rapeseed	-	0.1 (N)	-	0.1
Rutabagas	-	0.1 (N)	-	-
Safflower seed	0.1 (N)	-	0.1	0.1
Salisfy	-	0.1 (N)	-	-
Sheep, fat	0.1 (N)	-	-	-
Sheep, mbyp	0.1 (N)	-	-	-
Sheep, meat	0.1 (N)	-	-	-
Soya, beans	-	-	-	0.1
Squash	-	-	0.1 (N)	-
Spinach	-	0.1 (N)	-	0.5
Sugar beets	-	0.1 (N)	-	0.05

TABLE I.
SUMMARY OF PRESENT TOLERANCES ^{a/} (continued)

Commodity	Tolerances (ppm)			
	United States	Canada	Mexico	International Codex ^{g/}
Stawberries	-	-	-	1.0
Tomatoes	0.1 (N)	0.1 (N)	0.1 (N)	0.2
Turnips	-	0.1 (N)	-	0.1
Wheat, forage	50.0	-	50.0	-
Wheat, grain	0.1 (N)	-	0.1 (N)	-
Wheat, straw	1.0	-	1.0	-

a/ Tolerance is based on residues of trichlorfon and its cholinesterase-inhibiting metabolites.

b/ (N) is negligible residues

c/ NMT 0.2 ppm will be present after peel is removed.

d/ Reflecting 0.1 ppm (N) in or on shelled beans.

e/ MBYP = Meat byproducts

f/ Including sweet K + CWHR.

g/ International Codex "tolerances" are expressed as MRLs or maximum residue limits.

Index of Currently Acceptable Uses**
EPA Index to Pesticide Chemicals

c057901

DIMETHYL (2,2,2-TRICHLORO-1-HYDROXYETHYL)PHOSPHONATE*

TYPE PESTICIDE: Insecticide

FORMULATIONS:

Tech (90%, 97%, 98%)
FI (80%, 82%)
D (3%, 5%, 8%)
G (0.4%, 0.92%, 1%, 3%, 3.5%, 4%, 5%, 6.2%)
P/T (5%, 37.8%, 90%)
WP/D (37.8%)
Impr (1%)
SC/L (4 lb/gal, 6 lb/gal, 40.5%)
SC/S (50%, 80%)
RTU (1.5 lb/gal, 8%)

GENERAL WARNINGS AND LIMITATIONS: Trichlorfon does not significantly affect beneficial insects (parasites, predators, and pollinators) especially when applied at the minimum recommended rates per acre. Trichlorfon is not specifically recommended for the control of aphids, cabbage loopers, or mites, but some suppression of these pests may result from listed dosages. To avoid plugging, use 50 mesh screens in sprayers when applying soluble concentrate/solid formulations. Do not use in conjunction with alkaline materials such as lime or lime sulfur, or with summer oils or dormant oils.

Definition of Terms:

**Computed from tablespoon/teaspoon dosage.

***Exact computation of actual dosage is not possible because of the lack of weight/volume information on the label. Extrapolation from other formulations reveals that the dosage from this label appears to fall within the range shown by formulations with known weight/volume ratios.

Claims for pest control limited to suppression of population are indicated by parenthesized pest name.

*trichlorfon

Dipterex

Dylox

Neguvon

trichlorphon

**covers single active ingredient labeling only

Issued: 3-22-82

III-057901-1

Provisional Update: 6-14-84

EPA Index to Pesticide Chemicals

DIMETHYL (2,2,2-TRICHLORO-1-HYDROXYETHYL)PHOSPHONATE

<u>Site And Pest</u>	<u>Dosages and Formulation(s)</u>	<u>Tolerance, Use, Limitations</u>
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AGRICULTURAL CROPS

General Warnings and Limitations: Do not apply to or allow to drift onto varieties of sorghum which are sensitive to phosphates as burning of sorghum or milo may occur. Injury to foliage and fruit of apples has been reported. For soluble concentrate/liquid formulations, apply per acre rates in a minimum of 1 gallon of water per acre by aircraft or ground equipment or apply undiluted by aircraft or ultra low volume ground equipment. For soluble concentrate/solid formulations, apply in sufficient water for thorough coverage by aircraft or ground equipment.

/23001AA /28069AA	<u>Alfalfa</u>	60 ppm (fresh)
	<u>Alfalfa-Grass Mixture</u>	90 ppm (hay)
		No pregrazing or preharvest interval through 1 pound per acre of dilute spray formulations for foliar application. Do not make more than 3 applications per cutting.
		3 day pregrazing or preharvest interval through 1 pound per acre of ultra low volume spray formulations for foliar application. Do not make more than 1 application per cutting.
		7 day pregrazing or preharvest interval through 1 pound per acre of dust formulations for foliar application. Do not make more than 1 application per cutting.
		14 day pregrazing or preharvest interval through 1 pound per acre of bait formulations for broadcast soil application. Do not make more than 1 application per cutting.
		Use patterns for spray formulations include alfalfa in mixed stands with grasses.
ITBJADA	Alfalfa caterpillar 0.375-0.5 lb/A (4-6 lb/gal SC/L) (40.5% SC/L)*** (50-80% SC/S)	Foliar application. May be applied by aircraft. Some 4 pounds per gallon soluble concentrate/liquid formulations may be applied undiluted as an ultra low volume spray by aircraft or ground equipment.

EPA Index to Pesticide Chemicals

DIMETHYL (2,2,2-TRICHLORO-1-HYDROXYETHYL)PHOSPHONATE

<u>Site and Pest</u>	<u>Dosages and Formulation(s)</u>	<u>Tolerance, Use, Limitations</u>
<u>Alfalfa cluster (continued)</u>		
ITBMBUA Alfalfa webworm	0.25-1 lb/A (4-6 lb/gal SC/L) (40.5% SC/L)*** (50-80% SC/S)	
IQAMABA Alfalfa plant bug	1 lb/A	
ITBCCFA Armyworm	(4-6 lb/gal SC/L)	
IQAMARA Lygus bugs (including tarnished plant bug)	(40.5% SC/L)***	
IQAQAAA Stink bugs	(50-80% SC/S)	
ITBCCNA Beet armyworm	0.5-1 lb/A	
IRAFAAA Leafhoppers	(4-6 lb/gal SC/L)	
ITBCCBA Variegated cutworm	(40.5% SC/L)*** (50-80% SC/S)	
ITBCCRA Western yellow-striped armyworm	0.5 lb/A (4-6 lb/gal SC/L) (40.5% SC/L)*** (50-80% SC/S)	
/23001AA (Alfalfa)		
ITBJADA Alfalfa caterpillar	0.9-1 lb/A	Foliar application. May be applied by aircraft.
ITBMBUA Alfalfa webworm	(3-8% D)	
ITBCCNA Beet armyworm		
IQAMARA Lygus bugs (including tarnished plant bug)		
IQAQAAA Stink bugs		
ITBCCBA Variegated cutworm		
ITBCCRA Western yellow-striped armyworm		
ITBCCFA Armyworm	1 lb/A (5% D)	Broadcast soil application. May be applied by aircraft. For fields with previous infestations or suspected infestations of cutworms, apply prior to or just after planting.
ITBCCNA Beet armyworm	(3-5% G)	
IVAHAAA Crickets (including mole crickets)	[Bait]	
ITBCABA Cutworms (climbing and surface feeding including		

EPA Index to Pesticide Chemicals

DIMETHYL (2,2,2-TRICHLORO-1-HYDROXYETHYL)PHOSPHONATE

<u>Site and Pest</u>	<u>Dosages and Formulation(s)</u>	<u>Tolerance, Use, Limitations</u>
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Alfalfa cluster (continued)

Pest list continued from previous page.

	black cutworm, granulate cut- worm, variegated cutworm, western bean cutworm)		
ITABACA	Saltmarsh cater- pillar		
ITBCCRA	Western yellow- striped armyworm		
ITBCCFA	Armyworm	1 lb/A (5% P/T) [Bait]	Broadcast soil application. Make 1 application per cutting.
/23001BA	<u>Alfalfa</u> (seed crop)		90 ppm (hay)
/23003BA	<u>Clover</u> (seed crop)		7 day preharvest interval through 1.5 pounds per acre for foliar ap- plication. Do not cut green crop for feed or forage. Chaff may be used for feed or forage.
ITBCCFA	Armyworm	1-1.5 lb/A	Foliar application to seed crop.
IQAMARA	Lygus bugs	(4-6 lb/gal	May be applied by aircraft.
IQAQAAA	Stink bugs	SC/L)	
ITBCCBA	Variegated cutworm	(40.5% SC/L)*** (50-80% SC/S)	

Alfalfa-Grass Mixture See Alfalfa cluster.

/13018AA	<u>Artichoke (Globe)</u>		0.1 ppm 14 day preharvest interval through 2.5 pounds per acre for foliar ap- plication.
ITBLABA	Artichoke plume moth	2-2.5 lb/A (5-8% D)	Foliar application. May be applied by aircraft.

EPA Index to Pesticide Chemicals

DIMETHYL (2,2,2-TRICHLORO-1-HYDROXYETHYL)PHOSPHONATE

<u>Site and Pest</u>	<u>Dosages and Formulation(s)</u>	<u>Tolerance, Use, Limitations</u>
/06002AA <u>Banana</u>		2 ppm 0.2 ppm (in pulp after peel is removed) No preharvest interval through 0.5 pound per acre for foliar application.
ITAJACA Banana caterpillar	0.4-0.5 lb/A (80% SC/S)	Foliar application. Repeat at 14 day intervals as needed.
/28063AA <u>Barley</u>		0.1 ppm (grain and flaxseed)
/28009AA <u>Flax</u>		1 ppm (straw)
/28062AA <u>Oats</u>		50 ppm (barley, oats and wheat forage)
/28065AA <u>Wheat</u>		21 day preharvest interval through 1 pound per acre for foliar application or soil application (broadcast). For spray formulations, do not make more than 3 applications during the growing season. Applications may be made without removal of livestock. For bait formulations, do not graze treated fields. Do not feed treated straw to dairy or meat animals.
ITBCCFA Armyworm	1 lb/A	Broadcast soil application. May be applied by aircraft. For fields with previous infestations or suspected infestations of cutworms, apply prior to or just after planting.
IVAHAAA Crickets	(5% D)	
ITABACA Saltmarsh caterpillar	(4-5% G) [Bait]	
ITBCABA Cutworms (climbing and surface feeding)		
ITBCCFA Armyworm	0.5-1 lb/A	Foliar application. May be applied by aircraft.
ITBCCNA Beet armyworm	(4-6 lb/gal	
ITBMBWA Beet webworm	SC/L)	
ITBCCBA Variegated cutworm	(40.5% SC/L)*** (50-80% SC/S)	
ITBCBVA Bertha armyworm	1 lb/A	
ITBWafa Diamondback moth	(4-6 lb/gal	
	SC/L)	
	(40.5% SC/L)*** (50-80% SC/S)	

EPA Index to Pesticide Chemicals

DIMETHYL (2,2,2-TRICHLORO-1-HYDROXYETHYL)PHOSPHONATE

<u>Site and Pest</u>	<u>Dosages and Formulation(s)</u>	<u>Tolerance, Use, Limitations</u>
/15001AA	<u>Beans, Dried-Type</u>	0.1 ppm (beans, dried and snap)
/15003AA	<u>Beans, Succulent</u>	1 ppm (vines)
/15025AA		14 day preharvest interval through 1.5 pounds per acre for foliar application or soil application (band or broadcast). Do not feed treated vines to dairy or meat animals.
ITBCCFA	Armyworm	1-1.5 lb/A
IOAAAEA	Dipterous leaf-miners	(3-8% D) (4-6 lb/gal
IQAMARA	Lygus bugs	SC/L)
INAPAFa	Mexican bean beetle	(40.5%
IQAQAAA	Stink bugs	SC/L)***
ITBCCBA	Variegated cutworm	(50-80% SC/S)
ITBCBTA	Western bean cutworm	1-1.5 lb/A (3-8% D) or 0.5-1 lb/A (4-6 lb/gal SC/L) (40.5% SC/L)*** (50-80% SC/S)
ITBCCFA	Armyworm	1.5 lb/A
ITBCCNA	Beet armyworm	(5% D)
IWAHAAA	Crickets (including mole crickets)	(3.5-5% G) [Bait]
ITBCBAA	Cutworms (climbing and surface feeding including black cutworm, granulate cutworm, variegated cutworm, western bean cutworm)	Soil application (band). Apply over the row and around base of plants. Broadcast soil application. May be applied by aircraft. For fields with previous infestations or suspected infestations of cutworms, apply prior to or just after planting.
INBUAAA	Darkling beetles	
ITABACA	Saltmarsh caterpillar	
ITBCCRA	Western yellow-striped armyworm	

EPA Index to Pesticide Chemicals

DIMETHYL (2,2,2-TRICHLORO-1-HYDROXYETHYL)PHOSPHONATE

<u>Site and Pest</u>	<u>Dosages and Formulation(s)</u>	<u>Tolerance, Use, Limitations</u>
/15025AA <u>Beans, Lima</u>		12 ppm (beans [reflecting 0.1 ppm in or on the shelled beans], bean vines, bean vine hay) 14 day preharvest interval through 1.5 pounds per acre for foliar application. 30 day preharvest interval through 1.5 pounds per acre of bait formulations for soil application (band or broadcast). Do not make more than 2 applications during the growing season.

Refer to Beans, Dried-Type cluster.

/15025CA	<u>Beans, Lima</u> (greenhouse research crops)	N.F.
/15003CA	<u>Beans, Succulent</u> (greenhouse research crops)	
/14001CA	<u>Beets</u> (root crop) (greenhouse research crops)	
/28005CA	<u>Corn, Field</u> (greenhouse research crops)	
/15005CA	<u>Corn, Sweet</u> (greenhouse research crops)	
/10010CA	<u>Cucumbers</u> (greenhouse research crops)	
/28016CA	<u>Peas</u> (greenhouse research crops)	
/28017CA	<u>Peppers</u> (greenhouse research crops)	
/13024CA	<u>Spinach</u> (greenhouse research crops)	

This use only occurs on Special Local Need (24(C)) labeling and has not been included in this entry. Refer to appropriate labeling for use information and limitations.

Beans, Succulent See Beans, Dried-Type cluster.

EPA Index to Pesticide Chemicals

DIMETHYL (2,2,2-TRICHLORO-1-HYDROXYETHYL)PHOSPHONATE

<u>Site and Pest</u>		<u>Dosages and Formulation(s)</u>	<u>Tolerance, Use, Limitations</u>
/14001AA	<u>Beets</u>		0.1 ppm 28 day preharvest interval through 1.5 pounds per acre for foliar ap- plication or soil application (band or broadcast). Do not harvest tops for food.
ITBMBUA	Alfalfa webworm	1-1.5 lb/A	Foliar application. May be applied by aircraft.
ITBCCNA	Beet armyworm	(3-8% D)	
ITBMBWA	Beet webworm		
IOAAAEA	Dipterous leaf- miners		
IQAMARA	Lygus bugs		
ITABACA	Saltmarsh cater- pillar		
ITBCCBA	Variegated cutworm		
ITBMBUA	Alfalfa webworm	1 lb/A	
ITBMBWA	Beet webworm	6 lb/gal	
IOAAAEA	Dipterous leaf- miner	SC/L) (50-80% SC/S)	
ITABACA	Saltmarsh cater- pillar		
ITBCCNA	Beet armyworm	1-1.5 lb/A	
IQAMARA	Lygus bugs	(6 lb/gal SC/L) (50-80% SC/S)	
ITBCCBA	Variegated cutworm	0.5-1 lb/A (6 lb/gal SC/L) (50-80% SC/S)	

EPA Index to Pesticide Chemicals

DIMETHYL (2,2,2-TRICHLORO-1-HYDROXYETHYL)PHOSPHONATE

<u>Site and Pest</u>	<u>Dosages and Formulation(s)</u>	<u>Tolerance, Use, Limitations</u>
<u>Beets (continued)</u>		
Armyworm	1.5 lb/A	Soil application (band). Apply over the row and around base of plants.
Crickets	(5% D)	
Saltmarsh caterpillar	(3-5% G)	Broadcast soil application. May be applied by aircraft. For fields with previous infestations or suspected infestations of cutworms, apply prior to or just after planting.
Surface feeding cutworms	[Bait]	
<u>Beets (root crop)</u>		
(greenhouse research crops)		
	See Bean, Lima (greenhouse research crops) cluster.	
<u>Birdsfoot trefoil</u> (seed crop)	90 ppm (hay)	
	This use only occurs on Special Local Need (24(C)) labeling and has not been included in this entry. Refer to appropriate labeling for use information and limitations.	
<u>Blueberry</u>	0.1 (N) ppm	
	This is a new use established subsequent to the development of this entry. Refer to appropriate labeling for use information and limitations.	
<u>Brussels Sprouts</u>	0.1 ppm	
<u>Cabbage</u>	21 day preharvest interval through 1 pound per acre for foliar application or soil application (band or broadcast).	
<u>Cauliflower</u>		
Diamondback moth	1 lb/A	Foliar application. May be applied by aircraft.
Imported cabbage-worm	(3-8% D)	
Variegated cutworm		
Western yellow-striped armyworm		

EPA Index to Pesticide Chemicals

DIMETHYL (2,2,2-TRICHLORO-1-HYDROXYETHYL)PHOSPHONATE

<u>Site and Pest</u>	<u>Dosages and Formulation(s)</u>	<u>Tolerance, Use, Limitations</u>
<u>Brussels Sprouts cluster (continued)</u>		
ITBJAHA	Imported cabbage-worm	0.5-1 lb/A (6 lb/gal
ITBCCBA	Variegated cutworm	SC/L) (50-80% SC/S)
ITBCCRA	Western yellow-striped armyworm	0.5 lb/A (6 lb/gal SC/L) (50-80% SC/S)
ITBCCFA	Armyworm	1 lb/A
ITBCCNA	Beet armyworm	(5% D)
IWAHAAA	Crickets (including mole crickets)	(3-5% G) [Bait]
ITBCABA	Cutworms (climbing and surface feeding including black cutworm, granulate cutworm, variegated cutworm, western bean cutworm)	Soil application (band). Apply over the row and around base of plants. Broadcast soil application. May be applied by aircraft. For fields with previous infestations or suspected infestations of cutworms, apply prior to or just after planting.
ITABACA	Saltmarsh caterpillar	
ITBCCRA	Western yellow-striped armyworm	

EPA Index to Pesticide Chemicals

DIMETHYL (2,2,2-TRICHLORO-1-HYDROXYETHYL)PHOSPHONATE

<u>Site and Pest</u>		<u>Dosages and Formulation(s)</u>	<u>Tolerance, Use, Limitations</u>
/14003AA	<u>Carrot</u>		0.1 ppm 28 day preharvest interval through 1.5 pounds per acre for foliar ap- plication. Do not harvest tops for food or feed.
ITBCCNA	Beet armyworm	1-1.5 lb/A	Foliar application. May be applied by aircraft.
IOAAAEA	Dipterous leaf- miners	(3-5% D)	
IQAMARA	Lygus bugs		
ITABACA	Saltmarsh cater- pillar		
ITBCCBA	Variegated cutworm		
ITBCCRA	Western yellow- striped armyworm		
ITBCCNA	Beet armyworm	1-1.5 lb/A	
IQAMARA	Lygus bugs	6 lb/gal SC/L) (50-80% SC/S)	
IOAAAEA	Dipterous leaf- miners	1 lb/A 6 lb/gal SC/L) (50-80% SC/S)	
ITBCCBA	Variegated cutworm	0.5-1 lb/A (6 lb/gal SC/L) (50-80% SC/S)	
ITABACA	Saltmarsh cater- pillar	1.5 lb/A (6 lb/gal SC/L) (50-80% SC/S)	

EPA Index to Pesticide Chemicals

DIMETHYL (2,2,2-TRICHLORO-1-HYDROXYETHYL)PHOSPHONATE

<u>Site and Pest</u>	<u>Dosages and Formulation(s)</u>	<u>Tolerance, Use, Limitations</u>
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Carrot (continued)

ITBCCRA	Western yellow-striped armyworm	0.5 lb/A (6 lb/gal SC/L) (50-80% SC/S)
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Cauliflower

See Brussels Sprouts cluster.

/02000AA

Citrus Fruits

0.1 ppm
2.5 ppm (in dried citrus pulp)
7 day preharvest interval through 4 pounds per acre for foliar application. Apply only 1 application by aircraft.
21 day preharvest interval through 4 pounds per acre for foliar application. Do not make more than 3 applications during the fruiting period, 1 by aircraft and not more than 2 additional applications by ground equipment.
Apply in a minimum of 1 gallon of water per acre by aircraft or in 200 to 250 gallons of water per acre by ground equipment.

ITAPAJA	Avocado leafroller	4 lb/A	Use limited to CA.
ITBCCUA	Citrus cutworm	(50-80% SC/S)	Foliar application.
ITANAXA	Citrus looper		
ITBUALA	Orange tortrix		
ITBHAFA	Black swallowtail	2 lb/A	
ITBUAGA	Fruittree leaf-roller	(50-80% SC/S)	
ITBUBCA	Omnivorous leaf-roller		

EPA Index to Pesticide Chemicals

DIMETHYL (2,2,2-TRICHLORO-1-HYDROXYETHYL)PHOSPHONATE

<u>Site and Pest</u>	<u>Dosages and Formulation(s)</u>	<u>Tolerance, Use, Limitations</u>
/23003AA /28079AA	<u>Clover</u> <u>Clover-Grass Mixture</u>	60 ppm (fresh) 90 ppm (hay) No pregrazing or preharvest interval through 1 pound per acre of spray formulations for foliar application. Do not make more than 3 applications per cutting. 7 day pregrazing or preharvest interval through 1 pound per acre of dust formulations for foliar application. Use patterns for spray formulations include clover in mixed stands with grasses.
ITBJADA	Alfalfa caterpillar 0.375-0.5 lb/A (4-6 lb/gal SC/L) (40.5% SC/L)*** (50-80% SC/S)	Foliar application. May be applied by aircraft.
ITBMBUA	Alfalfa webworm 0.25-1 lb/A (4-6 lb/gal SC/L) (40.5% SC/L)*** (50-80% SC/S)	
ITBCCFA	Armyworm 1 lb/A	
IQAMABA	Alfalfa plant bug (4-6 lb/gal SC/L)	
IQAMARA	Lygus bugs (including tarnished plant bug) (40.5% SC/L)***	
IQAQAAA	Stink bugs (50-80% SC/S)	
ITBCCNA	Beet armyworm 0.5-1 lb/A	
IRAFAAA	Leafhoppers (4-6 lb/gal SC/L)	
ITBCCBA	Variegated cutworm (40.5% SC/L)*** (50-80% SC/S)	
ITBCCRA	Western yellow-striped armyworm 0.5 lb/A (4-6 lb/gal SC/L) (40.5% SC/L)*** (50-80% SC/S)	

EPA Index to Pesticide Chemicals

DIMETHYL (2,2,2-TRICHLORO-1-HYDROXYETHYL)PHOSPHONATE

<u>Site and Pest</u>	<u>Dosages and Formulation(s)</u>	<u>Tolerance, Use, Limitations</u>
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Clover cluster (continued)

/23003AA	(Clover)	
ITBJADA	Alfalfa caterpillar	1 lb/A
ITBMBUA	Alfalfa webworm	(5-8% D)
ITBCCNA	Beet armyworm	
IQAMARA	Lygus bugs (including tarnished plant bug)	
IQAQAAA	Stink bugs	
ITBCCBA	Variegated cutworm	
ITBCCRA	Western yellow-striped armyworm	
ITBCCFA	Armyworm	1 lb/A (5% P/T) [Bait]

Foliar application. May be applied by aircraft.

Broadcast soil application. Make 1 application per cutting.

Clover (seed crop) See Alfalfa (seed crop) cluster.

Clover-Grass Mixture See Clover cluster.

/13009AA	<u>Collards</u>	0.1 ppm
/13020AA	<u>Lettuce</u>	28 day preharvest interval through 1 pound per acre for foliar application or soil application (band or broadcast). For lettuce, do not apply after heads begin to form.

ITBCCFA	Armyworm	1 lb/A
ITBMBWA	Beet webworm	(3-8% D)
ITBWAF	Diamondback moth	(6 lb/gal
IOAAAEA	Dipterous leaf-miners	SC/L) (50-80% SC/S)
ITABACA	Saltmarsh caterpillar	
IMOAAAA	Thrips	1 lb/A
ITBCCBA	Variegated cutworm	(3-8% D) or 0.5-1 lb/A (6 lb/gal SC/L) (50-80% SC/S)

Foliar application. May be applied by aircraft.

EPA Index to Pesticide Chemicals

DIMETHYL (2,2,2-TRICHLORO-1-HYDROXYETHYL)PHOSPHONATE

<u>Site and Pest</u>	<u>Dosages and Formulation(s)</u>	<u>Tolerance, Use, Limitations</u>
<u>Collards cluster (continued)</u>		
ITBCCFA	Armyworm	1-1.5 lb/A (5% D)
ITBCCNA	Beet armyworm	
IVAHAAA	Crickets (including mole crickets)	(3-5% G) [Bait]
ITBCABA	Cutworms (climbing and surface feeding including black cutworm, granulate cutworm, variegated cutworm, western bean cutworm)	Soil application (band). Apply over the row and around base of plants. Broadcast soil application. May be applied by aircraft. For fields with previous infestations or suspected infestations of cutworms, apply prior to or just after planting.
INBUAAA	Darkling beetles	
ITABACA	Saltmarsh caterpillar	
ITBCCRA	Western yellow-striped armyworm	
/28006AA	<u>Corn, Field</u>	0.1 ppm (corn grain including popcorn, fresh corn including sweet corn [kernels plus cob with husk removed]) 30 ppm (fodder, forage) No preharvest interval through 1 pound per acre of spray formulations for foliar and soil applications. Do not make more than 3 applications during the growing season. 28 day preharvest interval through 1 pound per acre of 80 percent soluble concentrate/solid formulation for food, feed, or ensilage for foliar and soil applications. 40 day preharvest interval through 1 pound per acre of bait formulations for feed, food, or ensilage for soil application (band or broadcast). Do not make more than 1 application during the growing season.
/15004AA	<u>Corn, Pop</u>	
/15005AA	<u>Corn, Sweet</u>	

EPA Index to Pesticide Chemicals

DIMETHYL (2,2,2-TRICHLORO-1-HYDROXYETHYL)PHOSPHONATE

<u>Site and Pest</u>	<u>Dosages and Formulation(s)</u>	<u>Tolerance, Use, Limitations</u>
<u>Corn, Field cluster (continued)</u>		
ITBCCFA IVAHAHA ITBCABA	Armyworm Crickets Cutworms (climbing and surface feeding) [Bait]	1 lb/A (5% D) (3-5% G)
INBUAAA ITABACA	Darkling beetles Saltmarsh caterpillar	Soil application (band). Apply over the row and around base of plants. Broadcast soil application. May be applied by aircraft. For fields with previous infestations or suspected infestations of cutworms, apply prior to or just after planting.
ITBCCFA ITBCABA	Armyworm Cutworms	0.5-1 lb/A (4-6 lb/gal SC/L) (40.5% SC/L)*** (50-80% SC/S)
		Foliar and soil application. For early applications, when plants are 3 to 12 inches high, direct spray to lower portion of plants and to the soil around the base of plants. Later applications may be made as full coverage sprays.

Corn, Field

(greenhouse research crops)

See Bean, Lima (greenhouse research crops) cluster.

Corn, Sweet

(greenhouse research crops)

See Bean, Lima (greenhouse research crops) cluster.

/28007AA	<u>Cotton</u>	0.1 ppm (cottonseed) 7 day preharvest interval through 1.5 pounds per acre for foliar application or soil application (band or broadcast). 14 day pregrazing interval through 1.5 pounds per acre for foliar application or soil application (band or broadcast). May cause marginal leaf burn. Injury may occur if application is made while foliage is wet.
ITBCCNA IQAMBFA	Beet armyworm Black cotton flea-hopper complex	0.9-1.5 lb/A (3-8% D)
IQAMAYA ITAYAHA	Cotton fleahopper Cotton leafperforator	Foliar application. May be applied by aircraft. For beet armyworm, cotton leafworm, and western yellow-striped armyworm, apply the lower rate. For other pests, apply the range.
ITBCAOA	Cotton leafworm	

EPA Index to Pesticide Chemicals

DIMETHYL (2,2,2-TRICHLORO-1-HYDROXYETHYL)PHOSPHONATE

<u>Site and Pest</u>	<u>Dosages and Formulation(s)</u>	<u>Tolerance, Use, Limitations</u>
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Cotton (continued)

Pest list continued from previous page.

INBUAAA	Darkling beetles		
IMAAAEA	Leafrollers		
IQAMARA	Lygus bugs		
ITABACA	Saltmarsh caterpillar		
IRAFALA	Southern garden leafhopper		
IQAQAAA	Stink bugs		
ITBCCRA	Western yellow-striped armyworm		
ITBCCFA	Armyworm	1.5 lb/A	Soil application (band). Apply over the row and around base of plants.
ITBCCNA	Beet armyworm	(5% D)	
IVAHAAA	Crickets (including mole crickets)	(3-5% G) [Bait]	Broadcast soil application. May be applied by aircraft. For fields with previous infestations or suspected infestations of cutworms, apply prior to or just after planting.
ITBCABA	Cutworms (climbing and surface feeding including black cutworm, granulate cutworm, variegated cutworm, western bean cutworm)		
ITABACA	Saltmarsh caterpillar		
ITBCCRA	Western yellow-striped armyworm		
ITBCCNA	Beet armyworm	1 lb/A	Foliar application. May be applied by aircraft. For cotton fleahopper, apply lower rate for light to moderate infestation. Higher rates may be required if heavy infestation or migration occurs.
IRAFALA	Southern garden leafhopper	(4 lb/gal SC/L) (40.5% SC/L)*** (50-80% SC/S)	
IQAMBFA	Black cotton fleahopper complex	1-1.5 lb/A (4 lb/gal SC/L) (40.5% SC/L)*** (50-80% SC/S)	
ITAYAHA	Cotton leafperforator		
IMAAAEA	Leafrollers		
IQAMARA	Lygus bugs		
IQAQAAA	Stink bugs		

EPA Index to Pesticide Chemicals

DIMETHYL (2,2,2-TRICHLORO-1-HYDROXYETHYL)PHOSPHONATE

<u>Site and Pest</u>	<u>Dosages and Formulation(s)</u>	<u>Tolerance, Use, Limitations</u>
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Cotton (continued)

IQAMAYA	Cotton fleahopper	0.25-1 lb/A (4 lb/gal SC/L) (40.5% SC/L)*** (50-80% SC/S)	
ITBCAOA INBUAAA ITBCCRA	Cotton leafworm Darkling beetles Western yellow-striped armyworm	0.5-1 lb/A (4 lb/gal SC/L) (40.5% SC/L)*** (50-80% SC/S)	
ITABACA	Saltmarsh caterpillar	1.5 lb/A (4 lb/gal SC/L) (40.5% SC/L)*** (50-80% SC/S)	
IQAMAYA IQAMARA	Cotton fleahopper Lygus bugs	0.25-0.5 lb/A (4 lb/gal SC/L)	Ultra low volume foliar application. Apply by aircraft or ground equipment.

Cucumbers

(greenhouse research crops)

See Bean, Lima (greenhouse research crops) cluster.

/28049AA
/28052AA

Field Crops
Truck Crops

N.F.

Applications should be made to the soil, away from, and not in contact with the crop.

ITBCCFA IVAHAHA ITABACA ITBCCXA	Armyworm (Crickets) Saltmarsh caterpillar Surface feeding cutworms	7.5 lb/ 1,000 ft (5% D) (4-5% G)	Soil application to field borders (band). To control migrating caterpillars, place a band 6 inches wide and 0.125 to 0.25 inch deep around the field to be protected. Use in conjunction with an aluminum or fiber strip barrier.
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Flax

See Barley cluster.

Lettuce

See Collards cluster.

Oats

See Barley cluster.

EPA Index to Pesticide Chemicals

DIMETHYL (2,2,2-TRICHLORO-1-HYDROXYETHYL)PHOSPHONATE

<u>Site and Pest</u>		<u>Dosages and Formulation(s)</u>	<u>Tolerance, Use, Limitations</u>
./23035AA /28045AA	<u>Pastures (grass)</u>		60 ppm (fresh)
			90 ppm (hay)
			No preharvest interval through 1 pound per acre for foliar application. Do not make more than 3 applications per cutting or per growing season if crop is not cut for hay.
			No preharvest interval through 1 pound per acre for ultra low volume application. Do not make more than 1 application per cutting if crop is not cut for hay, except that a second application may be made at 0.25 to 0.5 pound per acre, if needed. Do not apply more than a total of 1 pound per acre in a single growing season on crops not cut for hay. Applications may be made without removal of grazing livestock.
ITBCCFA ITBCCOA	Armyworm Fall armyworm	0.25-1 lb/A (4 lb/gal SC/L)	Foliar application. Dosage recommended for Southeast and South Central States. May be applied by aircraft. Apply higher rate when infestation is heavy and/or the larvae are in the late instar stages of growth.
ITBCCFA ITBCCOA IQAMAAA	Armyworm Fall armyworm Plant bugs	1 lb/A (4 lb/gal SC/L) (50-80% SC/S)	Foliar application. May be applied by aircraft. Some 4 pounds per gallon soluble concentrate/liquid formulations may be applied undiluted as an ultra low volume spray by aircraft or ground equipment.
IRAFAAA ITBNAJA	Leafhoppers Range caterpillar	0.5-1 lb/A (4 lb/gal SC/L) (50-80% SC/S)	
ITBNAJC	Range caterpillar (larvae)	0.25-0.5 lb/A (4 lb/gal SC/L)	Use limited to NM. Foliar application. May be applied by aircraft. May be applied undiluted as an ultra low volume spray by aircraft or ground equipment. Apply during first through third instars only.

EPA Index to Pesticide Chemicals

DIMETHYL (2,2,2-TRICHLORO-1-HYDROXYETHYL)PHOSPHONATE

<u>Site and Pest</u>	<u>Dosages and Formulation(s)</u>	<u>Tolerance, Use, Limitations</u>
/28015AA	<u>Peanuts</u>	0.05 ppm (peanuts) 4 ppm (peanut vine hay and hulls) No preharvest interval through 1 pound per acre for soil application (band or broadcast). Do not make more than 3 applications before digging. One additional application may be made between digging and harvest.
ITBCCFA	Armyworm	1 lb/A
ITBCCNA	Beet armyworm	(5% D)
IVAHAAA	Crickets (including mole crickets)	(4-5% G) [Bait]
ITBCABA	Cutworms (climbing and surface feeding including black cutworm, granulate cutworm, variegated cutworm, western bean cutworm)	Soil application (band). Apply over the row and around base of plants. Broadcast soil application. May be applied by aircraft. For fields with previous infestations or suspected infestations of cutworms, apply prior to or just after planting.
ITABACA	Saltmarsh caterpillar	
ITBCCRA	Western yellow-striped armyworm	
/15008AA	<u>Peas, Field (blackeyed peas, cowpeas, crowder peas, and southern peas)</u>	0.1 ppm (cowpeas) 1 ppm (vines) 14 day preharvest interval through 1.5 pounds per acre for foliar application or soil application (band or broadcast). Do not make more than 2 applications during the growing season.
ITBCCFA	Armyworm	1-1.5 lb/A
IOAAAEA	Dipterous leaf-miners	(3-8% D) (4-6 lb/gal)
ITBJAHA	Imported cabbage-worm	SC/L) (40.5%
IQAMARA	Lygus bugs	SC/L)***
INAPAFa	Mexican bean beetle	(50-80% SC/S)
IQAQAAA	Stink bugs	
ITBCCBA	Variegated cutworm	
ITBCBTA	Western bean cutworm	

EPA Index to Pesticide Chemicals

DIMETHYL (2,2,2-TRICHLORO-1-HYDROXYETHYL)PHOSPHONATE

<u>Site and Pest</u>	<u>Dosages and Formulation(s)</u>	<u>Tolerance, Use, Limitations</u>
<u>Peas, Field (blackeyed peas, cowpeas, crowder peas, and southern peas)</u> (continued)		
ITABACA	Saltmarsh caterpillar	1.5 lb/A (6 lb/gal SC/L)
ITBCCFA	Armyworm	1-1.5 lb/A
ITBCCNA	Beet armyworm	(5% D)
IVAHAAA	Crickets (including mole crickets)	(4-5% G) [Bait]
ITBCABA	Cutworms (climbing and surface feeding including black cutworm, granulate cutworm, variegated cutworm, western bean cutworm)	Soil application (band). Apply over the row and around base of plants. Broadcast soil application. May be applied by aircraft. For fields with previous infestations or suspected infestations of cutworms, apply prior to or just after planting.
ITABACA	Saltmarsh caterpillar	
ITBCCRA	Western yellow-striped armyworm	
<u>Peas</u> (greenhouse research crops)		
	See Bean, Lima (greenhouse research crops) cluster.	
/28017AA	<u>Peppers</u>	0.1 ppm 21 day preharvest interval through 1 pound per acre of spray or bait formulations or through 1.25 pounds per acre of dust formulations of foliar application or soil application (band or broadcast).
IOAAAEA	Dipterous leafminers	1-1.25 lb/A (3-8% D)
IOBMATA	Pepper maggot	or
IOABADA	Serpentine leafminer complex	1 lb/A (6 lb/gal SC/L) (50-80% SC/S)
ITBCCFA	Armyworm	1 lb/A
IVAHAAA	Crickets	(5% D)
INBUAAA	Darkling beetles	(3.5-5% G)
ITABACA	Saltmarsh caterpillar	[Bait] Broadcast soil application. May be applied by aircraft. For fields

EPA Index to Pesticide Chemicals

DIMETHYL (2,2,2-TRICHLORO-1-HYDROXYETHYL)PHOSPHONATE

<u>Site and Pest</u>	<u>Dosages and Formulation(s)</u>	<u>Tolerance, Use, Limitations</u>
<u>Peppers (continued)</u>		
ITBCCXA	Surface feeding cutworms	with previous infestations or suspected infestations of surface feeding cutworms, apply prior to or just after planting.
<u>Peppers</u> (greenhouse research crops)		
	See Bean, Lima (greenhouse research crops) cluster.	
/10011AA	<u>Pumpkin</u>	0.1 ppm 14 day preharvest interval through 1 pound per acre of spray or bait formulations or 1.5 pounds per acre of dust formulation for foliar application or soil application (band or broadcast). Do not make more than 1 application during the growing season.
IQAGAFA	Squash bug	1.25-1.5 lb/A
ITBCCBA	Variegated cutworm	(3-8% D) Foliar application. May be applied by aircraft.
IQAGAFA	Squash bug	1 lb/A (6 lb/gal SC/L) (50-80% SC/S)
ITBCCBA	Variegated cutworm	0.5-1 lb/A (6 lb/gal SC/L) (50-80% SC/S)
ITBCCFA	Armyworm	1 lb/A
ITBCCNA	Beet armyworm	(5% D)
IVAHAAA	Crickets (including mole crickets)	(4-5% G) [Bait]
ITBCABA	Cutworms (climbing and surface feeding including black cutworm, granulate cutworm, variegated cutworm, western bean cutworm)	Soil application (band). Apply over the row and around base of plants. Broadcast soil application. May be applied by aircraft. For fields with previous infestations or suspected infestations of cutworms, apply prior to or just after planting.
ITABACA	Saltmarsh caterpillar	

EPA Index to Pesticide Chemicals

DIMETHYL (2,2,2-TRICHLORO-1-HYDROXYETHYL)PHOSPHONATE

<u>Site and Pest</u>	<u>Dosages and Formulation(s)</u>	<u>Tolerance, Use, Limitations</u>
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Pumpkin (continued)

Pest list continued from previous page.

ITBCCRA

Western yellow-striped armyworm

/28045AA

Rangeland (grass)

240 ppm (forage and hay)
No preharvest interval through 0.5 pound per acre of ultra low volume liquid formulations in oil for foliar application. Do not make more than 3 applications during growing season.
No preharvest interval through 1 pound per acre of dilute spray or ultra low volume formulations for foliar application. For dilute sprays do not make more than 3 applications per cutting or per growing season if grass is not cut for hay. For ultra low volume sprays do not make more than 1 application per cutting or per growing season if grass is not cut for hay.
Applications may be made without removal of livestock.

ITBNAJA

Range caterpillar

0.25-0.5 lb/A
(1.5 lb/gal RTU)

Ultra low volume foliar application. Apply by aircraft. Apply to actively feeding and mobile larvae in the third through fifth instars. A second application may be made if needed.

Also refer to Pasture (grass) for additional pest and use information.

EPA Index to Pesticide Chemicals

DIMETHYL (2,2,2-TRICHLORO-1-HYDROXYETHYL)PHOSPHONATE

<u>Site and Pest</u>		<u>Dosages and Formulation(s)</u>	<u>Tolerance, Use, Limitations</u>
/28076AA	<u>Safflower</u>		0.1 ppm (seed) Apply up to the onset of bloom through 1.5 pounds per acre for foliar application or soil application (band or broadcast). Do not make more than 2 applications during the growing season. Do not apply after onset of bloom.
ITBCCFA	Armyworm	1.25-1.5 lb/A	Foliar application. May be applied by aircraft. Apply approximately 14 days prior to bloom and repeat at onset of bloom.
IQAMARA	Lygus bugs	(3-8% D)	
IMOAAAA	Thrips	or	
ITBCCBA	Variegated cutworm	1-1.5 lb/A (50-80% SC/S)	
ITBCCFA	Armyworm	1.5 lb/A	Soil application (band). Apply over the row and around base of plants.
IWAHAAA	Crickets	(5% D)	
ITABACA	Saltmarsh caterpillar	(4-5% G) [Bait]	Broadcast soil application. May be applied by aircraft. For fields with previous infestations or suspected infestations of surface feeding cutworms, apply prior to or just after planting.
ITBCCXA	Surface feeding cutworms		
/28023BA	<u>Soybeans (seed crop)</u>		N.F. Do not pasture or harvest treated crop for feed, food, forage, or oil.
ITBCCFA	Armyworm	1-1.5 lb/A	Soil application (band). Apply over the row and around base of plants.
ITBCCNA	Beet armyworm	(5% D)	
IWAHAAA	Crickets (including mole crickets)	(4-5% G) [Bait]	Broadcast soil application. May be applied by aircraft. For fields with previous infestations or suspected infestations of cutworms, apply prior to or just after planting.
ITBCABA	Cutworms (climbing and surface feeding including black cutworm, granulate cutworm, variegated cutworm, western bean cutworm)		
ITABACA	Saltmarsh caterpillar		
ITBCCRA	Western yellow-striped armyworm		
ITBCCFA	Armyworm	1.25-1.75	Foliar application. May be applied by aircraft.
IOAAAEA	Dipterous leaf-miner	1b/A (5% D)	
ITBJAHA	Imported cabbage-	or	

EPA Index to Pesticide Chemicals

DIMETHYL (2,2,2-TRICHLORO-1-HYDROXYETHYL)PHOSPHONATE

<u>Site and Pest</u>	<u>Dosages and Formulation(s)</u>	<u>Tolerance, Use, Limitations</u>
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Soybeans (seed crop) (continued)

	worm	1-1.5 lb/A
IQAMARA	Lygus bugs	(6 lb/gal
IQAQAAA	Stink bugs	SC/L)
ITBCCBA	Variegated cutworm	(50-80% SC/S)

Spinach (greenhouse research crops)

See Bean, Lima (greenhouse research crops) cluster.

/28020AA

Sugar Beets

0.1 ppm
12 ppm (tops)
14 day preharvest interval through 1.5 pounds per acre for foliar application or soil application (band or broadcast) if tops are not to be fed to livestock.
28 day preharvest interval through 1.5 pounds per acre for foliar application or soil application (band or broadcast) if tops are to be fed to livestock.

ITBMBUA	Alfalfa webworm	1-1.5 lb/A	Foliar application. May be applied
ITBCCNA	Beet armyworm	(3-8% D)	by aircraft.
ITBMBWA	Beet webworm		
IOAAAEA	Dipterous leaf-miners		
ITABACA	Saltmarsh caterpillar		
ITBCCBA	Variegated cutworm		
ITBMBUA	Alfalfa webworm	1-1.5 lb/A	
ITBCCNA	Beet armyworm	(4-6 lb/gal	
ITABACA	Saltmarsh caterpillar	SC/L)	
		(40.5% SC/L)***	
		(50-80% SC/S)	
ITBMBWA	Beet webworm	0.5-1 lb/A	
ITBCCBA	Variegated cutworm	(4-6 lb/gal	
		SC/L)	
		(40.5% SC/L)***	
		(50-80% SC/S)	

EPA Index to Pesticide Chemicals

DIMETHYL (2,2,2-TRICHLORO-1-HYDROXYETHYL)PHOSPHONATE

<u>Site and Pest</u>	<u>Dosages and Formulation(s)</u>	<u>Tolerance, Use, Limitations</u>
<u>Sugar Beets (continued)</u>		
Dipterous leaf-miners	1 lb/A (4-6 lb/gal SC/L) (40.5% SC/L)*** (50-80% SC/S)	
Armyworm Crickets Cutworms (climbing and surface feeding including black cutworm, granulate cut-Darkling beetles Saltmarsh caterpillar	1-1.5 lb/A (5% D) (3-5% G) [Bait]	Soil application (band). Apply over the row and around base of plants. Broadcast soil application. May be applied by aircraft. For fields with previous infestations or suspected infestations of cutworms, apply prior to or just after planting.
Surface feeding cutworms	1 lb/A (5% P/T) [Bait]	Broadcast soil application.
<u>Tobacco</u>		N.F. 3 day preharvest interval through 1 pound per acre of spray formulations or 1.5 pounds per acre of dust and granular formulations for foliar application. Do not apply bait formulations after plants are 2 feet tall.
Tobacco budworm Tobacco hornworm	1-1.5 lb/A (5-8% D) or 0.4-0.6 lb/A (4% G) or 1 lb/A (50-80% SC/S)	Foliar application. For budworm, apply directly into bud. Repeat as needed.
Armyworm Beet armyworm Crickets (including mole crickets) Cutworms (climbing and surface feeding including black cutworm,	1 lb/A (5% D) (4-5% G) [Bait]	Soil application (band). Apply over the row and around base of plants. Broadcast soil application. May be applied by aircraft. For fields with previous infestations or suspected infestations of cutworms, apply prior to or just after planting.

EPA Index to Pesticide Chemicals

DIMETHYL (2,2,2-TRICHLORO-1-HYDROXYETHYL)PHOSPHONATE

<u>Site and Pest</u>	<u>Dosages and Formulation(s)</u>	<u>Tolerance, Use, Limitations</u>
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Tobacco (continued)

Pest list continued from previous page.

	granulate cutworm, variegated cutworm, western bean cutworm)	
ITABACA	Saltmarsh caterpillar	
ITBCCRA	Western yellow-striped armyworm	

/26003DA Tobacco (to be transplanted)

INBPALC	Green june beetle (larvae)	0.5 lb/ 100 gal/ 100 sq.yd (50-80% SC/S)	Soil application. Apply to uprooted areas of plant beds.
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/11005AA Tomato

0.1 ppm
No preharvest interval through 1.25 pounds per acre of dust formulations for foliar application to tomatoes to be cooked (canning) before marketing.
21 day preharvest interval through 1 pound per acre of spray formulations or 1.25 pounds per acre of dust formulations for foliar application.
28 day preharvest interval through 1 pound per acre of bait formulations for soil application (band or broadcast).
Do not graze fields treated with bait formulations.

ITBCCFA	Armyworm	1-1.25 lb/A	Foliar application. May be applied by aircraft.
IOAAAEA	Dipterous leaf-miners	(3-8% D)	
IOABADA	Serpentine leaf-miner complex		
ITBRAJA	Tomato hornworm		
IOAAAEA	Dipterous leaf-miners	1 lb/A (6 lb/gal SC/L)	
IOABADA	Serpentine leaf-miner complex	(50-80% SC/S)	
ITBRAJA	Tomato hornworm		

EPA Index to Pesticide Chemicals

DIMETHYL (2,2,2-TRICHLORO-1-HYDROXYETHYL)PHOSPHONATE

<u>Site and Pest</u>	<u>Dosages and Formulation(s)</u>	<u>Tolerance, Use, Limitations</u>
<u>Tomato (continued)</u>		
ITBCCFA	Armyworm	1 lb/A
ITBCCNA	Beet armyworm	(5% D)
IVAHAHA	Crickets (including mole crickets)	(3-5% G) [Bait]
ITBCABA	Cutworms (climbing and surface feeding including black cutworm, granulate cut-granulated cutworm, variegated cutworm, western bean cutworm)	Soil application (band). Apply over the row and around base of plants. Broadcast soil application. May be applied by aircraft. For fields with previous infestations or suspected infestations of cutworms, apply prior to or just after planting.
INBUAAA	Darkling beetles	
ITABACA	Saltmarsh caterpillar	
ITBCCRA	Western yellow-striped armyworm	

Truck Crops

See Field Crops cluster.

Wheat

See Barley cluster.

EPA Index to Pesticide Chemicals

DIMETHYL (2,2,2-TRICHLORO-1-HYDROXYETHYL)PHOSPHONATE

<u>Site and Pest</u>	<u>Dosages and Formulation(s)</u>	<u>Tolerance, Use, Limitations</u>
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LIVESTOCK AND POULTRY

General Warnings and Limitations: Do not treat lactating dairy cattle, animals less than 3 months old (unless otherwise specified), convalescent, or stressed livestock. Do not apply in conjunction with oral drenches, or other internal medications, or with other organic phosphates, or materials having cholinesterase inhibiting activity.

(Dairy Animals)

/50004IA /53001IA	<u>Dairy Cattle</u> (non-lactating)	0.1 ppm (meat, fat and meat byproducts of cattle) 0.01 ppm (milk) 7 day prefreshening interval through 0.5 fluid ounce of 8 percent ready-to-use formulation per 100 pound body weight for pour on application. Do not apply more than 4 fluid ounces of 8 percent ready-to-use formulation per animal. If freshening occurs within 7 days after treatment, do not use milk for human consumption for the balance of the 7 day interval. 21 day preslaughter interval through 0.5 fluid ounce of 8 percent ready-to-use formulation per 100 pound body weight for pour on application.
IOAWABA	Cattle grubs (including common cattle grub and northern cattle grub)	0.5 fl.oz 8% RTU/100 lb body wt. (8% RTU)
IMAAADA	(Lice)	Animal treatment. Pour on application. Apply a single treatment along the backline. Proper timing of treatment is important. Treat cattle as soon as possible after fly activity ceases. Host parasite reactions sometimes occur when cattle are treated while the common cattle grub is in the gullet, or while the northern cattle grub is in the area of the spinal cord. Consult your veterinarian, extension livestock specialist, or extension entomologist regarding timing of treatment. If it is impossible to determine the origin of the cattle, and thus the exact stage of the grubs is unknown, feed only a maintenance ration of low energy feed during the treatment period. This lessens the likelihood of severe bloat which may occur in

EPA Index to Pesticide Chemicals

DIMETHYL (2,2,2-TRICHLORO-1-HYDROXYETHYL)PHOSPHONATE

<u>Site and Pest</u>	<u>Dosages and Formulation(s)</u>	<u>Tolerance, Use, Limitations</u>
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Dairy Cattle (non-lactating) (continued)

cattle on full feed when the common cattle grub is killed while in the gullet. Do not treat animals for 10 days before or after shipping or weaning, or after exposure to contagious or infectious diseases.

(Livestock Intended for Slaughter)

/53001IA

Beef Cattle

0.1 ppm (meat, fat, and meat byproducts of cattle)
0.01 ppm (milk)
14 day preslaughter interval through 8 pounds of soluble concentrate/solid formulation per 100 gallons of water for animal spray application. Do not apply more than 4 fluid ounces of 8 percent ready to use formulation per animal.

IOAWABA

Cattle grubs (including common cattle grub and northern cattle grub)

8 lb/100 gal
(80% SC/S)

Animal spray treatment. Apply a single treatment with high pressure (250 to 350 pounds per square inch) to thoroughly wet the skin. Operate box-type spray chutes at maximum pressure. Do not spray in a confined, nonventilated area. Proper timing of treatment is important. Treat cattle as soon as possible after fly activity ceases. Host parasite reactions sometimes occur when cattle are treated while the common cattle grub is in the gullet, or while the northern cattle grub is in the area of the spinal cord. Consult your veterinarian, extension livestock specialist, or extension entomologist regarding timing of treatment. If it is impossible to determine the origin of the cattle, and thus the exact stage of the grubs is unknown, feed only a maintenance ration of low energy feed

EPA Index to Pesticide Chemicals

DIMETHYL (2,2,2-TRICHLORO-1-HYDROXYETHYL)PHOSPHONATE

<u>Site and Pest</u>	<u>Dosages and Formulation(s)</u>	<u>Tolerance, Use, Limitations</u>
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Beef Cattle (continued)

during the treatment period. This lessens the likelihood of severe bloat which may occur in cattle on full feed when the common cattle grub is killed while in the gullet. Do not treat animals for 10 days before or after shipping or weaning, or after exposure to contagious or infectious diseases.

IOAUADA	Horn fly	8 lb/100 gal	Animal spray treatment. Apply to the point of run off. Repeat as needed.
IMAAADA	Lice	(80% SC/S)	

Refer to (Dairy Animal's), Dairy Cattle (non-lactating) for additional information.

(Livestock Not Intended for Slaughter)

/56005IA	<u>Horses</u>		0.1 ppm (meat, fat, and meat byproducts of horses) Do not treat horses to be slaughtered for food. Do not treat sick or debilitated horses, mares in the last month of pregnancy, or colts under 4 months of age. Do not administer in conjunction with or for 10 to 14 days (depending upon the product) before or after treatment with other organic phosphates or cholinesterase inhibitors. Symptoms of overdosage are ataxia and colic.
IOASAAA	Horse bots	9 g/5-10 fl.oz/500 lb body wt. (37.8% WP/D)	Animal treatment. Administer by stomach tube or drench. The suspension may be stored for 24 hours. Prepare doses individually. Repeat at 30 day intervals as needed. Formulated with thiabendazole.
		9 g/500 lb body wt. (37.8% WP/D) (37.8-90% P/T)	Animal treatment. Administer dry or dissolved in water. Mix with the amount of feed to be consumed at 1 feeding. Withdrawal of feed 12 to 18 hours prior to treatment will assure complete ingestion. Repeat at 90 to 120 day intervals. Do not

EPA Index to Pesticide Chemicals

DIMETHYL (2,2,2-TRICHLORO-1-HYDROXYETHYL)PHOSPHONATE

<u>Site and Pest</u>	<u>Dosages and Formulation(s)</u>	<u>Tolerance, Use, Limitations</u>
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Horses (continued)

repeat treatment more frequently than every 30 days. Do not administer intravenous anesthetics, especially muscle relaxant, for a period of 14 days after treatment. May be formulated with thiabendazole.

AGRICULTURAL PREMISES AND EQUIPMENT

General Warnings and Limitations: Good sanitation is a necessary part of any house fly control program. Direct application to walls, floors, or other surfaces previously treated with lime, whitewash, or other alkaline materials may be ineffective. On limed floors, where floors are lacking, or where there is not enough clean floor space available, treat and distribute bait on sacking, boards, or cardboard strips. Dry and liquid baits may be applied daily, if needed, until flies are controlled. Do not contaminate milk or milk handling equipment. Do not contaminate feed, drinking water, litter, and feed troughs. Do not treat portions of buildings where animals can lick the treated surface.

(Dairy Barns Including Milk Rooms, Equipment and Barnyards)

/50000JA	<u>Dairy Barns</u>	0.1 ppm (meat, fat, and meat byproducts of cattle)
/60004JA	<u>Milking Rooms</u>	0.01 ppm (milk)
/53000JA		
/52000JA		
IVAAABA	Cockroaches	0.032-0.04 oz
IOAUFA	House fly	/1,000 sq.ft (0.4-1% G)
		Premise treatment. Dry bait. Scatter directly on areas where pests breed or congregate. Scatter lightly on floors, alleyways, window sills, and other clean horizontal surfaces. For faster results, apply to a moistened surface.
		0.16 oz/gal (1% G)
		Premise treatment. Liquid bait. Mix with 1 pound of sugar or 2 cups of corn syrup. Sprinkle on floors, alleyways, window sills, and other areas where pests congregate.

EPA Index to Pesticide Chemicals

DIMETHYL (2,2,2-TRICHLORO-1-HYDROXYETHYL)PHOSPHONATE

<u>Site and Pest</u>	<u>Dosages and Formulation(s)</u>	<u>Tolerance, Use, Limitations</u>
<u>Dairy Barns cluster (continued)</u>		
	Syrup bait (1% G)	Premise treatment. Apply in sufficient water to make a syrup. Brush onto vertical surfaces, ceiling cracks, and rafters where pests congregate. For flies in areas not clean enough, apply to sacks, boards, or strips of cardboard and place them inside or outside buildings where pests congregate.
/50000KA /60004KA /53000KA /52000KA	<u>Dairy Barns (manure treatment)</u> <u>Milking Rooms (manure treatment)</u>	0.1 ppm (meat, fat, and meat byproducts of cattle) 0.01 ppm (milk)
IVAAABA IOAUFA	Cockroaches House fly	0.04 oz/ 1,000 sq.ft (1% G)
		Manure treatment. Dry bait. Scatter directly onto manure where pests breed or congregate.
		0.16 oz/gal (1% G)
		Manure spot treatment. Liquid bait. Mix with 1 pound of sugar or 2 cups of corn syrup. Sprinkle directly onto manure where pests breed or congregate.
/890030A	<u>Garbage Dumps (dairy barn and milking room premises)</u>	0.1 ppm (meat, fat, and meat byproducts of cattle) 0.01 ppm (milk)
IVAAABA IOAUFA	Cockroaches House fly	0.04 oz/ 1,000 sq.ft (1% G)
		Dry bait. Scatter directly onto garbage dumps where pests breed or congregate.
		0.16 oz/gal (1% G)
		Liquid bait. Mix with 1 pound of sugar or 2 cups of corn syrup. Sprinkle directly on garbage dumps where pests breed or congregate.

EPA Index to Pesticide Chemicals

DIMETHYL (2,2,2-TRICHLORO-1-HYDROXYETHYL)PHOSPHONATE

<u>Site and Pest</u>	<u>Dosages and Formulation(s)</u>	<u>Tolerance, Use, Limitations</u>
<u>(Animal Buildings, Equipment and Outdoor Areas For Other Than Dairy, Poultry and Pets)</u>		
/53000JA	<u>Animal Buildings (including barns, shelters, and stables)</u>	0.1 ppm (meat, fat, and meat byproducts of cattle, goats, horses, and sheep)
IOAUFA	House fly	1% impr waxed tray (1% Impr)
		Bait application. Dip tray in water before attaching tray under garbage can lids or hanging on walls outdoors where pests accumulate. Keep waxed tray moist.
	4 lb/40 gal [2 gal/1,000 sq.ft] (80% SC/S)	Premise residual spray treatment. Remove animals before spraying. Apply in and around buildings and stock pens. Apply to ceilings, floors, walls, and other areas where flies breed and congregate. Repeat as needed, but not more frequently than 4 to 14 day intervals. For longer residual activity, add 1 pound of sugar per gallon of spray.
	Refer to (Dairy Barns Including Milk Rooms, Equipment and Barnyards), Dairy Barns cluster for additional information.	
/53000KA	<u>Animal Buildings (manure treatment)</u>	
	Refer to (Dairy Barns Including Milk Rooms, Equipment and Barnyards), Dairy Barns (manure treatment) cluster.	
/890030A	<u>Garbage Dumps (animal building premises)</u>	0.1 ppm (meat, fat, and meat byproducts of cattle, goats, horses, and sheep)
IOAUFA	House fly	1% impr waxed tray (1% Impr)
		Bait application. Dip tray in water before attaching tray under garbage can lids or hanging on walls outdoors where pests accumulate. Keep waxed tray moist.

EPA Index to Pesticide Chemicals

DIMETHYL (2,2,2-TRICHLORO-1-HYDROXYETHYL)PHOSPHONATE

<u>Site and Pest</u>	<u>Dosages and Formulation(s)</u>	<u>Tolerance, Use, Limitations</u>
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Garbage Dumps (animal building premises) (continued)

4 lb/40 gal [2 gal/1,000 sq.ft] (80% SC/S)	Premise residual spray treatment. Apply to refuse, garbage dumps, and other areas where flies breed and congregate. Repeat as needed, but not more frequently than 7 to 14 day intervals. For longer residual activity, add 1 pound of sugar per gallon of spray.
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Refer to (Dairy Barns Including Milk Rooms, Equipment and Barnyards), Garbage Dumps (dairy barn and milking room premises) for additional information.

(Feed Lots, Holding Pens and Corrals)

/52000JA /52000JA	<u>Feed Lots</u> <u>Pens</u>	0.1 ppm (meat, fat, and meat byproducts of cattle, goats, horses, and sheep)
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Refer to (Dairy Barns Including Milk Rooms, Equipment and Barnyards), Dairy Barns cluster.

/52000KA /52000KA	<u>Feed Lots (manure treatment)</u> <u>Pens (manure treatment)</u>	0.1 ppm (meat, fat, and meat byproducts of cattle, goats, horses, and sheep)
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Refer to (Dairy Barns Including Milk Rooms, Equipment and Barnyards), Dairy Barns (manure treatment) cluster.

/890030A	<u>Garbage Dumps (feed lots and pen premises)</u>	0.1 ppm (meat, fat, and meat byproducts of cattle, goats, horses, and sheep)
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Refer to (Dairy Barns Including Milk Rooms, Equipment and Barnyards), Garbage Dumps (dairy barn and milking room premises) for additional information.

HUMAN, PETS AND OTHER ANIMALS

General Warnings and Limitations: Good sanitation is a necessary part of any house fly control program. Do not treat portions of buildings or areas where animals can lick the treated surface. Apply baits in areas inaccessible to children and animals. Do not contaminate feed or drinking water.

EPA Index to Pesticide Chemicals

DIMETHYL (2,2,2-TRICHLORO-1-HYDROXYETHYL)PHOSPHONATE

<u>Site and Pest</u>		<u>Dosages and Formulation(s)</u>	<u>Tolerance, Use, Limitations</u>
/54000JA /54003JA	<u>Animal Hospitals</u>		
IVAAABA IOAUABA	Cockroaches House fly	0.04 oz/ 1,000 sq.ft (1% G)	Premise treatment. Dry bait. Scatter outside runways, on window sills, on ledges, and other areas where pests congregate. For caged units, apply along edges of dropping area. For faster results, apply to a moistened surface.
		0.16 oz/gal (1% G)	Premise spot treatment. Mix with 1 pound of sugar or 2 cups of corn syrup. Apply outside runways and areas where pests congregate.
		Syrup bait (1% G)	Premise spot treatment. Apply in sufficient water to make a syrup. Brush onto vertical surfaces and areas where pests congregate.
/54029IA /65031MA	<u>Bait Fish and Goldfish</u>		Consult your State Fish and Game Agency before applying this product to public waters. Permits may be required before treating such waters. Apply when the water temperature at the 2 foot level is 85 F (29.4 C).
IIEAABA IIAAABA IDCAABA	Anchor worms Fishlice (<u>argulus sp.</u>) Gill flukes	A concentra- tion of 25 ppm in the pond (80% SC/S)	Water treatment to control fish parasites. Mix in sufficient water to permit even distribution over the pond surface. Apply uniformly to the pond surface by sprinkler can, low pressure sprayer, or by metering into the wake of a power driven boat. Apply in a criss-cross pattern covering the entire pond surface. For <u>anchor worm</u> and <u>fishlice</u> make 4 applications at 7 day intervals. For <u>gill flukes</u> make 1 application.

EPA Index to Pesticide Chemicals

DIMETHYL (2,2,2-TRICHLORO-1-HYDROXYETHYL)PHOSPHONATE

<u>Site and Pest</u>		<u>Dosages and Formulation(s)</u>	<u>Tolerance, Use, Limitations</u>
/54002JA	<u>Cat Quarters</u>		
/54003JA	<u>Dog Quarters</u>		
IMNAAAA	Fleas	40 g/gal [1 gal/ 1,000 sq.ft] (80% SC/S)	Use limited to professional pest control operators. Premise treatment. Apply to yard area and other areas frequented by animals. Remove animals before treatment and let deposit dry before allowing animals back into treated area. Repeat as needed.
/54003IA	<u>Dogs</u>		This use only occurs on multiple active ingredient labeling and has not been included in this single active ingredient entry. Refer to appropriate labeling for use information and limitations.
/54003JA	<u>Dog Kennels</u>		
IOAUAFA	House fly	40 g/8.75 lb sugar [4 tbls/ 1,000 sq.ft] (80% SC/S)	Use limited to professional pest control operators. Premise treatment. Dry bait. Scatter on outside runways, on window sills, on ledges, and other areas where pest congregate. Repeat as needed.
		40 g/gal [5 gal/ 1,000 sq.ft] (80% SC/S)	Use limited to professional pest control operators. Premise treatment. For longer residual control, mix with 1 pound of sugar or molasses per gallon of water. Apply as a spray or brush onto areas where pest congregate.
			Refer to Animal Hospitals for additional information.
/54002JA	<u>Pet Kennels</u>		
IOAUAFA	House fly	0.032 oz/ 1,000 sq.ft (0.4% G)	Premise treatment. Dry bait. Scatter on areas where pest congregates.

EPA Index to Pesticide Chemicals

DIMETHYL (2,2,2-TRICHLORO-1-HYDROXYETHYL)PHOSPHONATE

<u>Site and Pest</u>	<u>Dosages and Formulation(s)</u>	<u>Tolerance, Use, Limitations</u>
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ORNAMENTALS

General Warnings and Limitations: Phytotoxicity has occurred on certain varieties of carnation, hydrangeas, and zinnias. When treating large plantings of these flowers for the first time, treat a few plants and observe for 4 to 5 days before treating the entire planting. Do not handle treated plants until spray deposit has dried.

(Ornamental Plants (herbaceous, woody shrubs, trees and vines))

/31142AA

Narcissus

IOBJAEA

Narcissus bulb fly	1 lb/100 gal/ (6 lb/gal SC/L) (50-80% SC/S)	Soil drench. Direct stream at base 1,000 ft row of plants at the beginning of adult activity (early May to June). Re- peat annually.
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/32005AA

Ornamental Evergreens

/35000AA

Ornamental Shade Trees

/63003QA

ITAXAIB

Gypsy moth (eggs)	2 oz 40.5% SC/L/gal (40.5% SC/L)	Bark application. Treat egg masses on tree trunks and limbs, under bark, on fences, and in wood piles and rock walls. Apply to the point of run off, usually in April or shortly before larval emergence. Egg masses usually begin hatching in mid-April, but can vary according to location. Consult your State Agri- cultural Extension Service for prop- er timing of application in your area.
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EPA Index to Pesticide Chemicals

DIMETHYL (2,2,2-TRICHLORO-1-HYDROXYETHYL)PHOSPHONATE

<u>Site and Pest</u>	<u>Dosages and Formulation(s)</u>	<u>Tolerance, Use, Limitations</u>
/31000AA	<u>Ornamental Herbaceous Plants</u> (including annuals)	
/35000AA	<u>Ornamental Shade Trees</u>	
/34000AA	<u>Ornamental Woody Shrubs and Vines</u>	
ITBCCFA	Armyworm	--
ITBKABA	Bagworm	(5% D)
ITBCCZA	Climbing cutworms	or
IOAAAEA	Dipterous leaf-miners	0.167-0.25 oz**/gal
IQAMARA	Lygus bugs	or
IQAQAAA	Stink bugs	1-1.5 lb/
IQAMATA	Tarnished plant bug	100 gal
ITBCBNA	Tobacco budworm	(4-6 lb/gal
ITAAAMA	Webworms	SC/L) (40.5% SC/L)*** (50-80% SC/S)
/31000AA	<u>Ornamental Herbaceous Plants (in-</u>	
/31000DA	<u>cluding aster, chrysanthemum,</u> <u>daisy, iris, and nursery stock)</u>	
ITBCCFA	Armyworm	1-1.5 lb/A
IWAHAAA	Crickets	(5% G)
ITABACA	Saltmarsh caterpillar	Foliar application.
/35098AA	<u>Pine</u>	
ITBGBLA	Nantucket pine tip moth	0.167 oz**/gal
ITBMBCA	Zimmerman pine moth	or 1 lb/100 gal (4-6 lb/gal SC/L) (40.5% SC/L)*** (50-80% SC/S)
		Foliar application. Apply until plants are thoroughly wet. Repeat as needed.

EPA Index to Pesticide Chemicals

DIMETHYL (2,2,2-TRICHLORO-1-HYDROXYETHYL)PHOSPHONATE

<u>Site and Pest</u>	<u>Dosages and Formulation(s)</u>	<u>Tolerance, Use, Limitations</u>
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(Lawns and Turf (including ground covers))

/330100A
/330080A

Lawns
Ornamental Turf

Do not graze or use clippings from treated areas for feed or forage. Keep children and pets off treated areas until spray has dried for spray formulations. After granular application, water the lawn using 75 to 150 gallons of water per 5,000 square feet.

ISASAAA	Ants	0.125-0.625	Application to established lawns and turf. For sod webworms, mow lawn and rake dead grass from damaged areas. Water lawn and allow grass to dry before spraying. Do not water again for at least 3 days. Apply up to 3 applications at 21 to 28 day intervals. Up to 3 applications may be needed for maximum control. In most areas, the first application should be made in May or June. Consult your State Agricultural Extension Service for more specific information.
ITBCCFA	Armyworm	1b/5,000	
IQALAEA	Chinch bug	sq.ft	
IWAHAAA	Crickets	(5-6.2% G)	
ITBCABA	Cutworms (including surface feeding cutworms)	or 0.625-0.9375 1b/5,000	
ITABACA	Saltmarsh caterpillar	sq.ft [up to	
ITBMABA	Sod webworms	75-150 gal/ 5,000 sq.ft] (4-6 lb/gal SC/L) (50% SC/S) or 0.375-0.9375 1b/5,000 sq.ft [up to 75-150 gal/ 5,000 sq.ft] (80% SC/S)	
ISASAVA	Texas harvester ant	0.67-1 cup 5% G/mound (5% G)	

EPA Index to Pesticide Chemicals

DIMETHYL (2,2,2-TRICHLORO-1-HYDROXYETHYL)PHOSPHONATE

<u>Site and Pest</u>	<u>Dosages and Formulation(s)</u>	<u>Tolerance, Use, Limitations</u>
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Lawns cluster (continued)

INBPAAA	White grubs (including Asiatic garden beetle, European chafer, Japanese beetle, May beetle, Northern masked chafer, and Oriental beetle)	0.9375 lb/5,000 sq.ft (5-6.2% G) or 0.9375 lb/5,000 sq.ft [up to 75-150 gal/5,000 sq.ft] (4 lb/gal SC/L) (50-80% SC/S)	Application to established lawns and turf. Apply when grubs are young and actively feeding near the soil surface usually during July and August. Do not attempt to control grubs in turf areas that have over 0.5 to 0.75 inch thatch build up since heavy thatch (0.75 to 2 inches) will prevent the insecticide from penetrating down to the area where pests are feeding. Remove thatch before treating. A second application may be needed for large sized larvae. Thoroughly irrigate turf immediately after application. Irrigation may be postponed, based on actual count and species of grub present. Refer to 80 percent soluble concentrate/solid formulation labels for specific watering schedule.
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(Ornamental and Forest Greenhouse Plants)

/32008CA

Weed Hosts of Plant Pathogens
(greenhouse research crops)

This use only occurs on Special Local Need (24(C)) labeling and has not been included in this entry. Refer to appropriate labeling for use information and limitations.

EPA Index to Pesticide Chemicals

DIMETHYL (2,2,2-TRICHLORO-1-HYDROXYETHYL)PHOSPHONATE

<u>Site and Pest</u>	<u>Dosages and Formulation(s)</u>	<u>Tolerance, Use, Limitations</u>
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FOREST, CHAPARRAL, NONAGRICULTURAL AND WASTELANDS

/30000AA

Forest Trees

Do not apply directly to water or wetlands except under the forest canopy. Consult State Agricultural Extension Service for proper timing of application in the area infested. Application of undiluted trichlorophon can cause spotting of automobile paint surfaces if exposure is permitted. If accidental exposure does occur, the car should be washed immediately.

ITAUAGA

Forest tent caterpillars

0.75 lb/A
(4 lb/gal
SC/L)

Use limited to AL and LA. Ultra low volume foliar application. Apply undiluted by aircraft. Repeat as needed.

ITAXAIC

Gypsy moth (larvae)

1 lb/A
(4 lb/gal
SC/L)

Ultra low volume foliar application. Apply undiluted by aircraft. Repeat as needed.

1 lb/A
(1.5 lb/gal
RTU)

Ultra low volume foliar application. Apply by aircraft. Schedule applications in accordance with the recommendation of local gypsy moth control authorities. Repeat as needed.

ITBUASA

Spruce budworm

0.5-1 lb/A
(4 lb/gal
SC/L)

Use limited to ME and NH. Ultra low volume foliar application. Apply undiluted by aircraft when approximately 50 percent of the larvae are in the fourth instar. Repeat as needed.

NONCROP AQUATIC AREAS

/65031MA

Ponds

Consult your State Fish and Game Agency before applying this product to public waters. Permits may be required before treating such waters.

Refer to HUMAN, PETS AND OTHER ANIMALS, Bait Fish and Goldfish, for additional information.

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DIMETHYL (2,2,2-TRICHLORO-1-HYDROXYETHYL)PHOSPHONATE

<u>Site and Pest</u>	<u>Dosages and Formulation(s)</u>	<u>Tolerance, Use, Limitations</u>
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DOMESTIC DWELLINGS, MEDICAL FACILITIES AND SCHOOLS

General Warnings and Limitations: Good sanitation is a necessary part of any house fly control program. Do not contaminate food, drinking water, or utensils. Do not allow children or pets in treated areas until sprayed surfaces are dry. Apply baits in areas inaccessible to children and pets. Dry and liquid baits may be applied daily, if needed, until flies are controlled.

/630010A

Domestic Dwellings (Indoor)

The 80 percent soluble concentrate/solid formulation is limited to professional pest control operators.

IQAFACA

Bed bug

40 g/gal
(80% SC/S)

Indoor treatment. Apply as a coarse spray or brush onto baseboards, cracks, and crevices. Treat beds including a light application to tufts and seams of mattresses. Do not soak mattresses. Treated mattresses should be aired for at least 8 hours or until dry. Do not treat infant bedding or cribs.

IVAAABA

Cockroaches

Bait
(0.92-1% G)

Indoor treatment. Dry bait. Place a small quantity on pieces of paper, cardboard, or in shallow jar lids. Place in protected areas such as in closets, under sinks or refrigerators, and where dying insects cannot fall into food, utensils, or drinking water. Any bait visible after application should be carefully brushed into cracks and crevices or removed. Wet the bait slightly for increased killing efficiency.

IVAHAAA

Crickets

IMPBACA

Silverfish

40 g/19 lb
sugar
or
0.46% dry
bait
(80% SC/S)

Indoor treatment. Dry bait. Apply to areas where pests congregate.

40 g/gal/
750 sq.ft
(80% SC/S)

Indoor spot treatment. For residual control, apply as a coarse spray or brush onto baseboards, cracks, crevices, and other areas where pests hide or congregate. Repeat as needed.

EPA Index to Pesticide Chemicals

DIMETHYL (2,2,2-TRICHLORO-1-HYDROXYETHYL)PHOSPHONATE

<u>Site and Pest</u>	<u>Dosages and Formulation(s)</u>	<u>Tolerance, Use, Limitations</u>
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Domestic Dwellings (Indoor) (continued)

IMNAAAA ILAAACA	Fleas Ticks	40 g/gal/ 750 sq.ft (80% SC/S)	Indoor treatment. Apply to infested areas including rugs, draperies, furniture, baseboards, cracks, crevices, and all places where pests are found. Before spraying fabric, test spray on small hidden area to insure that the spray will not stain. In animal sleeping and holding areas, remove old bedding and spray floor thoroughly. Replace with fresh bedding after spray dries. Do not spray pets directly. Allow sprayed areas to thoroughly dry before contact. Repeat as needed.
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/630030A Domestic Dwellings (Outdoor)

The 80 percent soluble concentrate/solid formulation is limited to professional pest control operators.

ISASAAA IVAHAHA	Ants Crickets	0.4-0.8 oz/ 1,000 sq.ft (5% G)	Outdoor treatment. Dry bait. Apply around perimeter of building.
IMDAAAA	Earwigs	0.32 oz/ 1,000 sq.ft (1% G)	Outdoor treatment. Dry bait. Apply lightly on ground, grass, near foundation of house, along sidewalk and driveway, around porches, doors and other entrances to the house. Apply in late afternoon and repeat at 14 day intervals as needed.
IOAUAF A	House fly	40 g/8.75 lb sugar [4 tbls/ 1,000 sq.ft] (80% SC/S)	Outdoor treatment. Dry bait. Apply to areas where pests congregate. Repeat as needed.
		40 g/gal [2.5-5 gal/ 1,000 sq.ft] (80% SC/S)	Outdoor treatment. Apply as a coarse spray or brush onto selected surfaces where pest congregates. Mix spray with 1 pound of sugar per gallon for longer residual control. On manure piles, apply the high rate. Repeat at 7 to 14 day intervals as needed.

EPA Index to Pesticide Chemicals

DIMETHYL (2,2,2-TRICHLORO-1-HYDROXYETHYL)PHOSPHONATE

<u>Site and Pest</u>	<u>Dosages and Formulation(s)</u>	<u>Tolerance, Use, Limitations</u>
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Domestic Dwellings (Outdoor) (continued)

ISASAVA	Texas harvester ant	0.67-1 cup 5% G/mound (5% G)	Broadcast application over mound surface. Inspect treated mound regularly and repeat applications as needed.
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Refer to ORNAMENTALS, (Ornamental Plants (herbaceous, woody shrubs, trees and vines)), Ornamental Evergreen cluster for additional information.

Refer to URBAN AND RURAL INDOOR/OUTDOOR AREAS (PUBLIC HEALTH), Recreational Areas (including Picnic Areas) for additional information.

/890030A Garbage Dumps

IVAAABA IOAUFA	Cockroaches House fly	0.04 oz/ 1,000 sq.ft (1% G)	Dry bait. Scatter directly on garbage dumps where pests breed or congregate.
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		0.16 oz/gal (1% G)	Liquid bait. Mix with 1 pound of sugar or 2 cups of corn syrup. Sprinkle directly on garbage dumps where pests breed or congregate.
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IOAUFA	House fly	1% impr waxed tray (1% Impr)	Bait application. Dip tray in water before attaching tray under garbage can lids or hanging on walls outdoors where pests accumulate. Keep waxed tray moist.
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		40 g/gal [5 gal/ 1,000 sq.ft] (80% SC/S)	Use limited to professional pest control operators. Apply as a coarse spray. Mix spray with 1 pound of sugar per gallon for longer residual control. Repeat at 7 to 14 day intervals as needed.
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/880030A Latrines (Outdoor)

IVAAABA IOAUFA	Cockroaches House fly	0.04 oz/ 1,000 sq.ft (1% G)	Dry bait. Scatter lightly where pests breed or congregate. For faster results, apply to a moistened surface.
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		0.16 oz/gal (1% G)	Liquid bait. Spot treatment. Mix with 1 pound of sugar or 2 cups of corn syrup. Sprinkle where pests congregate.
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EPA Index to Pesticide Chemicals

DIMETHYL (2,2,2-TRICHLORO-1-HYDROXYETHYL)PHOSPHONATE

<u>Site and Pest</u>	<u>Dosages and Formulation(s)</u>	<u>Tolerance, Use, Limitations</u>
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URBAN AND RURAL INDOOR/OUTDOOR AREAS (PUBLIC HEALTH)

/670020A /630030A	<u>Recreational Areas (including Picnic Areas)</u>		
IVAAABA IOAUFA	Cockroaches House fly	0.04 oz/ 1,000 sq.ft (1% G)	Dry bait. Scatter lightly where pests breed or congregate. For faster results, apply to a moistened surface.
		0.16 oz/gal (1% G)	Liquid bait. Mix with 1 pound of sugar or 2 cups of corn syrup. Sprinkle where pests congregate.
		Syrup bait (1% G)	Syrup bait. Spot treatment. Mix in enough water to make a syrup. Brush on vertical surfaces and other areas where pests congregate.
IOAUFA	House fly	1% impr waxed tray (1% Impr)	Bait application. Dip tray in water before attaching tray under garbage can lids or hanging on walls outdoors where pests accumulate. Keep waxed tray moist. Apply to areas inaccessible to children and pets.
/890030A	<u>Garbage Dumps (Recreational Area Premises)</u>		
IVAAABA IOAUFA	Cockroaches House fly	0.04 oz/ 1,000 sq.ft (1% G)	Dry bait. Scatter directly on garbage dumps where pests breed or congregate.
		0.16 oz/gal (1% G)	Liquid bait. Mix with 1 pound of sugar or 2 cups of corn syrup. Sprinkle directly on garbage dumps where pests breed or congregate.
IOAUFA	House fly	1% impr waxed tray (1% Impr)	Bait application. Dip tray in water before attaching tray under garbage can lids or hanging on walls outdoors where pests accumulate. Keep waxed tray moist. Apply to areas inaccessible to children and pets.

EPA Index to Pesticide Chemicals

DIMETHYL (2,2,2-TRICHLORO-1-HYDROXYETHYL)PHOSPHONATE

<u>Site and Pest</u>	<u>Dosages and Formulation(s)</u>	<u>Tolerance, Use, Limitations</u>
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COMMERCIAL ESTABLISHMENTS

General Warnings and Limitations: Good sanitation is a necessary part of any house fly control program. Baits may be used in edible product areas. Do not use other formulations in edible product areas of food processing plants, restaurants, or other areas where food is commercially prepared or processed. Do not use in serving areas while food is exposed. Apply baits in areas inaccessible to children and animals.

(Commercial Establishments (edible product areas))

/71009JB	<u>Poultry Packing Plants</u>		
/71008JB	<u>Red Meat Packing Plants</u>		Use limited to federally inspected plants. Use only when the facility is not in operation and food is not exposed. Use only in bait boxes where bait in each box can be accounted for. Remove and account for all bait boxes prior to resuming food processing.
IVAAABA	Cockroaches	0.04 oz/	Indoor treatment. Dry bait.
IOAUFAA	House fly	1,000 sq.ft (1% G)	
		0.16 oz/gal (1% G)	Indoor treatment. Liquid bait. Mix with 1 pound of sugar or 2 cups of corn syrup.
		Syrup bait (1% G)	Indoor treatment. Syrup bait. Mix in enough water to make a syrup.

(Commercial Establishments (areas other than edible product))

General Warnings and Limitations: Do not treat cannery waste which may be fed to livestock. Do not contaminate feed, food, water, or food processing equipment.

/77000JC	<u>Commercial, Institutional and Industrial Areas (Inedible Areas)</u>		
/72000JC	<u>Eating Establishments (Inedible Areas)</u>		The 80 percent soluble concentrate/ solid formulation is limited to professional pest control operators.
/71000JC	<u>Food Processing, Handling and Storage Plants/Areas (Inedible Areas)</u>		
ISASAAA	Ants	0.4-0.8 oz/	Outdoor treatment. Dry bait. Apply
IVAHAHA	Crickets	1,000 sq.ft (5% G)	around perimeter of building.

EPA Index to Pesticide Chemicals

DIMETHYL (2,2,2-TRICHLORO-1-HYDROXYETHYL)PHOSPHONATE

<u>Site and Pest</u>		<u>Dosages and</u> <u>Formulation(s)</u>	<u>Tolerance, Use, Limitations</u>
<u>Commercial, Institutional and Industrial Areas (Inedible Areas)</u> (continued)			
IVAAABA	Cockroaches	Bait (1% G)	Indoor treatment. Dry bait. Place a small quantity on pieces of paper, cardboard, or in shallow jar lids in locations inaccessible to children and animals. Place where dying insects cannot fall into food, utensils, or drinking water. Wet the bait slightly for increased killing efficiency.
IOAUFA	House fly	40 g/gal [1.33 gal/ 1,000 sq.ft] (80% SC/S)	Indoor or outdoor treatment. Apply as a coarse spray or brush onto selected interior and exterior surfaces of buildings where pest congregates. Apply only when animals and humans are absent. Do not allow reentry until treated surfaces are dry. Mix spray with 1 pound of sugar per gallon for longer residual control. Repeat at 7 to 14 day intervals as needed.
		40 g/8.75 lb sugar [4 tbs/ 1,000 sq.ft] (80% SC/S)	Indoor or outdoor treatment. Apply where pest congregates. Repeat as needed.
		0.04 oz/ 1,000 sq.ft (1% G)	Outdoor treatment. Dry bait. Scatter on ground where pest congregates.
ISASAVA	Texas harvester ant	0.67-1 cup 5% G/mound (5% G)	Broadcast application over mound surface. Inspect treated mound regularly and repeat applications as needed.
/890030A	<u>Garbage Dumps</u>		
IVAAABA	Cockroaches	0.04 oz/ 1,000 sq.ft (1% G)	Dry bait. Scatter directly on garbage dumps where pests breed or congregate.
IOAUFA	House fly		

EPA Index to Pesticide Chemicals

DIMETHYL (2,2,2-TRICHLORO-1-HYDROXYETHYL)PHOSPHONATE

<u>Site and Pest</u>	<u>Dosages and Formulation(s)</u>	<u>Tolerance, Use, Limitations</u>
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Garbage Dumps (continued)

40 g/gal [5 gal/ 1,000 sq.ft] (80% SC/S)	Outdoor treatment. Apply to garbage piles. Mix with 1 pound of sugar per gallon for longer residual control. Repeat at 7 to 14 day intervals as needed.
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AERIAL, MOTHPROOFING AND TANK MIX APPLICATIONS

9001500
AAAAAAA

Aerial Application

Refer to
AGRICULTURAL CROPS
All sites except Field Crops, Truck Crops, Tobacco (to be transplanted)
FOREST, CHAPARRAL, NONAGRICULTURAL AND WASTELANDS
Forest Trees

EPA Index to Pesticide Chemicals

DIMETHYL (2,2,2-TRICHLORO-1-HYDROXYETHYL)PHOSPHONATE

Listing of Registered Pesticide Products by Formulation

90% technical chemical

dimethyl (2,2,2-trichloro-1-hydroxyethyl) phosphonate (057901)
011556-00006

97% technical chemical

dimethyl (2,2,2-trichloro-1-hydroxyethyl) phosphonate (057901)
011678-00003 013801-00015 040831-00108

98% technical chemical

dimethyl (2,2,2-trichloro-1-hydroxyethyl) phosphonate (057901)
002749-00181 003125-00009 011556-00030

80% formulation intermediate

dimethyl (2,2,2-trichloro-1-hydroxyethyl) phosphonate (057901)
002749-00103 003125-00066 003125-00129 007173-00104
011678-00010 040831-00107

82% formulation intermediate

dimethyl (2,2,2-trichloro-1-hydroxyethyl) phosphonate (057901)
011556-00055

3% dust

dimethyl (2,2,2-trichloro-1-hydroxyethyl) phosphonate (057901)
001202-00269

5% dust

dimethyl (2,2,2-trichloro-1-hydroxyethyl) phosphonate (057901)
000635-00395 000769-00396 001202-00268 002342-00913
002749-00331 003125-00064 010226-00036 040831-00102
044317-00026

8% dust

dimethyl (2,2,2-trichloro-1-hydroxyethyl) phosphonate (057901)
040831-00104

0.4% granular

dimethyl (2,2,2-trichloro-1-hydroxyethyl) phosphonate (057901)
002724-00225

0.92% granular

dimethyl (2,2,2-trichloro-1-hydroxyethyl) phosphonate (057901)
009172-00001

1% granular

dimethyl (2,2,2-trichloro-1-hydroxyethyl) phosphonate (057901)
000239-00778 000270-00057 000327-00095 000869-00146
001386-00281 001990-00491 002217-00557 003125-00007
003125-00151 006762-00052 008590-00170 042057-00077

EPA Index to Pesticide Chemicals

DIMETHYL (2,2,2-TRICHLORO-1-HYDROXYETHYL)PHOSPHONATE

Listing of Registered Pesticide Products by Formulation (continued)

3% granular

dimethyl (2,2,2-trichloro-1-hydroxyethyl) phosphonate (057901)
010226-00029

3.5% granular

dimethyl (2,2,2-trichloro-1-hydroxyethyl) phosphonate (057901)
037686-00059

4% granular

dimethyl (2,2,2-trichloro-1-hydroxyethyl) phosphonate (057901)
002393-00437 009779-00187 037686-00058

5% granular

dimethyl (2,2,2-trichloro-1-hydroxyethyl) phosphonate (057901)
000829-00203 002269-00154 002935-00401 003125-00076
003125-00217 005905-00229 006735-00193 007001-00113
008612-00081 037686-00049

6.2% granular

dimethyl (2,2,2-trichloro-1-hydroxyethyl) phosphonate (057901)
002169-00211

5% pelleted/tableted

dimethyl (2,2,2-trichloro-1-hydroxyethyl) phosphonate (057901)
006973-00006

37.8% pelleted/tableted

dimethyl (2,2,2-trichloro-1-hydroxyethyl) phosphonate (057901)
000618-00085

90% pelleted/tableted

dimethyl (2,2,2-trichloro-1-hydroxyethyl) phosphonate (057901)
000270-00060 000602-00214

37.8% wettable powder/dust

dimethyl (2,2,2-trichloro-1-hydroxyethyl) phosphonate (057901) plus
thiabendazole (060101)
000618-00086

1% impregnated materials

dimethyl (2,2,2-trichloro-1-hydroxyethyl) phosphonate (057901)
001663-00014

4 lb/gal soluble concentrate/liquid

dimethyl (2,2,2-trichloro-1-hydroxyethyl) phosphonate (057901)
003125-00143 003125-00210 006735-00206 006735-00208
040831-00111 042057-00097

6 lb/gal soluble concentrate/liquid

dimethyl (2,2,2-trichloro-1-hydroxyethyl) phosphonate (057901)
040831-00106

EPA Index to Pesticide Chemicals

DIMETHYL (2,2,2-TRICHLORO-1-HYDROXYETHYL)PHOSPHONATE

Listing of Registered Pesticide Products by Formulation (continued)

40.5% soluble concentrate/liquid

dimethyl (2,2,2-trichloro-1-hydroxyethyl) phosphonate (057901)
002749-00138 008730-00030 045128-00002

50% soluble concentrate/solid

dimethyl (2,2,2-trichloro-1-hydroxyethyl) phosphonate (057901)
003125-00049 003125-00089

80% soluble concentrate/solid

dimethyl (2,2,2-trichloro-1-hydroxyethyl) phosphonate (057901)
000769-00506 001021-00336 001023-00051 002749-00107
002749-00116 003125-00118 003125-00184 003125-00227
003770-00287 011556-00031 011556-00039 011678-00011
040831-00103

1.5 lb/gal liquid ready-to-use

dimethyl (2,2,2-trichloro-1-hydroxyethyl) phosphonate (057901) plus
petroleum distillate (063503)
003125-00278

8% liquid ready-to-use

dimethyl (2,2,2-trichloro-1-hydroxyethyl) phosphonate (057901)
002393-00389 002724-00218 002749-00147 003770-00288
011556-00032

9999999

State Label Registrations

AZ Reg. No.

010163-06400 037832-08360

CA Reg. No.

001202-05069 003125-07849 003125-07850 005967-05190
006023-03051 006973-03552 006973-03553 006973-03554
007001-07754 008434-04719 008434-04721 009319-04535
009319-04536 009319-04550 011093-07253

FL Reg. No.

002342-06966 002342-06968 003125-07838 009859-03942
009859-04432 014775-08743 035222-07160

GA Reg. No.

001812-03875

NY Reg. No.

003125-07832 038655-10422

PA Reg. No.

003125-07831

TX Reg. No.

003125-07830

Issued: 3-22-82

III-057901-52

II. REQUIREMENT FOR SUBMISSION OF GENERIC DATA

- A. This portion of the guidance document is a Notice issued under the authority of FIFRA Section 3(c)(2)(B) and describes, in table format, the data required for maintaining the registrability of each product. Additionally, a bibliography (Appendix II-1) is included that identifies that data considered as part of the data base supporting this standard. EPA has determined that additional generic data described in this Notice must be submitted to EPA for evaluation in order to maintain in effect the registration(s) of your product(s) identified as an attachment to the cover letter accompanying this guidance document. As required by FIFRA Section 3(c)(2)(B), you are required to take appropriate steps to comply with this Notice.

EPA may suspend the registration of each of those products unless, within the specified time, you have informed EPA how you will satisfy the requirements of this Notice. Any such suspension will remain in effect until you have complied with the terms of this Notice.

- B. What Generic Data ^{1/} Must Be Submitted. You may ascertain which generic data you must submit by consulting Table A at the end of this chapter. That table shows all the generic data needed to evaluate the continued registrability of all products, and the dates by which the data must be submitted. The required data must be submitted and any necessary studies must be conducted in accordance with EPA-approved protocols, the Pesticide Registration Guidelines ^{2/}, or data collected under the approved protocols of the Organization for Economic Cooperation and Development (OECD). If you wish not to develop data which are necessary to support the registration or reregistration of certain uses appearing in your labeling, you may delete those uses at the time you submit your revised labeling.

Also for certain kinds of testing (generally ecological effects), EPA requires the test substance to be a "typical formulation," and in those cases EPA needs data of that

^{1/} Generic data pertain to the properties or effects of a particular ingredient, and thus are relevant to an evaluation of the risks of all products containing that ingredient (or all such products having a certain use pattern), regardless of any such product's unique composition or use. Product-specific data relate only to the properties or effects of a product with a particular composition (or a group of products with closely similar composition).

^{2/} The Pesticide Registration Guidelines were repropoed on November 24, 1982 in 47 Federal Register 53192.

type for each major formulation category (e.g., emulsifiable concentrates, wettable powders, granulars, etc.) These are classified as generic data and when needed are specified in Table A. EPA may possess data on certain "typical formulations" but not others. Note: The "typical formulation" data should not be confused with product-specific data (Table B) which are required on each formulation. Product-specific data are further explained in Chapter IV of this document.

C. Options Available for Complying With Requirements to Submit Data

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

1. (a) Notify EPA that you will submit the data, and
(b) either submit the existing data you believe will satisfy the requirement, or state that you will generate the data by conducting testing. If the test procedures you will use deviate from (or are not specified in) the Registration Guidelines or protocols contained in the Reports of Expert Groups to the Chemicals Group, Organization for Economic Cooperation and Development (OECD) Chemicals Testing Programme, you must enclose the protocols you will use.
2. Notify EPA that you have entered into an agreement with one or more other registrants to jointly develop (or share in the cost of developing) the data. If you elect this option, you must notify EPA which registrant(s) are parties to the agreement.
3. File with EPA a completed "Certification of Attempt to Enter Into an Agreement With Other Registrants for Development of Data" (EPA Form 8580-6, Appendix II-3)*
4. Request that EPA amend your registration by deleting the uses for which the data are needed. (This option is not available to applicants for new products.)

*/ FIFRA Section 3(c)(2)(B) authorizes joint development of data by two or more registrants, and provides a mechanism by which parties can obtain an arbitrator's decision if they agree to jointly develop data but fail to agree on all the terms of the agreement. The statute does not compel any registrant to agree to develop data jointly.

(Footnote continued at bottom of next page)

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

D. Procedures for Requesting Changes in Testing Methodology and Extensions of Time

EPA recognizes that you may disagree with our conclusions regarding the appropriate ways to develop the required data or how quickly the data must be submitted. If the test procedures you plan to use deviate from (or are not specified in) the registration guidelines or protocols contained in the reports of the Expert Groups to the Chemical Groups, Organization for Economic Cooperation and Development (OECD) Chemicals Testing Programme, you must submit the protocol for Agency review prior to the initiation of the test.

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

(Footnote continued from previous page)

In EPA's opinion, joint data development by all registrants who are subject to the requirements to submit a pertinent item of data or a cost-sharing agreement among all such registrants is clearly in the public interest. Duplication of testing could increase costs, tie up testing facilities, and subject an unnecessarily large number of animals to testing.

As noted earlier, EPA has discretion not to suspend the registration of a product when a registrant fails to submit data required under FIFRA Section 3(c)(2)(B). EPA has concluded that it is appropriate to exercise its discretion not to suspend in ways which will discourage duplicative testing. Accordingly, if (1) a registrant has informed us of his intent to develop and submit data required by this Notice; and (2) a second registrant informs EPA that it has made a bona fide offer to the first registrant to share in the expenses of the testing [on terms to be agreed upon or determined by arbitration under FIFRA Section 3(c)(2)(B)(iii)]; and (3) the first registrant has declined to agree to enter into a cost-sharing agreement, EPA will not suspend the second firm's registration. While the first firm is not required to agree to jointly develop data, EPA is not required to force the second firm to engage in economically inefficient duplicative testing in order to maintain its registration.

TABLE A
GENERIC DATA REQUIREMENTS FOR TRICHLORFON

§158.120 - PRODUCT CHEMISTRY

Guideline Citation and Name of Test	Test Substance <u>1/</u>	Guidelines Status	Are Data Required <u>2/</u>		Footnote Number
YesNo					
PRODUCT IDENTITY:					
61-1 - Identity of Ingredients	TGAI	R	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
61-2 - Statement of Composition	TGAI	R	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
61-3 - Discussion of Formation of Ingredients	TGAI	R	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
<u>Analysis and Certification of Product Ingredients</u>					
62-1 - Preliminary Analysis	TGAI	CR	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
62-2 - Certification of Limits	TGAI	R	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
62-3 - Analytical Methods for Enforcement of Limits	TGAI	R	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
<u>Physical and Chemical Characteristics</u>					
63-2 - Color	TGAI	R	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
63-3 - Physical State	TGAI	R	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
63-4 - Odor	TGAI	R	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

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TABLE A
GENERIC DATA REQUIREMENTS FOR TRICHLORFON

§158.120 - PRODUCT CHEMISTRY (Con't)

Guideline Citation and Name of Test	Test Substance <u>1/</u>	Guidelines Status	Are Data Required <u>2/</u>		Footnote Number
YesNo					
<u>Physical and Chemical Characteristics</u> (Continued)					
63-5 - Melting Point	TGAI	R	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
63-6 - Boiling Point	TGAI	R	<input type="checkbox"/>	<input checked="" type="checkbox"/>	3/
63-7 - Density, Bulk Density, or Specific Gravity	TGAI	R	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
63-8 - Solubility	TGAI or PAI	R	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
63-9 - Vapor Pressure	PAI	R	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
63-10 - Dissociation constant	PAI	R	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
63-11 - Octanol/water partition coefficient	PAI	R	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
63-12 - pH	TGAI	R	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
63-13 - Stability	TGAI	R	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
63-20 - Corrosion Characteristics	TGAI	R	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

Other Requirements:

64-1 - Submittal of samples	Choice	CR	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
.....					

DATA REQUIREMENT FOOTNOTES:

1/ Composition: TGAI=Technical Grade of the Active Ingredient; PAI=Pure Active Ingredient

2/ Data must be submitted no later than December, 1984.

3/ Not required because the technical material is a solid at room temperature.

TABLE A
GENERIC DATA REQUIREMENTS FOR TRICHLORFON

Data Requirements	^{1/} Composition	Does EPA Have Data To Satisfy This Requirement? (Yes, No or Partially)	Bibliographic Citation	Must Additional Data Be Submitted Under FIFRA Section 3(c)(2)(B)? ^{2/}
<u>158.125 Residue Chemistry</u>				
171-4 - Nature of Residue (Metabolism)				
- Plants	PAIRA	Partial	00005296 00005300 00091787	Yes ^{3/}
- Livestock	PAIRA and plant metabolites	Partial	00005297	Yes ^{4/}
171-4 - Residues Analytical Method				
- Plant residues	TGAI and meta- bolites	Yes	GS0104038 GS0104005 GS0104007 GS0104041 GS0104060 GS0104001 GS0104002	No
- Animal residues	TGAI and meta- bolites	Yes	GS0104006 GS0104056 GS0104057	No
171-4 - Storage Stability Data	PAI	Yes	GS0104008 GS0104061	No

TABLE A
GENERIC DATA REQUIREMENTS FOR TRICHLORFON

Data Requirements	Composition ^{1/}	Does EPA Have Data To Satisfy This Requirement? (Yes, No or Partially)	Bibliographic Citation	Must Additional Data Be Submitted Under FIFRA Section 3(c)(2)(B)? ^{2/}
<u>158.125 Residue Chemistry</u> (continued)				
171-4 - Magnitude of the Residue- Residue Studies for Each Food Use ^{5/}				
- <u>Root and Tuber Vegetables Group</u>				
° Rutabagas	TEP	No	-	Yes ^{6/}
° Beets	TEP	Yes	GS0104009	No
° Radishes	TEP	No	-	Yes ^{6/}
° Carrots	TEP	Partial	GS0104010	Yes ^{7/}
° Sugar Beets	TEP	No	-	Yes ^{8/}
° Turnips	TEP	No	-	Yes ^{6/}
- <u>Leaves of Root and Tuber Vegetables Group</u>				
° Beet Tops	TEP	Yes	GS0104009	No ^{9/}
° Sugar Beet Tops	TEP	No	-	Yes ^{45/}
- <u>Bulb Vegetables Group</u>				
° Garlic	TEP	No	-	Yes ^{6/}
° Onions	TEP	No	-	Yes ^{6/}
- <u>Leafy Vegetables (Except Brassica Vegetables) Group</u>				
° Spinach	TEP	No	-	Yes ^{6/}
° Lettuce	TEP	Partial	GS0104011	Yes ^{10/}
° Celery	TEP	No	-	Yes ^{6/}

TABLE A
GENERIC DATA REQUIREMENTS FOR TRICHLORFON

Data Requirements	Composition ^{1/}	Does EPA Have Data To Satisfy This Requirement? (Yes, No or Partially)	Bibliographic Citation	Must Additional Data Be Submitted Under FIFRA Section 3(c)(2)(B)? ^{2/}
<u>158.125 Residue Chemistry</u>				
(continued)				
171-4 - Magnitude of the Residue- Residue Studies (continued)				
- <u>Brassica Leafy Vegetables Group</u>				
° Brussels Sprouts	TEP	No	-	Yes ^{11/}
° Broccoli	TEP	No	-	Yes ^{6/}
° Cabbage	TEP	No	-	Yes ^{12/}
° Kale	TEP	No	-	Yes ^{6/}
° Cauliflower	TEP	Partial	GS0104012	Yes ^{13/}
° Collards	TEP	No	-	Yes ^{14/}
- <u>Legume Vegetables (Succulent or Dried) Group</u>				
° Cowpeas (succulent and dried)	TEP	Partial	GS0104013	Yes ^{15/}
° Dried Beans	TEP	Partial	GS0104003	Yes ^{16/}
° Lima Beans	TEP	Partial	GS0104014 GS0104062	Yes ^{17/}
° Snap Beans	TEP	Partial	GS0104015	Yes ^{18/}
- <u>Foliage of Legume Vegetables Group</u>				
° Bean Vines	TEP	No	-	Yes ^{19/}
° Cowpea Vines	TEP	Partial	GS0104013	Yes ^{20/}
° Lima Bean Vines and Hay	TEP	Partial	GS0104014 GS0104063	Yes ^{21/}

TABLE A
GENERIC DATA REQUIREMENTS FOR TRICHLORFON

Data Requirements	Composition ^{1/}	Does EPA Have Data To Satisfy This Requirement? (Yes, No or Partially)	Bibliographic Citation	Must Additional Data Be Submitted Under FIFRA Section 3(c)(2)(B)? ^{2/}
<u>158.125 Residue Chemistry</u> (continued)				
171-4 - Magnitude of the Residue- Residue Studies (continued)				
- <u>Fruiting Vegetables (Except Cucurbits) Groups</u>				
° Peppers	TEP	Partial	GS0104016	Yes ^{22/}
° Tomatoes	TEP	Partial	GS0104017	Yes ^{23/}
- <u>Fruiting Vegetables Curcubits Group</u>				
° Pumpkins	TEP	Partial	GS0104018	Yes ^{24/}
° Watermelon	TEP	No	-	Yes ^{6/}
- <u>Citrus Fruits Groups</u>				
° Citrus Fruits	TEP	Partial	GS0104064	Yes ^{25/}
- <u>Small Fruits and Berries Group</u>				
° Blueberries	TEP	Yes	GS0104067	No
° Strawberries	TEP	No	-	Yes ^{6/}
- <u>Cereal Grains Group</u>				
° Barley	TEP	Partial	GS0104019	Yes ^{26/}
° Corn	TEP	Yes	GS0104043 GS0104020	No
° Oats	TEP	Partial	GS0104021	Yes ^{27/}
° Wheat	TEP	Partial	GS0104022	Yes ^{28/}

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GENERIC DATA REQUIREMENTS FOR TRICHLORFON

Data Requirements	Composition ^{1/}	Does EPA Have Data To Satisfy This Requirement? (Yes, No or Partially)	Bibliographic Citation	Must Additional Data Be Submitted Under FIFRA Section 3(c)(2)(B)? ^{2/}
<u>158.125 Residue Chemistry</u> (continued)				
171-4 - Magnitude of the Residue- Residue Studies (continued)				
- <u>Forage, Fodder, and Straw of Cereal Grains Group</u>				
° Barley Forage and Straw	TEP	Partial	GS0104044 GS0104023	Yes ^{29/}
° Corn Forage and Fodder	TEP	Yes	GS0104045 GS0104024	No
° Oat Forage and Straw	TEP	Partial	GS0104046 GS0104025	Yes ^{30/}
° Wheat Forage and Straw	TEP	Partial	GS0104047 GS0104026	Yes ^{31/}
- <u>Grass Forage, Fodder, and Hay Group</u>				
° Pasture Grasses (forage and hay)	TEP	Partial	GS0104048	Yes ^{32/}
° Rangeland Grasses (Forage and Hay)	TEP	Partial	GS0104049	Yes ^{33/}
- <u>Non-Grass Animal Feeds (Forage, Fodder, Straw, and Hay) Group</u>				
° Alfalfa Forage and Hay	TEP	Partial	GS0104050 GS0104027	Yes ^{34/}
° Birdsfoot Trefoil Hay	TEP	Partial	GS0104068 GS0104051	Yes ^{35/}
° Clover Forage and Hay	TEP	Partial	GS0104052 GS0104028 GS0104053 GS0104054	Yes ^{36/}

TABLE A
GENERIC DATA REQUIREMENTS FOR TRICHLORFON

Data Requirements	Composition ^{1/}	Does EPA Have Data To Satisfy This Requirement? (Yes, No or Partially)	Bibliographic Citation	Must Additional Data Be Submitted Under FIFRA Section 3(c)(2)(B)? ^{2/}
<u>158.125 Residue Chemistry</u> (continued)				
171-4 - Magnitude of the Residue- Residue Studies (continued)				
- <u>Miscellaneous Crops</u>				
° Artichokes	TEP	No	-	Yes ^{37/}
° Bananas	TEP	Yes	GS0104040	No
° Cottonseed	TEP	No	-	Yes ^{38/}
° Flax	TEP	Partial	GS0104030	Yes ^{39/}
° Peanuts	TEP	Yes	GS0104058	No
° Safflower Seed	TEP	Partial	GS0104031	Yes ^{40/}
° Tobacco	TEP	No	-	Yes ^{41/}
- <u>Food Producing Animals</u>				
° Cattle (Fat, meat and meat byproducts)	EP, TGAI or Plant Metabolites	Partial	GS0104032 GS0104033 GS0104034 GS0104035 GS0104036 GS0104065	Yes ^{42/}
° Goats, Horses, and Sheep	EP, TGAI or Plant Metabolites	Yes	GS0104066	No
° Milk	EP, TGAI or Plant Metabolites	Partial	GS0104037 GS0104038 GS0104055	Yes ^{43/}
° Poultry and Eggs	EP, TGAI or Plant Metabolites	Partial	GS0104004	Yes ^{44/}

TABLE A
Generic Data Requirements for Trichlorfon

§158.125 Residue Chemistry

- 1/ Composition: TGAI = Technical grade of the active ingredient; PAIRA = Pure active ingredient, radiolabelled; TEP = Typical end-use product; EP = End-use product.
- 2/ Data must be submitted no later than June, 1987.
- 3/ The following additional data are required:
 - o Studies demonstrating the degree of absorption of trichlorfon by both leaves and roots of representative crops as well as the subsequent translocation and metabolism of trichlorfon and/or its metabolites. [¹⁴C]Trichlorfon must be used for these studies. An attempt must be made to identify all metabolites including volatile, toxic compounds (which may include DDVP). If additional metabolites of concern are indicated, additional methodology and residues studies for the r.a.c.s may be required.
- 4/ The following studies are required to adequately define the animal metabolism of trichlorfon:
 - o Metabolism studies utilizing both poultry and ruminants. Animals must be orally dosed with [¹⁴C]trichlorfon and the identity and distribution of residues in tissues, milk, and eggs, where appropriate, must be determined. If, however, the ruminant study indicates that no additional metabolites of concern exist then the poultry study may be waived.
 - o In addition, a metabolism study with [¹⁴C]trichlorfon should be performed reflecting the use of the high-pressure dermal spray application of the 80% SC/S at 8 lb. a.i./A gallon. Meat and milk samples must be analyzed for the identity and distribution of possible residues of concern.
 - o If additional residues of concern besides the parent compound trichlorfon per se are found, additional methodology and residue data for meat and milk may have to be submitted.
- 5/ Dust formulations are manufactured in low volumes and are rarely applied to crops. Therefore, data are not required for dust formulations unless there is an indication that dust is frequently used on a given crop.
- 6/ There are currently no federally registered products for this use.
- 7/ The available data do not support the established tolerance for carrots. Residue data were submitted only for SC/S applications. These residue values were below the tolerance; however, geographic representation was inadequate. The following additional data are required:

TABLE A
Generic Data Requirements for Trichlorfon

§158.125 Residue Chemistry
(continued)

- o Foliar treatments (aerial and ground) at geographically representative field sites with either one of the SC/L or one of the SC/S formulations at 1.5 lb ai/A and subsequent residue analyses which reflect the maximum registered use pattern. Field site data must include arid regions in California; alternatively, a label restriction against usage on irrigated carrots may be proposed.
 - o The registrant must submit information specifying the method of application used in the tests reviewed in this section of the trichlorfon Standard.
- 8/ No valid data are available to support the sugar beet tolerance; all residue data submitted were generated with an invalid cholinesterase inhibition technique. The following data are required:
- o Foliar treatments with one of the SC/L or SC/S formulations at 1.5 lb ai/A and subsequent residue analyses on roots which reflect the maximum current use pattern.
 - o Residue data for processed sugar beet products (molasses, dehydrated pulp, and refined sugar) if residues are detected in the raw agricultural commodity.
- 9/ Based on the available data, a tolerance of 0.1 ppm (negligible) should be established for trichlorfon residues in or on table beet tops. No Codex MRL or Canadian or Mexican tolerance exists for trichlorfon residues in or on beet tops. The existing label directions are considered to be adequate except that the restriction against using beet tops as food must be deleted.
- 10/ The available residue data are not sufficient to support the established tolerance for lettuce. Only the 50% SC/S formulation was tested; residues were below the tolerance except in the case of the trial conducted in CA, the principal growing region. Several pertinent aspects were unspecified: whether or not data for head lettuce represent heads with or without wrapper leaves, the application method (aerial or ground), and whether or not field sites in CA and AZ were irrigated. Additional data are required which reflect:
- o Field trials in CA or AZ (irrigated and non-irrigated plots of head and leaf lettuce) and in CO and NY with one of the SC/S formulations at 1 lb ai/A. Soil and foliar applications must be made at three or more weekly intervals with ground and aerial equipment. Sampling (with and without wrapper leaves) should reflect the maximum current use pattern.

TABLE A
Generic Data Requirements for Trichlorfon

§158.125 Residue Chemistry
(continued)

- o Head and leaf lettuce field trials in CA or AZ (irrigated and non-irrigated plots) and CO and NY with one of the G formulations at 1.5 lb ai/A. Applications (over the row and around the plant base) must be made at three or more weekly intervals with ground and aerial equipment. Sampling (with and without wrapper leaves) should reflect the current maximum application rate and use.
- 11/ There are no valid data to support the established tolerance for residues resulting from the maximum registered rate for brussels sprouts because the analytical method used to detect trichlorfon residues is invalid. The following residue data are required:
- o Field trials from sites in CA, TX, and AZ using one of the SC/S formulations or the 6 lb/gal SC/L formulation at 1 lb ai/A. Soil and foliar applications must be made at three or more weekly intervals with ground and aerial equipment. Sampling should reflect the maximum current use pattern.
- 12/ There are no valid data to support the established tolerance for residues resulting from the maximum registered rate for cabbage because the colorimetric method used detected the degradation products of trichlorfon rather than the parent compound. Further, the analytical method (a cholinesterase inhibition technique) used to detect trichlorfon residues is not valid. The following data are required:
- o Field trials from sites in FL, TX, NC, NJ, and CA using the 6 lb/gal SC/L or one of the SC/S formulations at 1 lb ai/A, and one of the G (bait) formulations at 1 lb ai/A. Soil (G only) and foliar applications must be made at three or more weekly intervals with ground and aerial equipment. Sampling (with and without wrapper leaves) should reflect the maximum current use pattern.
- 13/ The available data do not support the established tolerance for residues in or on cauliflower resulting from the maximum registered rate. Only the 5% D formulation was tested at a single Canadian site and the application method (ground or aerial) was unspecified. Other data were obtained with an invalid analytical method (a cholinesterase inhibition technique) used to detect trichlorfon residues. The following data are required:
- o Field trials from sites in CA, AZ, NY, and MI using one of the SC/S formulations or the 6 lb/gal SC/L formulation at 1 lb ai/A and one of the G (bait) formulations at 1 lb ai/A. Soil (G only) and foliar applications must be made at three or more weekly intervals with ground and aerial equipment. Sampling should reflect the maximum current use pattern.

TABLE A
Generic Data Requirements for Trichlorfon

§158.125 Residue Chemistry
(continued)

- 14/ There are no valid data to support the established tolerance for trichlorfon residues in or on collards resulting from the maximum registered rate because the analytical method (a cholinesterase inhibition technique) used to detect trichlorfon residues is not valid. The following data are required.
- o Field trials from two or more Gulf Coast localities using one of the SC/S formulations or the 6 lb/gal SC/L formulation at 1 lb ai/A and one of the G (bait) formulations at 1.5 lb ai/A. Soil and foliar applications must be made at three or more weekly intervals with ground and aerial equipment. Sampling should reflect the maximum use pattern.
- 15/ The available data do not support the established tolerance for cowpeas; however, residue data submitted for the SC/S formulation were below the tolerance. Only one dried bean sample was submitted. The following additional data are required:
- o Soil applications with one of the G formulations (bait) at 1 lb ai/A and subsequent residue analyses on cowpeas, which reflect the maximum current use pattern. Data on dried seed must also be provided.
- 16/ The available data do not support the established tolerance for residues of trichlorfon in or on dried beans. However, residues in or on dried soybeans grown in north central and southern states and Ontario were <0.02 ppm >14 days after the last of four applications of the 80% SC/S or 4 lb/gal SC/L formulations at <1.5 lb ai/A; these data satisfy the dried bean data requirements for SC/S and SC/L applications at all geographic locations except CA, CO, and WA. The following additional data are required:
- o Foliar applications with one of the SC/S or SC/L formulations and soil applications with one of the G formulations (bait) at 1.5 lb ai/A and subsequent residue analyses on dried beans which reflect the maximum current use pattern. Full geographic representation is required for G applications; SC/S or SC/L field trial data are needed only for CA, CO, and WA.
- 17/ The available data do not support the established tolerance for lima beans; however, data submitted for SC/S and SC/L applications were below the tolerance. The following additional data are required:
- o Broadcast soil applications with one of the G formulations (bait) at 1.5 lb ai/A and subsequent residue analyses on beans (shelled) and beans in pods at intervals which reflect the maximum current use pattern.

TABLE A
Generic Data Requirements for Trichlorfon

§158.125 Residue Chemistry
(continued)

- 18/ The available data do not support the established tolerance for snap beans. Residue trials were conducted only with the SC/S formulation; the test submitted from Wisconsin contained residue-exceeding values. Also, geographic representation was inadequate. The following additional data are required:
- o Foliar applications with one of the SC/L formulations and soil applications with one of the G formulations (bait) at 1.5 lb ai/A and subsequent residue analyses on beans at intervals which reflect the maximum current use pattern. Test locations must include FL and GA.
- 19/ There are no data to support the established tolerance for bean vines. The following data are required:
- o Residue dissipation studies following foliar applications with one of the SC/L or SC/S formulations at 1.5 lb ai/A; this is necessary to establish a pregrazing interval as well as to support the tolerance for bean vines.
 - o Foliar applications with one of the SC/L or SC/S formulations at 1.5 lb ai/A and subsequent residue analyses on succulent and dried vines (vine hay) harvested 14 days after the last treatment.
- 20/ The available data do not support the established tolerance for cowpea vines. Residue data were submitted only for the SC/S formulation; these residue values were below the tolerance. No data for residues in or on vine hay were submitted. The following additional data are required:
- o Residue dissipation studies following foliar applications with one of the SC/L formulations at 1.5 lb ai/A; and soil application with one of the G formulations (bait) at 1 lb ai/A; this is necessary to establish a pregrazing interval for cowpea vines.
 - o Foliar applications with one of the SC/L or SC/S formulations at 1.5 lb ai/A and soil applications with one of the G formulations (bait) at 1 lb ai/a and subsequent residue analyses on succulent (SC/L and G formulations only) and dried vine (vine hay) harvested 14 days after the last treatment application.
- 21/ The available data do not support the established tolerance for lima bean vines and hay; however, data submitted for SC/S and SC/L applications were below the tolerance.

There are no available data to support the established tolerance for lima bean vine hay. The following additional data are required:

Generic Data Requirements for Trichlorfon

§158.125 Residue Chemistry
(continued)

- o Residue dissipation studies following two soil applications with one of the G formulations (bait) at 1.5 lb ai/A; this is necessary to establish a pregrazing interval for lima bean vines following G applications.
 - o Foliar applications with one of the SC/L or SC/S formulations and soil applications with one of the G formulations at 1.5 lb ai/A and subsequent residue analyses on succulent (G formulations only) and dried vines (vine hay) harvested 3 (SC/S), 14 (SC/L), and 30 (G) days after the last treatment application.
- 22/ The available data do not support the established pepper tolerance following use of the registered formulations at their maximum application rates. Only the 50% SC/S and 5% D formulations were tested and the application method (aerial or ground) was unspecified for both formulations. Additional data are required which reflect:
- o Field trials from sites in FL, CA, NJ, NC and TX using one of the formulations at 1 lb ai/A. Soil (over the row and around plant bases) and foliar applications must be made at three or more weekly intervals with ground and aerial equipment. Sampling should reflect the maximum current use pattern.
- 23/ The available data do not support the established tomato tolerance following use of the registered formulations at their maximum application rates. Residues were below the tolerance; however, only the 5% D and 50% SC/S formulations were tested, the application method (aerial or ground) was unspecified, the principal growing regions of the crop were not represented, and cooked samples were analyzed with an invalid method (see Report No. 2412 for description of the cholinesterase inhibition technique). Additional data are required which reflect:
- o Residue analysis of cooked tomatoes (washed and unwashed) following multiple (three or more) foliar or direct applications with one of the D formulations at 1.25 lb ai/A. The final treatment should be made on the day of sampling.
 - o Field trials from sites in FL and TX using an SC/S formulation at 1 lb ai/A. Foliar applications must be made at three or more weekly intervals with ground and aerial equipment. Sampling should reflect the maximum current use pattern.
 - o Field trials from sites in FL, SC, TX, AR, CA and NJ using one of the G formulations at 1 lb ai/A for multiple (three or more weekly intervals) soil and foliar applications, respectively, with ground and aerial equipment. Sampling should reflect the maximum current use pattern.

Generic Data Requirements for Trichlorfon

§158.125 Residue Chemistry (continued)

- o If residues are found in the tomato fruit, then a processing study is required to determine residues in pomace (wet and dry), puree, catsup and juice.

24/ The available data do not support the established tolerance for pumpkins; however, data are sufficient for SC/S applications. The following additional data are required:

- o Single soil applications (made 14 days prior to harvest) of one of the G formulations at 1 lb ai/A using aerial and ground equipment.

Sufficient data are not available to assess the adequacy of the tolerance covering residues resulting from the maximum registered rate or the label directions. No Canadian or Mexican tolerances exist for residues of trichlorfon in or on pumpkins. The Codex MRL and U.S. tolerance are identical.

25/ The available data do not support the established tolerance for citrus fruit. Since aerial applications can be made using spray volumes as low as 1 gallon/A, aerial ULV data are necessary reflecting that particular use. The following additional data are required:

- o Single aerial ULV application followed by two ground applications of one of the SC/S formulations at 4 lb ai/A and subsequent residue analyses on unwashed whole fruit at intervals which reflect the maximum current use pattern. Data should be submitted for oranges, lemons, and grapefruit.
- o Processing studies on oranges treated according to the application regime outlined above to determine residue in or on wet and dried pulp, oil, peel, juice, and molasses.

26/ The available data do not support the established tolerance for trichlorfon residues in or on barley grain which may result from use of the registered formulations in accordance with the label directions. Only 50% SC/S formulation was tested; residues were below the tolerance, but only one application was made (up to three per season are permitted). The method of application (ground or aerial) was unspecified. Additional residue data are required which reflect the following:

- o Multiple (> 3 weekly intervals) foliar aerial applications of one of the SC/L or one of the SC/S formulations at 1 lb ai/A.
- o If residues occur in grain, then the fractionation study required for wheat will be sufficient to determine residues in barley germ and milled products.

Generic Data Requirements for Trichlorfon

§158.125 Residue Chemistry (continued)

- 27/ The available data do not support the established tolerance for oat grain for the following reasons: only a single application of the 50% SC/L was made (up to three treatments per season are permitted); the application method (aerial or ground) was unspecified; and the tolerance-exceeding residues found in the CA test site cannot be considered anomalous from the limited number of tests provided. Additional data are required which reflect the following:
- o Field trials conducted in NB and OH or NY which include multiple (three or more weekly intervals) foliar, aerial applications of one of the SC/L or SC/S formulations at 1 lb ai/A.
 - o If residues occur in grain, then the fractionation study required for wheat will be sufficient to determine residues in milled products.
- 28/ The available data do not support the established tolerance for wheat grain for the following reasons: only a single application of the 50% SC/L was made (up to three treatments per season are permitted); the application method (aerial or ground) was unspecified; and the tests were not conducted in the principle wheat growing regions. Additional data are required which reflect the following:
- o Field trials conducted in KS, TX or OK, IL or IN, and MT which include multiple (three or more weekly intervals) foliar, aerial applications of one of the SC/L or SC/S formulations at 1 lb ai/A.
 - o If residues occur in grain, then a fractionation study is required to determine residues in milled products and by-products.
- 29/ The available data do not support the established tolerance for residues in or on barley straw which may result from use of the registered formulations at the maximum application rate since only green samples were collected on the day of treatment. The available data do support the established tolerance for barley forage. The following additional residue data are required:
- o Multiple (more than three weekly intervals) foliar, aerial treatments with one of the SC/L formulation or one of the SC/S formulations at 1 lb ai/A. This is necessary to support the straw tolerance and to establish a prefeeding interval.
- 30/ The available residue data do not support the established tolerance for straw since only green samples were collected at zero and 3 days after treatment. The available data do support the established tolerance for oat forage. The following additional residue data are required:

Generic Data Requirements for Trichlorfon

§158.125 Residue Chemistry
(continued)

- o Multiple (three or more weekly intervals) foliar, aerial treatments with one of the SC/L formulation or one of the SC/S formulations at 1 lb ai/A. This is necessary to support the straw tolerance and to establish a prefeeding interval.
- 31/ The available residue data do not support the established tolerance for straw since only green samples were collected on the day of treatment. The available data do support the established tolerance for forage. Additional residue data are required which reflect the following:
- o Multiple (more than three weekly intervals) foliar, aerial treatments with one of the SC/L formulations or one of the SC/S formulations at 1 lb ai/A. This is necessary to support the forage and fodder tolerances and to establish a prefeeding interval.
- 32/ The available residue data do not support the established tolerances for trichlorfon residues in or on pasture grasses and hay following use of the registered formulations at their maximum registered rates. The following additional data are required:
- o Aerial and ground ULV foliar applications of the 4 lb/gal SC/L at 1 lb ai/A followed by a second treatment at 0.5 lb ai/A. Data should be collected for forage and hay on the day of the second application.
 - o Sufficient data are available for dilute foliar applications of the 4 lb/gal SC/L or the 80% SC/S formulations; however, the registrant must specify the method of application.
- 33/ The available data do not support the established tolerances for trichlorfon residues in or rangeland grass forage and hay following use of the registered formulations at their maximum use rates. The following additional data are required:
- o Residue data are required for two aerial ULV applications of the 1.5 lb/gal RTU formulation at 0/1 lb ai/A. Replicate forage and hay samples should be collected on the day of the final treatment.
 - o Data are required reflecting single aerial and ground applications of either the 50 or 80% SC/S. Replicate forage and hay samples must be analyzed.
 - o The available residue data for ULV applications of the 4 lb/gal SC/L formulation are inconsistent and additional data are needed. This must include replicate forage and hay samples following two aerial or ground treatments, the first at 1 lb/ai/A and the second at 0.5 lb ai/A.

Generic Data Requirements for Trichlorfon

§158.125 Residue Chemistry (continued)

- 34/ The available data do not support the established tolerance for alfalfa and alfalfa hay following use of the registered formulations at their maximum registered rates; all registered formulation classes were not tested. Residues were below the tolerances for the 50 and 80% SC/S and the 4 lb/gal SC/L (including ULV treatments). The following additional data are required:
- o Single broadcast soil applications with the 5% P/T or one of the G formulations at 1 lb ai/A using ground equipment. Sampling of both green and dried (hay) alfalfa should reflect the maximum current use pattern.
- 35/ Data submitted in support of the tolerance for alfalfa hay were translated to, and support the established tolerance for, trichlorfon residues in or on birdsfoot trefoil hay for the following reasons:
- o The growth characteristics and use patterns for birdsfoot trefoil are very similar to those of alfalfa.
 - o Translated data submitted in support of the established tolerance for alfalfa hay were adequate for the SC/S and SC/L formulations.
 - o Residue levels of trichlorfon in or on birdsfoot trefoil hay are not anticipated to exceed the maximum levels found in or on alfalfa hay.
- 36/ The alfalfa data do not support the established tolerances for clover and clover hay because all the registered formulation classes were not tested. Residues resulting from the use of the 50% SC/S and the 4 lb/gal SC/L formulations were found not to exceed the established tolerances. The following additional residue data are required:
- o Residue studies reflecting single broadcast soil applications with the 5% P/T formulation at 1 lb ai/A using aerial equipment. Sampling of both green and dried (hay) clover should reflect the maximum current use pattern.
- 37/ Insufficient data exist to support the established tolerance for trichlorfon residues in or on artichokes. The available data were obtained using an invalid analytical procedure (acetylcholinesterase inhibition) and additional residue data must be generated using a valid procedure:
- o Ground applications of a dust (D) and, to support Section 24(c) uses, a granular (G) formulation at 2.5 lb ai/A.

Generic Data Requirements for Trichlorfon

§158.125 Residue Chemistry
(continued)

38/ The available data do not support the established 0.1 ppm tolerance for trichlorfon residues in or on cottonseed; all of the residue data submitted were generated using an invalid cholinesterase inhibition technique. The following data are required:

- o Foliar ULV treatments with the 4 lb/gal SC/L at 0.5 lb ai/A, foliar treatments with one of the SC/S or SC/L formulations at 1.5 lb ai/A, and soil treatments with one of the G formulations (bait) at 1.5 lb ai/A. All formulations must be applied twice using aerial (SC/L or SC/S) or ground (G) equipment; residues should be determined on both forage (since grazing is permitted) and seed at intervals which reflect the maximum current use pattern
- o If residues are detected in the cottonseed, a fractionation study to determine residues in the following processed products is required: meal, hulls, soapstock, crude oil, and refined oil.

39/ The available data do not support the established tolerance for flaxseed. Residues resulting from the maximum registered application rate were below the tolerance for flaxseed; however, only the 50% SC/S was tested, the method of application was unspecified and only single applications were made (three/season are permitted). The available data do not support the established 1 ppm tolerance for flax straw because straw was not analyzed. The following additional data are required:

- o Residue data for flax straw following multiple (no less than three) applications of the 50 or 80% SC/S formulation at 1 lb ai/A using ground and aerial equipment.
- o Field trials in MN, TX, and Manitoba, Canada, with one of the G formulations at 1 lb ai/A. Soil and foliar applications must be made at three or more weekly intervals with ground and aerial equipment.

Sampling of flaxseed should reflect the maximum current use pattern. Straw should be sampled after drying (for SC/L only).

- o If residues are found in flax grain, then the fractionation study requested for cottonseed will be sufficient to determine residues in meal (linseed) and hulls.

40/ The available data do not support the established tolerance for safflower seed. Data were submitted only for the 50% SC/S formulation applied at 2 lb ai/A; the method of application was not specified. Also, of the four residue values submitted, one exceeded the tolerance by 0.5 ppm. The processing study which was submitted for meal and

Generic Data Requirements for Trichlorfon

§158.125 Residue Chemistry (continued)

crude and refined oil was unsuitable; safflower seed did not contain field-treated detectable residues. The following additional data are required:

- o Two applications (at 14 days prior to bloom and at bloom) of one of the SC/S formulations (foliar applications) at 1.5 lb ai/A using aerial and ground equipment, and one of the G (bait) formulations at 1.5 lb ai/A using ground equipment. Field test locations should include irrigated regions; alternatively, a label restriction against usage on irrigated crops may be proposed.
- o If residues are found in safflower seed, the processing study requested for cottonseed will be adequate to determine residues in meal and oil; if residues in excess of those established for the r.a.c. are found in meal or oil, food/feed additive tolerances must be proposed.

41/ The following data are required to assess the exposure of man to residues of trichlorfon in or on tobacco:

- o Residue analyses on green tobacco harvested 3 days after the second of two foliar applications of the 4% G at 0.6 lb ai/A and one of the SC/S formulations at 1 lb ai/A.
- o Residue analyses on green tobacco 3 days after the last of two soil applications of one of the G (bait) formulations at 1 lb ai/A; the second application should be made when plants are approximately 2 ft. tall.
- o If residues in green tobacco are >0.1 ppm, pyrolysis products of trichlorfon must be characterized.

42/ The available data do not support the established tolerance for trichlorfon in cattle meat, fat, and meat by-products. Although the feeding studies and pour-on application data are adequate; the following additional data are required:

- o A single high pressure spray application of the 80% SC/S formulation (8 lb ai/100 gal) and residue analyses on meat, fat, and meat by-products after a posttreatment interval of 14 days.

43/ The available data do not support the established tolerance for trichlorfon in milk. The feeding studies are adequate; however, the following additional data are required to reflect the dermal use.

Generic Data Requirements for Trichlorfon

§158.125 Residue Chemistry
(continued)

- o A single pour-on application of the 8% RTU formulation (0.5 fl. oz/100 lb body weight but no more than 4 fl. oz/animal) and residue analyses on milk samples taken twice daily for 7 days following application or until residues are <0.01 ppm.
- 44/ The available data indicate that there is no reasonable expectation of finite residues in eggs; therefore, no tolerance for trichlorfon residues in or on eggs will be required [40 CFR 180.6a(3)]. However, no data were submitted pertaining to residues of trichlorfon in or on poultry meat (muscle, liver, kidney, and fat) resulting from ingestion of trichlorfon residues at the maximum expected dietary intake level; therefore, the following additional data are required:
- o Poultry feeding studies at 5, 15, and 50 ppm for 28 consecutive days and subsequent residue analyses on poultry meat (muscle, liver, kidney, and fat) from animals slaughtered within 24 hours of the final feeding. If the requested metabolism data reveal no additional residues of concern and if the requested ruminant residue studies indicate that residues are nondetectable, then the above poultry feeding studies will be waived.
- 45/ No valid data are available to support the tolerance for sugar beet tops; all residue data submitted were generated with an invalid cholinesterase inhibition technique. The following data are required:
- o Foliar treatments with one of the SC/L or SC/S formulations at 1.5 lb/A and subsequent residue analysis on tops which reflect the maximum current use pattern.

TABLE A
GENERIC DATA REQUIREMENTS FOR TRICHLORFON

Data Requirement	Composition ^{1/}	Use ^{2/} Pattern	Does EPA Have Data To Satisfy This Requirement? (Yes, Bibliographic No or Partially)	Citation	Must Additional Data be Submitted Under FIFRA Section 3(c)(2)(B)?
<u>\$158.130 Environmental Fate</u>					
<u>DEGRADATION STUDIES-LAB:</u>					
161-1 - Hydrolysis	TGAI or PAIRA	A,B,D,E,F,G,H	No	-	Yes ^{3a/}
<u>Photodegradation</u>					
161-2 - In water	TGAI or PAIRA	A,B,D,G	No	-	Yes ^{3a/}
161-3 - On soil	TGAI or PAIRA	A,G	No	-	Yes ^{3a/}
161-4 - In Air	TGAI or PAIRA	A,E,F	No	-	Yes ^{3a/} , ^{4/}
<u>METABOLISM STUDIES-LAB:</u>					
162-1 - Aerobic Soil	TGAI or PAIRA	A,B,E,F,G,H	Yes	GS0104080	No
162-2 - Anaerobic Soil	TGAI or PAIRA	A	No ^{5/}	-	Yes ^{3a/}
162-3 - Anaerobic Aquatic	TGAI or PAIRA	D,G	No	-	Yes ^{3/}
162-4 - Aerobic Aquatic	TGAI or PAIRA	D,G	No	-	Yes ^{3/}
<u>MOBILITY STUDIES:</u>					
163-1 - Leaching and Ad- sorption/Desorption	TGAI or PAIRA	A,B,D,E,F,G,H	Partial ^{6/}	00068214	Yes ^{3a/}
163-2 - Volatility (Lab)	TEP	A	No	-	Yes ^{3/}
163-3 - Volatility (Field)	TEP	A	No	-	Reserved ^{7/}

TABLE A
GENERIC DATA REQUIREMENTS FOR TRICHLORFON

Data Requirement	Composition ^{1/}	Use ^{2/} Pattern	Does EPA Have Data To Satisfy This Requirement? (Yes, No or Partially)	Bibliographic Citation	Must Additional Data be Submitted Under FIFRA Section 3(c)(2)(B)?
<u>\$158.130 Environmental Fate</u> (continued)					
<u>DISSIPATION STUDIES-FIELD:</u>					
164-1 - Soil	TEP	A,B,H	No	-	Yes ^{3a/} , ^{8/}
164-2 - Aquatic (Sediment)	TEP	D	Partial	00091852	Yes ^{3/} , ^{9/}
164-3 - Forestry	TEP	G	Partial ^{10/}	00092002	Yes ^{3a/}
164-4 - Combination and Tank Mixes	TEP		Not Applicable		
164-5 - Soil, Long-term	TEP	A	No	-	No ^{11/}
<u>ACCUMULATION STUDIES:</u>					
165-1 - Rotational Crops (Confined)	PAIRA	A	No	-	Yes ^{3/}
165-2 - Rotational Crops (Field)	TEP	A	No	-	Reserved ^{12/}
165-3 - Irrigated Crops	TEP		Not Applicable		
165-4 - In Fish	TGAI or PAIRA	A,B,D,G	No	-	Yes ^{3/} , ^{13/}
164-5 - In Aquatic Non- Target Organisms	TEP	A,B,D,G	Yes	00092002	Yes ^{3/}

TABLE A
Generic Data Requirements For Trichlorfon

158.130 Environmental Fate
(continued)

- 1/ Composition: TGAI = Technical grade of the active ingredient; PAIRA = Pure active ingredient, radiolabeled; TEP = Typical end-use product.
- 2/ The use patterns are coded as follows:
A = Terrestrial, Food Crop; R = Terrestrial, Non-Food;
C = Aquatic, Food Crop; D = Aquatic, Non-Food; E = Greenhouse, Food crop; F = Greenhouse, Non-Food; G = Forestry;
H = Domestic Outdoor; I = Indoor.
- 3/ Data must be submitted no later than June, 1987.
- 3a/ The Agency is concerned about the potential contamination of ground water by trichlorfon and its metabolites. Data required for the evaluation of the potential for contamination are being required on an accelerated basis. These data will be required to be submitted as follows:
 - ° Hydrolysis (161-1), Photodegradation (161-2,-3,-4), and Mobility (163-1) must be submitted no later than December, 1984.
 - ° Soil Metabolism (162-1,-2), Field Dissipation (164-1,-3) must be submitted no later than June, 1986.
- 4/ Not required unless used in greenhouses.
- 5/ The anaerobic aquatic metabolism data may be substituted for the anaerobic soil metabolism data, but the reverse is not permissible.
- 6/ Study (00068214) partially fulfills mobility data requirements for terrestrial, food crop; terrestrial, non-food; and forestry use patterns, by providing information on the rapid leaching of trichlorfon in five soil types by soil thin layer chromatography. To satisfy mobility data requirements for terrestrial, food crop; terrestrial, non-food; and forestry use patterns, an additional study in which the mobility of trichlorfon aged in a sandy loam soil is assessed by using either soil TLC or soil column techniques is required. Additional, adsorption/desorption (batch equilibrium) studies are required on four soils,

preferably a sand (agricultural), sandy loam, silt loam, clay or clay loam for domestic outdoor and greenhouse uses and on one aquatic sediment obtained from, or representative of, the aquatic use area for aquatic non-food crop use pattern.

- 7/ Data requirement depends on the results of the laboratory studies.
- 8/ Terrestrial field dissipation studies are required for:
(1) terrestrial, food crop uses; representative use pattern sites should include field vegetable crops, orchard crop (citrus) and pasture grasses, (2) terrestrial, non-food uses; representative use pattern sites should include tobacco and turf (golf courses) and, (3) domestic outdoor uses; representative use pattern sites should include lawns.
- 9/ Study (00091852) partially fulfills field dissipation-aquatic (sediment) data requirements by providing information showing that the SC/S formulation of trichlorfon did not persist in fish rearing pond water or in mud under alkaline conditions. Two additional aquatic field dissipation studies are required for two different fish rearing ponds under acidic conditions (pH 5-6) which are representative of the fish rearing ponds for which there is a registered parasiticide use.
- 10/ Study (00092002) was reviewed and is considered scientifically valid. However, this study was conducted with the SC/S formulation of trichlorfon, which is not currently registered for forestry use. Therefore forestry dissipation studies are required for the end-use product with the largest amount of trichlorfon for which there is a registered use.
- 11/ No data were submitted; however, the data requirements are waived based on the aerobic soil metabolism study which demonstrated that <50% of the trichlorfon initially applied would be present in soil when a subsequent application would occur.
- 12/ Reserved pending results of 165-1.
- 13/ This data requirement depends on the results of 63-11 and 161-1. No data on the accumulation of trichlorfon in fish will be required if trichlorfon has a half-life of less than 4 days in water or an octanol water partition coefficient of less than 1000.

TABLE A
GENERIC DATA REQUIREMENTS FOR TRICHLORFON

Data Requirement	Composition ^{1/}	Use Pattern ^{2/}	Does EPA Have Data To Satisfy This Requirement? (Yes, No or Partially)	Bibliographic Citation	Must Additional Data Be Submitted Under FIFRA Section 3(c)(2)(B)? ^{3/}
<u>158.135 Toxicology</u>					
<u>ACUTE TESTING:</u>					
81-1 - Acute Oral Toxicity - Rat	TGAI	A,B,D,E,F,G,H	Yes	00081186 00005494 GS0104069 GS0104070 GS0104071	No
81-2 - Acute Dermal Toxicity Rabbit	TGAI	A,B,D,E,F,G,H	Yes	GS0104072 GS0104069 GS0104070	No
81-3 - Acute Inhalation Toxicity - Rat	TGAI	A,B,D,E,F,H	No	-	Yes
81-7 - Delayed Neurotoxicity - Hen	TGAI	A,B,D,E,F,G,H	Yes	GS0104073	No
<u>SUBCHRONIC TESTING:</u>					
82-1 - 90-Day Feeding - Rodent, Non-rodent	TGAI	A,E	No	-	Yes
82-2 - 21-Day Dermal Rabbit	TGAI	A,B,D,E,F,G,H	No	-	Yes
82-3 - 90-Day Dermal Rabbit	TGAI	A,B,D,E,F,G,H	No	-	Yes
82-4 - 90-Day Inhalation - Rat	TGAI	A,B,D,E,F,G,H	No	-	Yes
82-5 - 90-Day Neurotoxicity - Hen/Mammal	TGAI	A,B,D,E,F,G,H	No	-	Yes

TABLE A
GENERIC DATA REQUIREMENTS FOR TRICHLORFON

Data Requirement	Composition ^{1/}	Use ^{2/} Pattern	Does EPA Have Data To Satisfy This Requirement? (Yes, No or Partially)	Bibliographic Citation	Must Additional Data Be Submitted Under FIFRA Section 3(c)(2)(B)? ^{3/}
<u>\$158.135 Toxicology</u> (continued)					
<u>CHRONIC TESTING:</u>					
83-1 - Chronic Toxicity -	TGAI	A,B,D,E,F,G,H	No	-	Yes ^{4/}
83-2 - Oncogenicity - 2 species: Rat and mouse preferred	TGAI	A,B,D,E,F,G,H	No	-	Yes
83-3 - Teratogenicity - 2 species	TGAI	A,B,D,E,F,G,H	Partial	00063192 ^{5/} GS0104074 GS0104075	Yes ^{6/}
83-4 - Reproduction - Rat 2-generation	TGAI	A,B,D,E,F,G,H	Yes	GS0104076	No
<u>MUTAGENICITY TESTING:</u>					
84-2 - Gene Mutation	TGAI	A,B,D,E,F,G,H	Yes	00028625 GS010477	No
84-2 - Chromosomal Aberration	TGAI	A,B,D,E,F,G,H	No	-	Yes
84-2 - Other Mechanisms of Mutagenicity	TGAI	A,B,D,E,F,G,H	Yes	00028625 GS0104077 GS0104078 GS0104079	No

TABLE A
GENERIC DATA REQUIREMENTS FOR TRICHLORFON

Data Requirement	Composition ^{1/}	Use ^{2/} Pattern	Does EPA Have Data To Satisfy This Requirement? (Yes, No or Partially)	Bibliographic Citation	Must Additional Data Be Submitted Under FIFRA Section 3(c)(2)(B)? ^{3/}
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SPECIAL TESTING:

85-1 - General Metabolism	PAI or PAIRA	A,B,D,E,F,G,H	No	-	Yes
85-2 - Domestic Animal Safety	Choice	A,B,D,G,H	No	-	Yes

- ^{1/} Composition: TGAI = Technical grade of active ingredient; PAI = Pure active ingredient; PAIRA = Pure active ingredient, radiolabeled; Choice = Choice of several test substances determined on a case-by-case basis.
- ^{2/} The use patterns are coded as follows: A = Terrestrial, Food Crop; B = Terrestrial, Non-Food; C = Aquatic, Food Crop; D = Aquatic, Non-Food; E = Greenhouse, Food Crop; F = Greenhouse, Non-Food; G = Forestry; H = Domestic Outdoor; I = Indoor.
- ^{3/} Data must be submitted no later than June, 1987.
- ^{4/} Two species are required: one rodent, rat preferred; and one non-rodent which must be the dog.
- ^{5/} The gavage portion of this study is valid but the feeding portion is considered inadequate.
- ^{6/} Data from an adequate dietary study in the rat must be submitted.

TABLE A
GENERIC DATA REQUIREMENTS FOR TRICHLORFON

Data Requirement	Composition ^{1/}	Use ^{2/} Pattern	Does EPA Have Data To Satisfy This Requirement? (Yes, No or Partially)	Bibliographic Citation	Must Additional Data Be Submitted Under FIFRA Section 3(c)(2)(B)? ^{3/}
<u>§158.140 Reentry Protection</u>					
132-1 - Foliar Dissipation	TEP	A,B,D,G	No	-	No
132-1 - Soil Dissipation	TEP	A,B,D,G	No	-	No
133-3 - Dermal Exposure	TEP	A,B,D,G	No	-	No
133-4 - Inhalation Exposure	TEP	A,B,D,G	No	-	No

^{1/} Composition: TEP = Typical end-use product

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

^{3/} No data were submitted; however, data are not being required at this time because the toxicity of trichlorfon does not exceed subpart K requirements for reentry. These data may be required after other data required under this standard have been reviewed and evaluated.

TABLE A
GENERIC DATA REQUIREMENTS FOR TRICHLORFON

Data Requirement	Composition ^{1/}	Use Pattern ^{2/}	Does EPA Have Data To Satisfy This Requirement? (Yes, No or Partially)	Bibliographic Citation	Must Additional Data be Submitted Under FIFRA Section 3(c)(2)(B)? ^{3/}
<u>\$158.145 Wildlife and Aquatic Organisms</u>					
<u>AVIAN AND MAMMALIAN TESTING</u>					
71-1 - Acute Avian Oral Toxicity	TGAI	A,B,G	Yes	00073683	No
71-2 - Avian Subacute Dietary Toxicity	TGAI	A,B,G,I	Yes	00034769	No
71-3 - Wild Mammal Toxicity	TGAI	A,B,G	Not Required		
71-4 - Avian Reproduction	TGAI	A,B,G	Not Required		
71-5 - Simulated and Actual Field Testing - Mammals and Birds	TEP	A,B,G	Not Required		
<u>AQUATIC ORGANISM TESTING</u>					
72-1 - Freshwater Fish Acute Toxicity	TGAI	A,B,D,G,I	Yes	00091881 00091766 GS0104081 00065495	No
-do-	TEP	D,G	Yes	00091766 GS0104081	No

TABLE A
GENERIC DATA REQUIREMENTS FOR TRICHLORFON

Data Requirement	^{1/} Composition	Use ^{2/} Pattern	Does EPA Have Data To Satisfy This Requirement? (Yes, No or Partially)	Bibliographic Citation	Must Additional Data be Submitted Under FIFRA Section 3(c)(2)(B)? ^{3/}
<u>§158.145 Wildlife and Aquatic Organisms</u> (continued)					
72-2 - Acute Toxicity to Freshwater Invertebrates	TGAI	A,B,D,C,I	Yes	GS0104081	No
-do-	TEP	D,G	Yes	GS0104081	No
72-3 - Acute Toxicity Estuarine and Marine Organisms	TGAI	A,B,D,G	Not Required		
72-4 - Fish Early Life Stage and Aquatic Invertebrate Life-Cycle	TGAI	A,B,D,G	No	-	Yes ^{4/}
72-5 - Fish - Life-Cycle	TGAI	A,B,D,G	No		Reserved ^{5/}
72-6 - Aquatic Organism Accumulation	TGAI, PAR or Degradation Product	A,B,D,E	No		Reserved ^{5/}
72-7 - Simulated or Actual Field Testing - Aquatic Organisms	TEP	A,B,D,G	No		Reserved ^{6/}

Table A
Generic Data Requirements for Trichlorfon

158.145 Wildlife and Aquatic Organisms
(continued)

- 1/ Composition: TGAI = Technical grade of the active ingredient; PAI = pure active ingredient; TEP = Typical end-use product;
- 2/ The use patterns are coded as follows: A = Terrestrial, Food Crop; B = Terrestrial, Non-Food Crop; C = Aquatic Food Crop; D = Aquatic, Non-Food Crop; E = Greenhouse, Food Crop; F = Greenhouse, Non-Food; G = Forestry; H = Domestic Outdoor; I = Indoor.
- 3/ Data must be submitted no later than June, 1987 .
- 4/ Data requirement is limited to the aquatic invertebrate life cycle test; use patterns - A,B,D,E.
- 5/ Reserved pending submission of appropriate environmental fate studies (e.g., dissipation and hydrolysis studies) which are needed to determine if hazardous concentrations of trichlorfon will reach or accumulate in the aquatic environment when products are used as directed.
- 6/ Reserved pending results of 72-4.

TABLE A
GENERIC DATA REQUIREMENTS FOR TRICHLORFON

Data Requirement	Composition ^{1/}	Use ^{2/} Pattern	Does EPA Have Data To Satisfy This Requirement? (Yes, No or Partially)	Bibliographic Citation	Must Additional Data be Submitted Under FIFRA Section 3(c)(2)(B)? ^{3/}
<u>\$158.150 Plant Protection</u>					
121-1 - <u>TARGET AREA</u> <u>PHYTOTOXICITY</u>	EP		No	-	No ^{4/}
<u>NONTARGET AEA PHYTOTOXICITY</u>					
<u>TIER I</u>					
122-1 - Seed Germination/ Seedling Emergence	TGAI		No	-	No ^{4/}
122-1 - Vegetative Vigor	TGAI		No	-	No ^{4/}
122-2 - Aquatic Plant Growth	TGAI		No	-	No ^{4/}
<u>TIER II</u>					
123-1 - Seed Germination/ Seedling Emergence	TGAI		No	-	No ^{4/}
123-1 - Vegetative Vigor	TGAI		No	-	No ^{4/}
123-2 - Aquatic Plant Growth	TGAI		No	-	No ^{4/}
<u>TIER III</u>					
124-1 - Terrestrial Field	TEP		No	-	No ^{4/}
124-2 - Aquatic Field	TEP		No	-	No ^{4/}

- ^{1/} Composition: TGAI = Technical grade of the active ingredient; TEP = Typical end-use product.
EP = End-use product.
- ^{2/} The use patterns are coded as follows: A = Terrestrial, Food Crop; B = Terrestrial, Non-Food Crop;
C = Aquatic, Food Crop; D = Aquatic, Non-Food; E = Greenhouse, Food Crop; F = Greenhouse, Non-Food;
G = Forestry; H = Domestic Outdoor; I = Indoor.
- ^{3/} Reserved.
- ^{4/} These requirements are generally not required unless it is believed there is a phototoxicity problem.

TABLE A

GENERIC DATA REQUIREMENTS FOR TRICHLORFON

Data Requirement	Composition ^{1/}	Use ^{2/} Pattern	Does EPA Have Data To Satisfy This Requirement? (Yes, Bibliographic No or Partially)	Citation	Must Additional Data be Submitted Under FIFRA Section 3(c)(2)(B)? ^{3/}
<u>\$158.155 Nontarget Insect</u>					
<u>NONTARGET INSECT TESTING - POLLINATORS:</u>					
141-1 - Honey bee acute contact LD50	TGAI	A,B,G,H	Yes	00036935	No
141-2 - Honey bee - toxicity of residues on foliage	TEP	A,B,G,H	Yes	00060628, 05000837	No
141-3 - Wild bees important in alfalfa pollination - toxicity of residues on foliage	TEP	A,B,G,H	Not Required		
141-4 - Honey bee subacute feeding study	[Reserved] ^{4/}				
141-5 - Field testing for pollinators	TEP	A,B,G,H	Yes	05004412	No

TABLE A

GENERIC DATA REQUIREMENTS FOR TRICHLORFON

Data Requirement	Composition ^{1/}	Use ^{2/} Pattern	Does EPA Have Data To Satisfy This Requirement? (Yes, Bibliographic No or Partially) Citation	Must Additional Data be Submitted Under FIFRA Section 3(c)(2)(B)? ^{3/}
<u>§158.155 Nontarget Insect</u> (continued)				
<u>NONTARGET INSECT TESTING -</u> <u>AQUATIC INSECTS</u>				
142-1 - Acute toxicity to aquatic insects	[Reserved]	<u>5/</u>		
142-2 - Acute insect life-cycle study	[Reserved]	<u>5/</u>		
142-3 - Simulated or actual field testing for aquatic insects	[Reserved]	<u>5/</u>		
143-1 - <u>NONTARGET INSECT TESTING -</u> thru <u>PREDATORS AND PARASITES</u>				
143-3	[Reserved]	<u>5/</u>		

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

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

3/ Reserved.

4/ Reserved pending development of test methodology.

5/ Reserved pending Agency decision as to whether the data requirements should be established.

III. REQUIREMENT FOR SUBMISSION OF PRODUCT-SPECIFIC DATA

Note: This Section applies only to manufacturing-use products, not end-use products.

A necessary first step in determining which statements must appear on your product's label is the completion and submission to EPA of product-specific data* listed on the form entitled "Product Specific Data Report" (EPA Form 8580-4, Appendix III-1) to fill "gaps" identified by EPA concerning your product. Under the authority of FIFRA Section 3(c)(2)(B), EPA has determined that you must submit these data to EPA in order to register or reregister your product(s). All of these data must be submitted not later than six months after you receive this guidance document.

"Product-Specific Data Requirements for Manufacturing-Use Products" appearing in Table B permit you to determine which product-specific data you must submit. This can be done by examining the entries in the column of those tables entitled "Must Data Be Submitted Under §3(c)(2)(B)."

* / Product specific data pertains to data that support the formulation which is marketed; it usually includes product chemistry data and acute toxicology data.

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

\$158.120 - PRODUCT CHEMISTRY

Guideline Citation and Name of Test	Test Substance <u>1/</u>	Guidelines Status	Are Data Required <u>2/</u>		Footnote Number
YesNo					
PRODUCT IDENTITY:					
61-1 - Identity of Ingredients	MP	R	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
61-2 - Statement of Composition	MP	R	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
61-3 - Discussion of Formation of Ingredients	MP	R	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
<u>Analysis and Certification of Product Ingredients</u>					
62-1 - Preliminary Analysis	MP	R	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
62-2 - Certification of Limits	MP	R	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
62-3 - Analytical Methods for Enforcement of Limits	MP	R	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
<u>Physical and Chemical Characteristics</u>					
63-2 - Color	MP	R	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
63-3 - Physical State	MP	R	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
63-4 - Odor	MP	R	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

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

\$158.120 - PRODUCT CHEMISTRY (Con't)

Guideline Citation and Name of Test	Test Substance <u>1/</u>	Guidelines Status	Are Data Required <u>2/</u>		Footnote Number
YesNo					
<u>Physical and Chemical Characteristics</u> (Continued)					
63-7 - Density, Bulk Density, or Specific Gravity	MP	R	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
63-12 - pH	MP	R	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
63-14 - Oxidizing or Reducing Action	MP	CR	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
63-15 - Flammability	MP	CR	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
63-16 - Explodability	MP	R	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
63-17 - Storage Stability	MP	R	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
63-18 - Viscosity	MP	CR	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
63-19 - Miscibility	MP	CR	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
63-20 - Corrosion Characteristics	MP	R	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
<u>Other Requirements:</u>					
64-1 - Submittal of samples	PAI	CR	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

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1/ Composition: MP = Manufacturing-Use Product; PAI = Pure Active Ingredient'

2/ Data must be submitted no later than December, 1984.

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

Data Requirement	Composition ^{1/}	Does EPA Have Data To Satisfy This Requirement? (Yes, No or Partially)	Bibliographic Citation	Must Additional Data Be Submitted Under FIFRA Section 3(c)(2)(B)? ^{2/}
<u>158.135 Toxicology</u>				
<u>ACUTE TESTING:</u>				
81-1 - Oral LD ₅₀ - Rat	MP	Yes	00081186 00005494 GS0104069 GS0104070 GS0104071	No
81-2 - Dermal LD ₅₀ - Rabbit	MP	Yes	GS0104072 GS0104069 GS0104070	No
81-3 - Inhalation LC ₅₀ - Rat	MP	No	-	Yes
81-4 - Primary Eye Irritation - Rabbit	MP	No	-	Yes
81-5 - Primary Dermal Irritation - Rabbit	MP	No	-	Yes
81-6 - Dermal Sensitization - Guinea Pig	MP	No	-	Yes

^{1/} Composition: MP = Manufacturing product

^{2/} Data must be submitted no later than December, 1984.

IV. SUBMISSION OF REVISED LABELING AND PACKAGING INFORMATION

Note: This section applies to end-use products only to the extent described under Section II of this document. Otherwise, the following information pertains exclusively to manufacturing-use products.

The Agency requires applicants for registration or reregistration to ensure that each label (1) contains accurate, complete, and sufficient instructions and precautions, reflecting the results of data concerning the product and its ingredients, and (2) incorporates labeling format and terminology which are sufficiently standardized to avoid user confusion.

As part of your application, you will be required to submit draft labeling consistent with: applicable product-specific data; the precautionary statements and use directions; and the regulations concerning classification [40 CFR §162.11(c)], packaging [40 CFR §162.16], and labeling [40 CFR §162.10, Appendix IV-1 and IV-2], as indicated by the following paragraphs of this chapter of the guidance document.

If owners of currently registered products fail to submit revised labeling and packaging information complying with this Section and/or Section II, EPA may issue a notice of intent to cancel the registration under FIFRA §6(b)(1).

A. Label Contents

40 CFR §162.10 (Appendix IV-1) requires that certain specific labeling statements must appear at certain locations on the label. This is referred to as format labeling. Specific label items listed below are keyed to Tables D, E, and F (Appendix IV-2).

Item 1. PRODUCT NAME - The name, brand, or trademark is required to be located on the front panel, preferably centered in the upper part of the panel. The name of a product will not be accepted if it is false or misleading. See Appendix IV-1. [40 CFR §162.10(b)]

Item 2. COMPANY NAME AND ADDRESS - The name and address of the registrant or distributor is required on the label. The name and address should preferably be located at the bottom of the front panel or at the end of the label text. See Appendix IV-1. [40 CFR §162.10(c)]

Item 3. NET CONTENTS - A net content statement is required on all labels. The preferred location is the bottom of the front panel immediately above the company name and address, or at the end of the label text. The net contents must be stated in terms of weight, expressed as avoirdupois pounds

and ounces, and stated in terms of the largest suitable unit, i.e., "1 pound 10 ounces" rather than "26 ounces." In addition to the required units specified, net contents may be expressed in metric units. See Appendix IV-1. [40 CFR §162.10(d)]

Item 4. EPA REGISTRATION NUMBER - The registration number assigned to the pesticide product must appear on the label, preceded by the phrase "EPA Registration No.," or "EPA Reg. No." The registration number must be set in type of a size and style similar to other print on that part of the label on which it appears and must run parallel to it. The registration number and the required identifying phrase must not appear in such a manner as to suggest or imply recommendation or endorsement of the product by the Agency. See Appendix IV-1. [40 CFR §162.10(e)]

Item 5. EPA ESTABLISHMENT NUMBER - The EPA establishment number, preceded by the phrase "EPA Est." is the final establishment at which the product was produced, and may appear in any suitable location on the label or immediate container. It must also appear on the wrapper or outside container of the package if the EPA establishment registration number on the immediate container cannot be clearly read through such wrapper or container. See Appendix IV-1. [40 CFR §162.10(f)]

Item 6. INGREDIENT STATEMENT - An ingredient statement is required on the front panel and must contain the name and percentage by weight of each active ingredient and the total percentage by weight of all inert ingredients. The preferred location is immediately below the product name. The ingredient statement must run parallel with, and be clearly distinguished from, other text on the panel. It must not be placed in the body of other text. See Appendix IV-1. [40 CFR 162.10(g)]

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

Item 7. FRONT LABEL PRECAUTIONARY STATEMENTS - All labels are required to have precautionary statements grouped together on the front panel, preferably within a block outline. The table below shows the minimum type size requirements on various size labels, as set forth in the Regulations.

<u>Size of Label on Front Panel in Square Inches</u>	<u>Signal Word as Re- quired Minimum Type Size All Capitals</u>	<u>"Keep Out of Reach of Children" as Required</u>
5 and under	6 point	6 point
above 5 to 10	10 point	6 point
above 10 to 15	12 point	8 point
above 15 to 30	14 point	10 point
over 30	18 point	12 point

Item 7A. CHILD HAZARD WARNING STATEMENT - All labels are required to have the statement "Keep Out of Reach of Children" located on the front panel above the signal word except where contact with children during distribution or use is unlikely. See Appendix IV-1. [40 CFR §162.10(h)(1)(ii)]

Item 7B. SIGNAL WORD - The signal word (Caution, Warning, or Danger) is required on the front panel immediately below the child hazard warning statement. See Appendix IV-1. [40 CFR §162.10 (h)(1)(i)]

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

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

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

Item 8. SIDE/BACK PANEL PRECAUTIONARY LABELING - The precautionary statements as listed below must appear together on the label under the heading "PRECAUTIONARY STATEMENTS." The preferred location is at the top of the side or back panel preceding the directions for use, and it is preferred that these statements be surrounded by a block outline. Each of the three hazard warning statements must be headed by the appropriate hazard title. See Appendix IV-1. [40 CFR §162.10(h)(2)]

Item 8A. HAZARD TO HUMANS AND DOMESTIC ANIMALS - Where a hazard exists to humans or domestic animals, precautionary statements are required indicating the particular hazard, the route(s) of exposure and the precautions taken to avoid accident, injury or damage. See Appendix IV-1. [40 CFR §162.10 (h)(2)(i)]

Item 8B. ENVIRONMENTAL HAZARD - Where a hazard exists to non-target organisms excluding humans and domestic animals, precautionary statements are required stating the nature of the hazard and the appropriate precautions to avoid potential accident, injury, or damage. See Appendix IV-1. [40 CFR §162.10(h)(2)(ii)]

Item 8C. PHYSICAL OR CHEMICAL HAZARD

1. Flammability statement. Precautionary statements relating to flammability of a product are required to appear on the label if it meets the criteria in Appendix IV-3. The requirement is based on the results of the flashpoint determinations and flame extension tests required to be submitted for all products. These statements are to be located in the side/back panel precautionary statements section, preceded by the heading "Physical/Chemical Hazards." Note that no signal word is used in conjunction with the flammability statements.
2. Criteria for declaration of non-flammability. The following criteria will be used to determine if a product is non-flammable:
 - a. A "non-flammable gas" is a gas (or mixture of gases) that will not ignite when a lighted match is placed against the open cylinder valve.
 - b. A "non-flammable liquid" is one having a flashpoint greater than 350°F (177°C) as determined by the method specified in 40 CFR §163.61-8(c)(13)(ii) of Subpart D.
 - c. A "non-flammable aerosol" is one which meets the following criteria:
 - i. The flame extension is zero inches, using the method specified in 40 CFR §163.61-8(c)(13)(ii);
 - ii. There is no flash back; and
 - iii. The flashpoint of the non-volatile liquid component is greater than 350°F (177°C), determined by the method specified in 40 CFR §163.61-8(c)(13)(i).

3. Declaration of non-flammability. Products which meet the criteria for non-flammability specified above may bear the notation "non-flammable" or "nonflammable (gas, liquid, etc.)" on the label.

It may appear as a substatement to the ingredients statement, or on a back or side panel, but shall not be highlighted or emphasized (as with an inordinately large type size) in any way that may detract from precaution.

4. Other physical/chemical hazard statements. When chemistry data submitted in accordance with 40 CFR §163.61-10(c) demonstrate hazards of a physical or chemical nature other than flammability, appropriate statements of hazard will be prescribed. Such statements may address hazards of explosivity, oxidizing or reducing capability, or mixing with other substances to produce toxic fumes.

Item 9. MISUSE STATEMENT - The following statement is required on your label: "It is a violation of Federal law to use this product in a manner inconsistent with its labeling." See Appendix IV-1. [40 CFR §162.10(1)(2)(ii)]

Item 10A. STORAGE AND DISPOSAL BLOCK - All labels are required to bear storage and disposal statements. These statements are developed for specific containers, sizes, and chemical content. Make certain that the statement you use pertains specifically to your product. These instructions must be grouped and appear under the heading "Storage and Disposal" in the directions for use. This heading must be set in the same type sizes as required for the child hazard warning. Refer to Appendix IV-5 for the latest specific storage and disposal product label statements.

Item 10B. DIRECTIONS FOR USE - Directions for use must be stated in terms which can be easily read and understood by the average person likely to use or to supervise the use of the pesticide. When followed, directions must be adequate to protect the public from fraud and from personal injury and to prevent unreasonable adverse effects on the environment. See Appendix IV-1. [40 CFR §162.10]

B. Collateral Information

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

V. INSTRUCTIONS FOR SUBMISSION

All applications prepared in response to this Notice should be addressed as follows:

Product Manager William H. Miller
Phone No. (703) 557-2600
Registration Division (TS-767)
Office of Pesticide Programs
Environmental Protection Agency
Washington, D.C. 20460

For each product for which continued registration is desired:

1. Within 90 days from receipt of this document, you must submit the "FIFRA Section 3(c)(2)(B) Summary Sheet" EPA Form 8580-1. Refer to Appendix II-2 with appropriate attachments.
2. Within 6 months from receipt of this document registrants must submit:
 - a. Confidential Statement of Formula, EPA Form 8570-4.
 - b. Product Specific Data Report, EPA Form 8580-4 (Appendix III-1).
 - c. Two copies of any required product-specific data.
 - d. Two copies of draft labeling, including the label and associated brochures. If current labeling conforms to the requirements of this guidance document and the results of the short-term data, the registrant may submit such labeling. (End-use product labeling needs to comply specifically with the instruction in Section II of this guidance document.) The labeling should be either typewritten text on 8-1/2 x 11 inch paper or a mockup of the labeling suitable for storage in 8-1/2 x 11 inch files. The draft label must indicate the intended colors of the final label, clear indication of the front panel label, and the intended type sizes of the text.
3. Within the time set forth in Table A, all generic data must be submitted by the affected registrant(s).

Note: If for any reason any required test is delayed or aborted so that meeting the agreed submission time will be delayed, notify the Product Manager listed above.

After the Supreme Court has ruled on the Monsanto Decision, you will be informed as to when you must submit your Application for Amended Pesticide Registration (EPA Form 8570-1) and the associated data support information.

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- GS0104061 Chemagro Corp. (1972) Trichlorfon analytical and residue information on citrus fruit, Report no. 11908; (Unpublished study received March 1, 1972 under PP#2F1242) CDL:RCB 117733.
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- GS0104065 Chemagro Corp. (1972) Trichlorfon analytical and residue information on citrus fruit, Report No. 29226; (Unpublished study received March 1, 1972 under PP#2F1242) CDL:RCB 117736.
- GS0104066 Chemagro Corp. (1972) Trichlorfon analytical residue information on citrus fruit, Report no. 29226; (Unpublished study received March 1, 1972 under PP#2F1242) CDL:RCB 117736.
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- GS0104079 SRI (1980c) In Vitro Detection of Mitotic Crossing-Over, Mitotic Gene Conversion, and Reverse Mutation with S. Cerevisiae D7 for Seven Pesticides. EPA Contracts Management Division (MD-33), Attention: NCCM-6, Research Triangle Park, North Carolina 27711. Contract No. 68-02-2947, SRI Project LSU-7558-20.
- GS0104080 Chemagro Corp. (1977) Aerobic soil metabolism study, Report no. 32365; Acc. No. 230752.
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FIFRA SECTION 3(C)(2)(B) SUMMARY SHEET		EPA REGISTRATION NO
PRODUCT NAME		
APPLICANT'S NAME		DATE GUIDANCE DOCUMENT ISSUED
With respect to the requirement to submit "generic" data imposed by the FIFRA section 3(C)(2)(B) notice contained in the referenced Guidance Document, I am responding in the following manner:		
<input type="checkbox"/> 1. I will submit data in a timely manner to satisfy the following requirements. If the test procedures I will use deviate from (or are not specified in) the Registration Guidelines or the Protocols contained in the Reports of Expert Groups to the Chemicals Group, OECD Chemicals Testing Programme, I enclose the protocols that I will use:		
<input type="checkbox"/> 2. I have entered into an agreement with one or more other registrants under FIFRA section 3(C)(2)(B)(iii) to satisfy the following data requirements. The tests, and any required protocols, will be submitted to EPA by:		
NAME OF OTHER REGISTRANT		
<input type="checkbox"/> 3. I enclose a completed "Certification of Attempt to Enter Into an Agreement with Other Registrants for Development of Data" with respect to the following data requirements:		
<input type="checkbox"/> 4. I request that you amend my registration by deleting the following uses (this option is not available to applicants for new products):		
<input type="checkbox"/> 5. I request voluntary cancellation of the registration of this product. (This option is not available to applicants for new products.)		
REGISTRANT'S AUTHORIZED REPRESENTATIVE	SIGNATURE	DATE

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

(To qualify, certify ALL four items)

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

GUIDANCE DOCUMENT DATE

ACTIVE INGREDIENT

NAME OF FIRM

EPA COMPANY NUMBER

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

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

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

NAME OF FIRM

DATE OF OFFER

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

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

TYPED NAME

SIGNATURE

DATE

PRODUCT SPECIFIC DATA REPORT

EPA Registration No. _____ Guidance Document for _____

Date _____

Registration Guideline No.	Name of Test	Test not required for my product listed above (check below)	I am complying with data requirements by		(For EPA Use Only) Accession Numbers Assigned
			Citing MRID#	Submit- ting Data (At- tached)	
\$158.20 PRODUCT CHEMISTRY					
61-1	Identity of ingredients				
61-2	Statement of composition				
61-3	Discussion of formation of ingredients				
62-1	Preliminary analysis				
62-2	Certification of limits				
62-3	Analytical methods for enforcement limits				
63-2	Color				
63-3	Physical state				
63-4	Odor				
63-5	Melting point				
63-6	Boiling point				
63-7	Density, bulk- density, or specific gravity				
63-8	Solubility				
63-9	Vapor pressure				
63-10	Dissociation constant				
63-11	Octanol/water partition coefficient				
63-12	pH				
63-13	Stability				
63-14	Oxidizing/reducing reaction				
63-15	Flammability				
63-16	Explosibility				
63-17	Storage stability				
63-18	Viscosity				
63-19	Miscibility				

PRODUCT SPECIFIC DATA REPORT

EPA Registration No. _____ Guidance Document for _____

Date _____

63-20	Corrosion characteristics				
63-21	Dielectric break-down voltage				
\$158.135 TOXICOLOGY					
81-1	Acute oral LD-50, rat				
81-2	Acute dermal LD-50				
81-3	Acute inhalation, LC-50 rat				
81-4	Primary eye irritation, rabbit				
81-5	Primary dermal irritation				
81-6	Dermal sensitization				

PRECAUTIONARY STATEMENTS

**HAZARDS TO HUMANS
(8 DOMESTIC ANIMALS)
DANGER**

ENVIRONMENTAL HAZARDS

**PHYSICAL OR CHEMICAL
HAZARDS**

DIRECTIONS FOR USE

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

**RE-ENTRY STATEMENT
(If Applicable)**

**STORAGE AND
DISPOSAL**

STORAGE _____

DISPOSAL _____

CROP: _____

**RESTRICTED USE
PESTICIDE**

For retail sale to and use only by Certified Applicators
or persons under their direct supervision and only for
those uses covered by the Certified Applicators Certifi-
cation.

**PRODUCT
NAME**

ACTIVE INGREDIENT: _____ %

INERT INGREDIENTS: _____ %

TOTAL: _____ 100.00 %

THIS PRODUCT CONTAINS LBS OF PER GALLON

KEEP OUT OF REACH OF CHILDREN

7b DANGER — POISON



STATEMENT OF PRACTICAL TREATMENT

IF SWALLOWED _____

IF INHALED _____

IF ON SKIN _____

IF IN EYES _____

SEE SIDE PANEL FOR ADDITIONAL PRECAUTIONARY STATEMENTS

MFG BY _____

TOWN, STATE _____

ESTABLISHMENT NO. _____

EPA REGISTRATION NO. _____

NET CONTENTS _____

CROP: _____

CROP: _____

CROP: _____

CROP: _____

CROP: _____

CROP: _____

WARRANTY STATEMENT

<div data-bbox="273 239 316 281">8A</div> <div data-bbox="273 444 316 486">8B</div> <div data-bbox="273 580 316 623">8C</div> <div data-bbox="273 751 316 794">9B</div> <div data-bbox="273 845 316 888">9C</div> <div data-bbox="273 939 316 982">10A</div> <div data-bbox="273 1093 316 1135">10C</div> <div data-bbox="273 1315 316 1357">10D</div> <div data-bbox="382 196 666 315"> <p>PRECAUTIONARY STATEMENTS HAZARDS TO HUMANS IS DOMESTIC ANIMALS CAUTION</p> </div> <div data-bbox="382 444 666 469"> <p>ENVIRONMENTAL HAZARDS</p> </div> <div data-bbox="382 572 666 623"> <p>PHYSICAL OR CHEMICAL HAZARDS</p> </div> <div data-bbox="382 708 666 734"> <p>DIRECTIONS FOR USE</p> </div> <div data-bbox="382 760 666 785"> <p>GENERAL CLASSIFICATION</p> </div> <div data-bbox="382 828 666 879"> <p>It is a violation of Federal law to use this product in a manner inconsistent with its labeling.</p> </div> <div data-bbox="382 922 666 973"> <p>RE ENTRY STATEMENT (If Applicable)</p> </div> <div data-bbox="382 1076 666 1144"> <p>STORAGE AND DISPOSAL</p> </div> <div data-bbox="382 1161 666 1187"> <p>STORAGE</p> </div> <div data-bbox="382 1221 666 1246"> <p>DISPOSAL</p> </div> <div data-bbox="382 1323 666 1349"> <p>CROP</p> </div>	<div data-bbox="775 187 1474 623"> <p>PRODUCT NAME</p> </div> <div data-bbox="862 657 1343 760"> <p>ACTIVE INGREDIENT _____ % INERT INGREDIENTS _____ % TOTAL _____ 100 (X) %</p> </div> <div data-bbox="775 794 1386 845"> <p>1 THIS PRODUCT CONTAINS LBS OF _____ PER GALLON</p> </div> <div data-bbox="840 879 1386 913"> <p>KEEP OUT OF REACH OF CHILDREN</p> </div> <div data-bbox="928 990 1255 1050"> <p>CAUTION</p> </div> <div data-bbox="928 1118 1321 1152"> <p>STATEMENT OF PRACTICAL TREATMENT</p> </div> <div data-bbox="786 1152 1386 1281"> <p>IF SWALLOWED _____ IF INHALED _____ IF ON SKIN _____ IF IN EYES _____</p> </div> <div data-bbox="786 1306 1408 1340"> <p>SEE SIDE PANEL FOR ADDITIONAL PRECAUTIONARY STATEMENTS</p> </div> <div data-bbox="786 1349 1212 1460"> <p>MFG BY _____ TOWN STATE _____ ESTABLISHMENT NO _____ EPA REGISTRATION NO _____</p> </div> <div data-bbox="960 1468 1386 1503"> <p>NET CONTENTS _____</p> </div>	<div data-bbox="1539 179 1867 375"> <p>CROP</p> </div> <div data-bbox="1539 392 1867 751"> <p>CROP</p> </div> <div data-bbox="1539 768 1867 913"> <p>CROP</p> </div> <div data-bbox="1539 922 1867 1118"> <p>CROP</p> </div> <div data-bbox="1539 1118 1867 1315"> <p>CROP</p> </div> <div data-bbox="1572 1323 1823 1357"> <p>WARRANTY STATEMENT</p> </div>
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LABELING REQUIREMENTS OF THE FIFRA, AS AMENDED (REFER TO THE SAMPLE LABELS FOLLOWING)

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

ITEM	LABEL ELEMENT	APPLICABILITY OF REQUIREMENT	PLACEMENT ON LABEL		COMMENTS
			REQUIRED	PREFERRED	
7C	Skull & cross-bones and word POISON (in red)	All products which are Category I based on oral, dermal, or inhalation toxicity	Front panel	Both in close proximity to signal word	
7D	Statement of practical treatment	All products in Categories I, II, and III	Category I: Front panel unless referral statement is used. Others: Grouped with side panel precautionary statements.	Front panel for all.	
7E	Referral statement	All products where precautionary labeling appears on other than front panel.	Front panel		
8	Side/back panel precautionary statements	All products	None	Top or side of back panel preceding directions for use	Must be grouped under the headings in 8A, 8B, and 8C; preferably blocked.
8A	Hazards to humans and domestic animals	All products in Categories I, II, and III	None	Same as above	Must be preceded by appropriate signal word.
8B	Environmental hazards	All products	None	Same as above	Environmental hazards include bee caution where applicable.

APPENDIX IV-2 (continued)

ITEM	LABEL ELEMENT	APPLICABILITY OF REQUIREMENT	PLACEMENT ON LABEL		COMMENTS
			REQUIRED	PREFERRED	
8C	Physical or chemical hazards	All pressurized products, others with flash points under 150°F	None	Same as above	
9A	Restricted block	All restricted products	Top center of front panel	Preferably blocked	Includes a statement of the terms of restriction. The words "RESTRICTED USE PESTICIDE" must be same type size as signal word.
9C	Misuse statement	All products	Immediately following statement of classification or ahead of directions for use		
10A	Re-entry statement	All cholinesterase inhibitors	In the directions for use	Immediately after misuse statement	
10C	Storage and disposal block	All products	In the directions for use	Immediately before specific directions for use or at the end of directions for use	Must be set apart and clearly distinguishable from other directions for use.
10D U.S.	Directions for use	All products	None	None	May be in metric as well as U.S. units

PHYSICAL-CHEMICAL HAZARDS

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

STORAGE AND DISPOSAL INSTRUCTIONS FOR PESTICIDES

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

Size of label front panel in square inches	Required type size for the heading STORAGE AND DISPOSAL (all capitals)
10 and under6 point
Above 10 to 158 point
Above 15 to 30	10 point
Over 30.	12 point

Storage and disposal instructions must be set apart and clearly distinguishable from other directions for use. Blocking storage and disposal statements with a solid line is suggested as a means of increasing their prominence.

A. Storage Instructions:

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

1. Conditions of storage that might alter the composition or usefulness of the pesticide. Examples could be temperature extremes, excessive moisture or humidity, heat, sunlight, friction, or contaminating substances or media.
2. Physical requirements of storage which might adversely affect the container of the product and its ability to continue to function properly. Requirements might include positioning of the container in storage, storage or damage due to stacking, penetration of moisture, and ability to withstand shock or friction.
3. Specifications for handling the pesticide container, including movement of container within the storage area, proper opening and closing procedures (particularly for opened containers), and measures to minimize exposure while opening or closing container.

4. Instructions on what to do if the container is damaged in any way, or if the pesticide is leaking or has been spilled, and precautions to minimize exposure if damage occurs.
5. General precautions concerning locked storage, storage in original container only, and separation of pesticides during storage to prevent cross-contamination of other pesticides, fertilizer, food, and feed.
6. General storage instructions for household products should emphasize storage in original container and placement in locked storage areas.

B. Pesticide Disposal Instructions:

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

1. The labels of all products, except domestic use, must contain the statement, "Do not contaminate water, food, or feed by storage or disposal."
2. Except those products intended solely for domestic use, the labels of all products that contain active ingredients appearing on the "Acutely Hazardous" Commercial Pesticide Products List (RCRA "E" List) at the end of this appendix or are assigned to Toxicity Category I on the basis of oral or dermal toxicity, skin or eye irritation potential, or Toxicity Category I or II on the basis of acute inhalation toxicity must bear the following pesticide disposal statement:

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

The labels of all products, except those intended for domestic use, containing active or inert ingredients that appear on the "Toxic" Commercial Pesticide Products List (RCRA "F" List) at the end of this appendix or presently meet any of the criteria in Subpart C, 40 CFR 261 for a hazardous waste must bear the following pesticide disposal statement:

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

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

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

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

C. Container Disposal Instructions

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

1. All products intended for domestic use must bear one of the following container disposal statements:

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

2. The labels for all other products must bear container disposal instructions, based on container type, listed below:

Container Type	Statement
Metal containers (non-aerosol)	Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or by other procedures approved by state and local authorities.
Plastic containers	Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.
Glass containers	Triple rinse (or equivalent). Then dispose of in a sanitary landfill or by other approved state and local procedures.

Appendix IV-5
(continued)

Container Type	Statement
Fiber drums with liners	Completely empty liner by shaking and tapping sides and bottom to loosen clinging particles. Empty residue into application equipment. Then dispose of liner in a sanitary landfill or by incineration if allowed by state and local authorities. If drum is contaminated and cannot be reused ¹ , dispose of in the same manner.
Paper and plastic bags	Completely empty bag into application equipment. Then dispose of empty bag in a sanitary landfill or by incineration, or, if allowed by State and local authorities, by burning. If burned, stay out of smoke.
Compressed gas cylinders	Return empty cylinder for reuse (or similar wording).

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

2. The labels for all other products must bear container disposal instructions, based on container type, listed on the first page of this Appendix.

Pesticides that are hazardous wastes under 40 CFR 261.33(e) and (f) when discarded.

"Acutely Hazardous" Commercial Pesticides (RCRA "E" List)
Active Ingredients, (no inerts):

Acrolein
Aldicarb
Aldrin
Allyl alcohol
Aluminum phosphide
4-Aminopyridine
Arsenic acid
Arsenic pentoxide
Arsenic trioxide
Calcium cyanide
Carbon disulfide
p-Chloroaniline
Cyanides (soluble cyanide salts, not specified elsewhere)
Cyanogen chloride
2-Cyclohexyl-4,6-dinitrophenol
Dieldrin
0,0-Diethyl S-[2-ethylthio)ethyl] phosphorodithioate
(disulfoton, Di-Syston)
0,0-Diethyl 0-pyrazinyl phosphorothioate (Zinophos)
Dimethoate
0,0-Dimethyl 0-p-nitrophenyl phosphorothioate (methyl parathion)
4,6-Dinitro-o-cresol and salts
4,6-Dinitro-o-cyclohexylphenol
2,4 Dinitrophenol
Dinoseb
Endosulfan
Endothall
Endrin
Famphur
Fluoroacetamide
Heptachlor
Hexanethyl tetraphosphate
Hydrocyanic acid
Hydrogen cyanide
Methomyl
alpha-Naphthylthiourea (ANTU)
Nicotine and salts
Octamethylpyrophosphoramidate (OMPA, schradan)
Parathion

"Acutely Hazardous" Commercial Pesticides (RCRA "E" List)
Active Ingredients continued:

Phenylmercuric acetate (PMA)
Phorate
Potassium cyanide
Propargyl alcohol
Sodium azide
Sodium cyanide
Sodium fluoroacetate
Strychnine and salts
0,0,0,0-Tetraethyl dithiopyrophosphate (sulfotepp)
Tetraethyl pyrophosphate
Thallium sulfate
Thiofanox
Toxaphene
Warfarin
Zinc phosphide

There are currently no inert ingredients for commercial pesticides on the "Acutely Hazardous" List (RCRA "E" List).

"Toxic" Commercial Pesticide Products (RCRA "F" List)
Active Ingredients:

Acetone
Acrylonitrile
Amitrole
Benzene
Bis(2-ethylhexyl)phthalate
Cacodylic acid
Carbon tetrachloride
Chloral (hydrate)
Chlordane (technical)
Chlorobenzene
4-Chloro-m-cresol
Chloroform
o-Chlorophenol
4-Chloro-o-toluidine hydrochloride
Creosote
Cresylic acid
Cyclohexane
Decachlorooctahydro-1,3,4-metheno-2H-cyclobuta[c,d]-pentalen-2-one
(kepone, chlordecone)
1,2-Dibromo-3-chloropropane (DBCP)
Dibutyl phthalate
S-3,3-(Dichloroallyl diisopropylthiocarbamate (diallate, Avadex)
o-Dichlorobenzene
p-Dichlorobenzene
Dichlorodifluoromethane (Freon 12®)
3,5-Dichloro-N-(1,1-dimethyl-2-propynyl) benzamide (pronamide, Kerb)
Dichloro diphenyl dichloroethane (DDD)
Dichloro diphenyl trichloroethane (DDT)
Dichlorethyl ether
2,4-Dichlorophenoxyacetic, esters and salts (2,4-D)
1,2-Dichloropropane
1,3-Dichloropropane (Telone)
Dimethyl phthalate
Ethyl acetate
Ethyl 4,4'-dichlorobenzilate (chlorobenzilate)
Ethylene dibromide (EDB)
Ethylene dichloride
Ethylene oxide
Formaldehyde
Furfural
Hexachlorobenzene
Hexachlorocyclopentadiene
Hexachloroethane
Hydrofluoric acid

"Toxic" Commercial Pesticide Products (RCRA "F" List)
Active Ingredients:

Isobutyl alcohol
Lead acetate
Lindane
Maleic hydrazide
Mercury
Methyl alcohol
Methyl bromide
Methyl chloride
2,2'-Methylenebis (3,4,6-trichlorophenol) (hexachlorophene)
Methylene chloride
Methyl ethyl ketone
4-Methyl-2-pentanone (methyl isobutyl ketone)
Naphthalene
Nitrobenzene
p-Nitrophenol
Pentachloroethane
Pentachloronitrobenzene (PCNB)
Pentaclorophenol
Phenol
Phosphorodithioic acid, 0,0-diethyl, methyl ester
Propylene dichloride
Pyridine
Resorcinol
Safrole
Selenium disulfide
Silvex
1,2,4,5-Tetrachlorobenzene
1,1,2,2-Tetrachloroethane
Tetrachloroethylene
2,3,4,6-Tetrachlorophenol
Thiram
Toluene
1,1,1-Trichloroethane
Trichloroethylene
Trichloromonofluoromethane (Freon 11®)
2,4,5-Trichlorophenol
2,4,6-Trichlorophenol
2,4,5-Trichlorophenoxyacetic acid (2,4,5-T)
Xylene

"Toxic" Commercial Pesticide Products (RCRA "F" List)
Inert Ingredients:

Acetone	Formaldehyde
Acetonitrile	Formic acid
Acetophenone	Isobutyl alcohol
Acrylic acid	Meleic anhydride
Aniline	Methyl alcohol (methanol)
Benzene	Methyl ethyl ketone
Chlorobenzene	Methyl methacrylate
Chloroform	Naphthalene
Cyclohexane	Saccharin and salts
Cyclohexanone	Thiourea
Dichlorodifluoromethane (Freon 12®)	Toluene
Diethyl phthalate	1,1,1-Trichloroethane
Dimethylamine	1,1,2-Trichloroethane
Dimethyl phthalate	Trichlorofluoromethane (Freon 11®)
1,4-Dioxane	Vinyl chloride
Ethylene oxide	Xylene

case, and safety of the formulated end-use product, may not consider any data as supporting the application, except the following data:

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

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

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

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

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

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

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

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

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

(f) If the applicant's product contains any active ingredient other than those that are present solely because of the incorporation into the product, during formulation, of one or more other registered pesticide products purchased from another producer, then the applicant shall also comply

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with § 162.8-5 as to such active ingredient, and the application shall contain an acknowledgment that for purposes of FIFRA section 3(c)(1)(D) the application relies on (and any resulting registration should be regarded as if it were based on the Administrator's consideration of) the following data:

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

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

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

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

(Secs. 3, 8, and 25 of FIFRA, as amended, 7 U.S.C. 136 et seq.)

144 FR 27663, May 11, 1979

§ 162.10 Labeling requirements.

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

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

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

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

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

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

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

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

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

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

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

(ii) All required label text must:

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

(B) Appear on a clear contrasting background; and

(C) Not be obscured or crowded.

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

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

(ii) *Tank cars and other bulk containers*—(A) *Transportation*. While a pesticide product is in transit, the ap-

propriate provisions of 49 CFR Parts 170-180, concerning the transportation of hazardous materials, and specifically those provisions concerning the labeling, marking and placarding of hazardous materials and the vehicles carrying them, define the basic Federal requirements. In addition, when any registered pesticide product is transported in a tank car, tank truck or other mobile or portable bulk container, a copy of the accepted label must be attached to the shipping papers, and left with the consignee at the time of delivery.

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

(5) *False or misleading statements*. Pursuant to section 2(q)(1)(A) of the Act, a pesticide or a device declared subject to the Act pursuant to § 162.15, is misbranded if its labeling is false or misleading in any particular including both pesticidal and non-pesticidal claims. Examples of statements or representations in the labeling which constitute misbranding include:

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

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

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

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

(v) Any statement directly or indirectly implying that the pesticide or device is recommended or endorsed by any agency of the Federal Government;

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

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

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

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

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

(A) "Contains all natural ingredients";

(B) "Among the least toxic chemicals known";

(C) "Pollution approved";

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

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

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

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

(i) Is false or misleading, or

(ii) Has not been approved by the Administrator through registration or supplemental registration as an additional name pursuant to § 162.6(b)(4).

(c) **Name and address of producer, registrant, or person for whom produced.** An unqualified name and address given on the label shall be considered as the name and address of the producer. If the registrant's name appears on the label and the registrant is not the producer, or if the name of the person for whom the pesticide was produced appears on the label, it must

be qualified by appropriate wording such as "Packed for * * *," "Distributed by * * *" or "Sold by * * *" to show that the name is not that of the producer.

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

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

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

(4) In all cases, net content shall be stated in terms of the largest suitable unit, i.e., "1 pound 10 ounces" rather than "24 ounces."

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

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

(e) **Product registration number.** The registration number assigned to the pesticide product at the time of registration shall appear on the label, preceded by the phrase "EPA Registration No.," or the phrase "EPA Reg. No." The registration number shall be set in type of a size and style similar to other print on that part of the label on which it appears and shall run parallel to it. The registration number and the required identifying phrase shall not appear in such a manner as to suggest or imply recommendation or endorsement of the product by the Agency.

(f) **Producing establishments registration number.** The producing establishment registration number preceded by the phrase "EPA Est.," of the

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(final establishment at which the product was produced may appear in any suitable location on the label or immediate container. It must appear on the wrapper or outside container of the package if the EPA establishment registration number on the immediate container cannot be clearly read through such wrapper or container.

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

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

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

(3) **Names to be used in ingredient statement.** The name used for each ingredient shall be the accepted common name, if there is one, followed by the chemical name. The

common name may be used alone only if it is well known. If no common name has been established, the chemical name alone shall be used. In no case will the use of a trademark or proprietary name be permitted unless such name has been accepted as a common name by the Administrator under the authority of Section 25(c)(6).

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

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

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

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

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

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

(h) **Warnings and precautionary statements.** Required warnings and precautionary statements concerning the general areas of toxicological hazard including hazard to children, environmental hazard, and physical or chemical hazard fall into two groups:

those required on the front panel of the labeling and those which may appear elsewhere. Specific requirements concerning content, placement, type size, and prominence are given below.

(1) **Required front panel statements.** With the exception of the child

hazard warning statement, the text required on the front panel of the label is determined by the Toxicity Category of the pesticide. The category is assigned on the basis of the highest hazard shown by any of the indicators in the table below:

Hazard indicators	Toxicity categories			
	I	II	III	IV
Oral LD ₅₀	Up to and including 50 mg/kg	From 50 thru 500 mg/kg	From 500 thru 5000 mg/kg	Greater than 5000 mg/kg
Inhalation (C) ₅₀	Up to and including 2 mg/liter	From 2 thru 5 mg/liter	From 5 thru 20 mg/liter	Greater than 20 mg/liter
Dermal LD ₅₀	Up to and including 200 mg/kg	From 200 thru 2000	From 2,000 thru 20,000	Greater than 20,000
Eye effects.....	Corneal opacity, corneal opacity not reversible within 7 days	Corneal opacity reversible within 7 days; irritation persisting for 7 days	No corneal opacity; irritation reversible within 7 days	No irritation
Skin effects.....	Gloves	Severe irritation of 72 hours	Moderate irritation of 72 hours	Mild or slight irritation of 72 hours

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

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

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

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

(E) **Use of signal words.** Use of any signal word(s) associated with a higher Toxicity Category is not permitted

except when the Agency determines that such labeling is necessary to prevent unreasonable adverse effects on man or the environment. In no case shall more than one human hazard signal word appear on the front panel of a label.

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

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

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front panel near the word "Poison" and the skull and crossbones.

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

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

Size of label front panel in square inches	Required signal word, all capitals		"Keep out of reach of children"	
	Points		Points	
8 sq in. and under	8		8	
Above 8 to 16	10		10	

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

(H) **Environmental hazards.** Where a hazard exists to non target organisms excluding humans and domestic animals, precautionary statements are required stating the nature of the hazard and the appropriate precau-

cautionary statements are required stating the nature of the hazard and the appropriate precau-

tions to avoid potential accident, injury or damage. Examples of the hazard statements and the circumstances under which they are required follow:

(A) If a pesticide intended for outdoor use contains an active ingredient with a mammalian acute oral LD₅₀ of 100 or less, the statement "This Pesticide is Toxic to Wildlife" is required.

(B) If a pesticide intended for outdoor use contains an active ingredient with a fish acute LC₅₀ of 1 ppm or less, the statement "This Pesticide is Toxic to Fish" is required.

(C) If a pesticide intended for outdoor use contains an active ingredient with an avian acute oral LD₅₀ of 100 mg/kg or less, or a subacute dietary LC₅₀ of 500 ppm or less, the statement "This Pesticide is Toxic to Wildlife" is required.

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

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

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

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

(A) Pressurized Containers	
Flash point at or below 50° F; if there is a flashback at any valve opening.	Extremely flammable. Contents under pressure. Keep away from fire, sparks, and heated surfaces. Do not puncture or incinerate container. Exposure to temperatures above 120° F may cause bursting.
Flash point above 50° F and not over 60° F or if the flame extension is more than 18 in long at a distance of 6 in from the flame.	Flammable. Contents under pressure. Keep away from heat, sparks, and open flame. Do not puncture or incinerate container. Exposure to temperatures above 120° F may cause bursting.
All other pressurized containers	Contents under pressure. Do not use or store near heat or open flame. Do not puncture or incinerate container. Exposure to temperatures above 120° F may cause bursting.
(B) Nonpressurized Containers	
Flash point	Required text
At or below 50° F	Extremely flammable. Keep away from fire, sparks, and heated surfaces.
Above 50° F and not over 60° F	Flammable. Keep away from heat and open flame.
Above 60° F and not over 100° F	Do not use or store near heat or open flame.

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

(ii) **Placement of directions for use.** Directions may appear on any portion

of the label provided that they are conspicuous enough to be easily read by the user of the pesticide product. Directions for use may appear on printed or graphic matter which accompanies the pesticide provided that:

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

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

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

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

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

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

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

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

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

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

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

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

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

(1) There is information readily available to the formulators on the composition, toxicity, methods of use, applicable restrictions or limitations,

and effectiveness of the product for pesticide purposes;

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

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

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

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

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

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

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

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

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

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

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

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

(ix) Specific directions concerning the storage and disposal of the pesticide and its container, meeting the requirements of 40 CFR Part 165. These instructions shall be grouped and appear under the heading "Storage and Disposal." This heading must be

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set in type of the same minimum sizes as required for the child hazard warning (See Table in § 162.10(h)(1)(iv)).

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

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

(B) Rotational crop restrictions.

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

(D) [Reserved]

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

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

(1) *Statement of Use Classification.* By October 22, 1978, all pesticide products must bear on their labels a statement of use classification as described in paragraphs (j)(1) and (2) of this section. Any pesticide product for which some uses are classified for general use and others for restricted use shall be separately labeled according to the labeling standards set forth in this subsection, and shall be marketed as separate products with different registration numbers, one bearing directions only for general use(s) and the other bearing directions for restricted use(s) except that, if a product has both restricted use(s) and general use(s), both of these uses may appear on a product labeled for restricted use. Such products shall be subject to the provisions of § 162.10(j)(2).

(2) *General Use Classification.* Pesticide products bearing directions for use(s) classified general shall be labeled with the exact words "General Classification" immediately below the heading "Directions for Use." And reference to the general classification that suggests or implies that the general utility of the pesticide extends

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beyond those purposes and uses contained in the Directions for Use will be considered a false or misleading statement under the statutory definitions of misbranding.

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

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

(B) Directly below this statement on the front panel, a summary statement of the terms of restriction imposed as a precondition to registration shall appear. If use is restricted to certified applicators, the following statement is required: "For retail sale to and use only by Certified Applicators or persons under their direct supervision and only for those uses covered by the Certified Applicator's certification." If, however, other regulatory restrictions are imposed, the Administrator will define the appropriate wording for the terms of restriction by regulation.

(k) Advertising [Reserved]

(40 FR 23282, July 3, 1975; 40 FR 32329, Aug. 1, 1975; 40 FR 36371, Aug. 21, 1975, as amended at 43 FR 5788, Feb. 9, 1978)