United States
Environmental Protection
Agency

Office of
Pesticides and Toxic Substances
Washington DC 20460

September 1988
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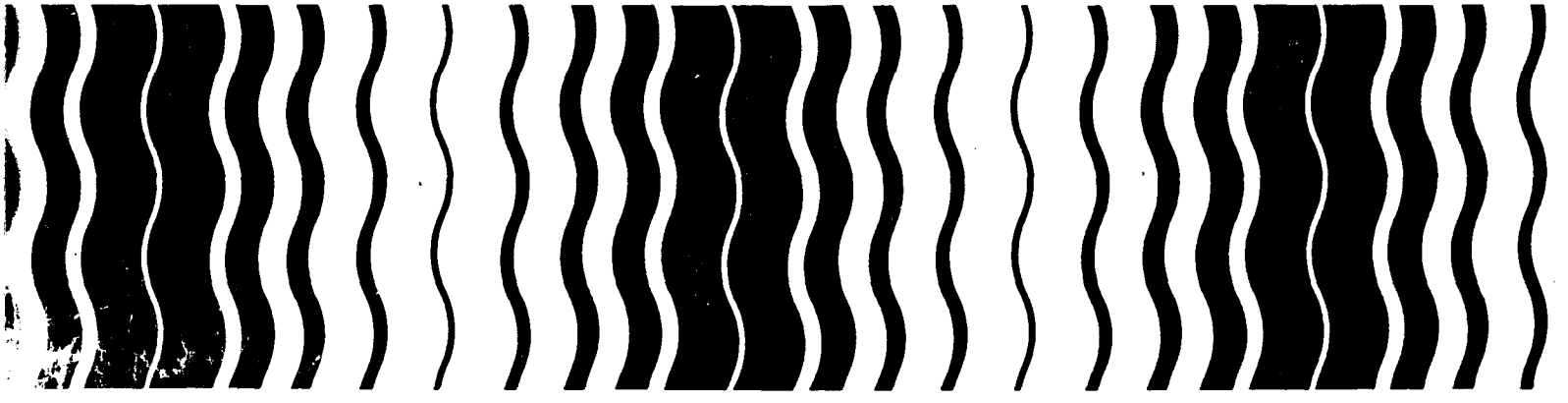
Pesticides

EPA

Guidance for the Reregistration of Pesticide Products Containing 2-(2,4 DICHLORO-PHENOXY) PROPIONIC ACID (2,4-DP) as the Active Ingredient



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GUIDANCE FOR THE

REGISTRATION OF PESTICIDE PRODUCTS

CONTAINING

2-(2,4 Dichlorophenoxy) propionic acid and its Amines and Esters

AS THE ACTIVE INGREDIENT

CASE NUMBER: 0294

CAS NUMBER: 120-36-5 (Acid)

September 1988

Environmental Protection Agency

Office of Pesticide Programs

Washington, DC 20460

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APPENDICES

GLOSSARY OF TERMS AND ABBREVIATIONS

ADI: Acceptable Daily Intake - an acceptable daily intake of pesticide residue based on a complete data base.

a.i.: Active ingredient

CAS: Chemical Abstract Services (number)

Core Classification: A general guide to the acceptability of data for the purpose of supporting registration:

Guideline - studies which satisfy Agency data requirements;

Minimum - studies which are acceptable to support registration of pesticide products but were not necessarily done according to Agency guidelines;

Supplementary - studies which are scientifically sound, thus information may be useful; however, the studies were performed under conditions that deviated substantially from recommended protocols. Studies do not meet guidelines requirements and thus do not support registration of a product; and,

Invalid - studies which are deficient in some vital parameter or which have been judged not to be scientifically sound or whose reliability is seriously questioned.

CSF: Confidential Statement of Formula

EEC: Estimated Environmental Concentration - estimated pesticide concentration in the environment (terrestrial or aquatic ecosystem).

EPA: The U.S. Environmental Protection Agency (Agency)

FIFRA: Federal Insecticide, Fungicide and Rodenticide Act

LC_{50}: Median lethal concentration - a statistically derived concentration of a substance that can be expected to cause death in 50 percent of test animals, expressed as weight or volume of test substance per volume of air or water or per weight of feed (e.g., mg/l or ppm).

LD_{50}: Median lethal dose - a statistically derived single dose that can be expected to cause death in 50 percent of test animals when administered by the

route indicated, expressed as weight of substance per unit weight of test animal (e.g., mg/kg).

LOEL: Lowest Observed Effect Level

MPI: Maximum Permissible Intake

MRID: Master Record Identification (number) - EPA's system of tracking studies used in support of registration.

MP: Manufacturing-use product

NPDES: National Pollution Discharge Elimination System

NOEL: No Observed Effect Level - the maximum dose used in a test which produces no observed adverse effects.

OPP: The Office of Pesticide Programs of the U.S. EPA

OES: The Office of Endangered Species, U.S. Fish and Wildlife Service

PHI: Preharvest Interval

PPM: Parts per million

RfD: Reference Dose

Technical: Active ingredient as manufactured

TMRC: Theoretical Maximum Residue Contribution - an estimate of dietary exposure obtained by multiplying residue tolerance levels for a given pesticide by the average daily per capita food consumption figure then adding the exposure figures for each crop. TMRC is usually expressed in terms of mg ai/day, assuming a 60 kg person.

I. INTRODUCTION

EPA has established the Registration Standards program in order to provide an orderly mechanism by which pesticide products containing the same active ingredient can be reviewed and standards set for compliance with FIFRA. The standards are applicable to reregistration and future applications for registration of products containing the same active ingredient. Each registrant of a product containing an active ingredient subject to this Standard who wishes to continue to sell or distribute that product must bring his product and labeling into compliance with FIFRA, as instructed by this Standard.

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

1. Studies that are acceptable to support the data requirements for the currently registered uses of the pesticide.

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

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

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

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[1]The scientific reviews and Compendium of Uses may be obtained from the National Technical Information Service (NTIS), Attn: Order Desk, 5285 Port Royal Road, Springfield, VA 22161. Telephone (703) 487-4650.

EPA's reassessment results in the development of a regulatory position, contained in this Registration Standard, on the pesticide and each of its registered uses. See Section IV - Regulatory Position and Rationale. Based on its regulatory position, the Agency may prescribe a variety of steps to be taken by registrants to maintain their registrations in compliance with FIFRA. These steps may include:

1. Submittal of data in support of product registration;

2. Modification of product labels;

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

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

5. Modification of uses or formulation types; or

6. Specification of packaging limitations.

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

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

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

Registrants are reminded that FIFRA sec. 6(a)(2) requires them to submit factual information concerning possible unreasonable adverse effects of a pesticide at any

time that they become aware of such information. Registrants must notify the Agency of any information, including interim or preliminary results of studies, if that information suggests possible adverse effects on man or the environment. This requirement is independent of the specific time requirements imposed by EPA for submittal of completed studies called in by the Agency and continues as long as the products are registered under FIFRA.

II. CHEMICAL(S) COVERED BY THIS STANDARD

A. DESCRIPTION OF CHEMICAL(S)

This Standard covers 2,4-DP [2-(2,4-dichlorophenoxy)propionic acid], also referred to as dichlorprop, and its amines and esters.

The acid is not formulated as an end-use product; instead the typical end-use product, as applied, is a salt (diethanolamine or dimethylamine) or ester (butoxyethyl or isooctyl) of the parent compound. The Standard will refer to the amine or ester forms as 2,4-DP[x], where [x] refers to the substituted amine or ester. It should also be noted that the majority of registered end-use products containing 2,4-DP are formulated as combinations of various phenoxy compounds.

The amines and esters of 2,4-DP may differ significantly from the parent compound in biological activity and environmental fate, and the Agency has little or no data to evaluate these characteristics. Therefore, requirements in this Standard address not only the acid, but also the amine and ester forms.

Chemical Name: 2-(2,4-dichlorophenoxy)propionic acid
Empirical Formula: $C_9H_8Cl_2O_3$
Molecular Weight: 235.1
CAS Registry Number: 120-36-5
Shaughnessy Number: 031401

Chemical Name: 2,4-DP, Diethanolamine Salt
Empirical Formula: $C_{13}H_{19}Cl_2NO_5$
Molecular Weight: 275.9
CAS Registry Number: 84731-66-8
Shaughnessy Number: 031416

Chemical Name: 2,4-DP, Dimethylamine Salt
Empirical Formula: $C_{11}H_{15}Cl_2NO_3$
Molecular Weight: 280.2
CAS Registry Number: 53404-32-3
Shaughnessy Number: 031419

Chemical Name: 2,4-DP, Butoxyethyl Ester
Empirical Formula: $C_{15}H_{20}Cl_2O_4$
Molecular Weight: 335.2
CAS Registry Number: 53404-31-2
Shaughnessy Number: 031453

Chemical Name: 2,4-DP, Isooctyl Ester
Empirical Formula: $C_{17}H_{24}Cl_2O_3$
Molecular Weight: 347.3
CAS Registry Number: 28631-35-8
Shaughnessy Number: 031463

B. USE PROFILE

Type of Pesticide: Herbicide; plant growth regulator.
Pests Controlled: Broadleaf weeds and woody plants.
Registered Uses: Terrestrial Nonfood (golf courses, noncrop and recreational areas); Aquatic Nonfood (drainage ditchbanks); Domestic Outdoor (home lawns); and Forestry (conifer/pine release, forest plantation site preparation).
Predominant Uses: Ornamental turf, e.g., golf courses and home lawns (approximately 57% of total usage); rights-of-way/roadways (approximately 42% of total usage).
Mode of Activity: Phenoxy herbicides (including 2,4-DP) are hormone weed killers affecting the activity of enzymes, respiration and cell division.
Formulation Types: Granular; liquid (emulsifiable concentrate, soluble concentrate, ready-to-use); aerosol spray.
Methods of Application: Ground equipment and aircraft.

C. BACKGROUND

On December 3, 1986, the Agency issued a preliminary notification of Special Review to registrants of 2,4-DB and 2,4-DP (a similar notice had been issued to 2,4-D registrants on September 22, 1986).* The notice for 2,4-D registrants was based on epidemiological evidence that indicated an association between farm use of phenoxy herbicides (including 2,4-D) and cancer (non-Hodgkin's lymphoma). 2,4-DB and 2,4-DP registrants were issued notices based on their structural relationship to 2,4-D.

The Agency has subsequently issued a proposed decision not to initiate a special review for 2,4-D, 2,4-DB and 2,4-DP (53 FR 9590, March 23, 1988). In this document the Agency has proposed that special review is not appropriate at this time for any of the compounds and that a decision regarding whether to group 2,4-D, 2,4-DB and 2,4-DP in future review activities will be made as additional metabolic and toxicologic data are developed. Final action has not been taken on this proposal.

* The Special Review process, described in 40 CFR Part 154, is the mechanism by which the Agency determines whether a pesticide poses unreasonable adverse effects to man or the environment. In Special Review, the Agency weighs the risks of pesticide use against the benefits of use. Documents are made available during the process to permit public participation in EPA's deliberations prior to any final determinations of regulatory action.

As part of the Agency's strategy on dioxins, the Agency issued a Data Call-in Notice in June 1987 requiring registrants to analyze their 2,4-DP products for certain halogenated dibenzo-p-dioxin or dibenzofuran (HDD and HDF) contaminants. This Notice was issued based on the Agency's assumption that, because of the chemical structure, class and certain manufacturing and processing conditions, 2,4-DP products could be contaminated with HDDs or HDFs. Draft protocols for analyzing the pesticide have been submitted. The Agency is evaluating the proposed methods to determine whether they meet the requirements specified in the Data Call-in Notice.

III. AGENCY ASSESSMENT

A. SUMMARY

The Agency has reviewed all data submitted to support the registration of 2,4-DP products, available through March 1988. Based on review of these data, the Agency has reached the conclusions summarized below.

1. When 2,4-DP is formulated as an amine or ester, the biological activity and fate in the environment may be affected. EPA has little or no data to evaluate the effects of the [x] moiety. Therefore, data requirements imposed by this Standard include testing for 2,4-DP amines and esters as well as the acid.

2. The Agency is not requiring further chronic testing of 2,4-DP at this time. Dietary exposure to humans is not expected to occur from registered uses and existing chronic toxicity/ oncogenicity studies do not indicate significant toxicological effects. Additional chronic testing could be required if findings from the basic tier of 2,4-DP toxicological data required in Appendix I, or in data developed for structurally-related compounds suggest that further evaluation of chronic health effects is needed.

3. The results of several mutagenicity studies for 2,4-DP indicate a positive trend for mutagenic effects. Data have been evaluated for 2,4-DP acid and 2,4-DP butoxyethyl ester, and additional data are required for each 2,4-DP compound.

4. Concern about possible neurotoxic effects for the family of 2,4-D compounds (2,4-D, 2,4-DB and 2,4-DP) has prompted the requirement for a special neurotoxicity study on 2,4-D. A special study is not required for 2,4-DP at this time, pending the outcome of the 2,4-D study.

5. Concern about possible groundwater contamination exists for the family of 2,4-D compounds (2,4-D, 2,4 DB and 2,4-DP). Additional data and a label warning are required.

6. Data for 2,4-DP butoxyethyl ester indicate that these products may be toxic to fish and aquatic invertebrates.

As a result of this review, the Agency has identified data necessary to further evaluate the potential for environmental and human risks associated with the use of 2,4-DP. These data must be submitted in order to maintain registration of products or register new products containing 2,4-DP. These data are listed in the Data Tables contained in Appendix I.

B. TOXICOLOGICAL ASSESSMENT

This section discusses acceptable and partially acceptable data available to the Agency for 2,4-DP acid and 2,4-DP[x] compounds.

ACUTE TOXICITY STUDIES. Acceptable acute oral data indicate 2,4-DP acid is mildly toxic (Category III). Acute dermal and inhalation toxicity, primary eye/skin irritation and skin sensitization testing are data gaps. No data are available for 2,4-DP[x] compounds.

SUBCHRONIC TOXICITY STUDIES. In oral studies for 2,4-DP acid in rats and dogs, the most significant effects noted were in the kidneys and liver. There was an increased incidence of kidney and liver lesions in all treated animals in the rat study. A no observed effect level (NOEL) was not established. In the dog study, although compound-related toxic effects were observed, too few animals per dose level were used and the treatment period was too short to allow meaningful interpretation and statistical analysis of the data.

CHRONIC TOXICITY/ONCOGENICITY STUDIES. A chronic feeding/oncogenicity study in SPF Fischer 344 rats fed 0, 100, 300, 1000 and 3000 ppm 2,4-DP acid showed a slight, non-statistically significant increase in the incidence of liver neoplastic nodules in 3,000 ppm males, but no significant increase in tumor incidence in any organ in either treated males or females. Kidney and liver toxicity and decreased body weight and food efficiency were systemic effects observed in males and females at the 3,000 ppm dose level. Decreases in urine specific gravity/protein were noted at the 300, 1000 and 3,000 ppm dose levels. The lowest observed effect level(LOEL) for systemic effects was 300 ppm (11 mg/kg-males, 13 mg/kg-females); the NOEL, 100 ppm (4 mg/kg). Under conditions of the study, 2,4-DP was not oncogenic in the rat.

In an oncogenicity study in CD-1 mice fed 0, 25, 100 and 300 mg/kg 2,4-DP acid, no significant increase in tumor incidence was demonstrated when treated animals were compared to controls. Systemic effects observed were significant increases in absolute and relative liver weights in 300 mg/kg males and increases in the incidence of non-neoplastic lesions in the liver and biliary system in all treated males at doses of 25 mg/kg and above. The LOEL for systemic effects was 25 mg/kg; a NOEL was not established. There were numerous discrepancies and inconsistencies in the data reported in the mouse study, and the highest dose used did not appear to reach a maximum tolerated dose (MTD). Refer to the toxicology data tables in Appendix I for a description of the deficiencies.

TERATOLOGY STUDIES. No data are available to assess the teratological potential of 2,4-DP.

REPRODUCTION STUDIES. A 3-generation reproduction study in Sprague Dawley rats fed 0, 6, 25 and 100 mg/kg 2,4-DP acid (changed to 0, 6, 25 and 50 mg/kg at the F_{1B} premating period), showed no reproduction or fertility effects when treated animals were compared to controls. Decreased body weight and food efficiency were noted in F_0 parents and fetal mortality

was significantly increased in F_{1B} and F_{2A} litters at the 100 mg/kg dose level. When the high dose was reduced to 50 mg/kg, decreases in weight/food efficiency and increased mortality were abated. The LOEL for maternal and developmental toxicity is 100 mg/kg; the NOEL 50 mg/kg. There were numerous reporting deficiencies in this study which are described in the toxicology data tables in Appendix I.

MUTAGENICITY STUDIES. Data for 2,4-DP acid indicate that the compound appears to cause DNA damage (mitotic gene conversion) and gene mutation in yeast at concentrations of 4.0 mg/ml or greater. In structural chromosomal assays for 2,4-DP acid using Chinese hamster ovary cells, chromosomal aberrations were observed at concentrations of 2000 ug/ml and above, with metabolic activation (these effects were not observed in the absence of metabolic activation). In other structural chromosomal assays using Chinese hamster ovary cells, 2,4-DP butoxyethyl ester appeared to cause an increased incidence of chromosome and chromatid breaks, acting as a direct clastogen at levels of 751 ug/ml and above.

NEUROTOXICITY STUDIES. Several instances of accidental human poisoning with 2,4-D, resulting in severe neurotoxicity, have been reported. Since 2,4-DP is structurally related to 2,4-D, a concern regarding neurotoxic potential exists for 2,4-DP compounds as well. A neurotoxicity study has been required for 2,4-D. If the 2,4-D study shows neurotoxic effects, studies may be required using 2,4-DP.

METABOLISM STUDIES. No acceptable data are available to describe the metabolism of 2,4-DP compounds.

The Agency is requiring a basic set of toxicological data for 2,4-DP acid and 2,4-DP[x] compounds to fill data gaps identified in Appendix I. Chronic studies are reserved for each 2,4-DP compound, pending submission and evaluation of the basic tier of studies (acutes, dermal sensitization, subchronic oral and dermal, teratology and mutagenicity).

C. OTHER SCIENCE FINDINGS

ENVIRONMENTAL FATE. The Agency has no acceptable data pertinent to the fate of 2,4-DP acid or 2,4-DP[x] compounds.

Groundwater. Available data for 2,4-D suggest that chemicals in the 2,4-D family of compounds (2,4-D, 2,4-DB and 2,4 DP) have the potential to contaminate groundwater. The Agency is requiring data to further assess the mobility of these compounds.

Reentry. Based on data available to the Agency, 2,4-DP products do not meet the toxicity criteria specified in 40 CFR 158 for reentry data.

Pesticide Incident Monitoring System (PIMS). PIMS files covering the period 1966 to 1979 reported incidents involving drift damage to non-target plants from aerial (173 reports) and ground (104 reports) application, as well as volatilization (35 reports) for unspecified 2,4-D (family) compounds.

ECOLOGICAL EFFECTS. Available data are insufficient to completely assess the ecological effects of 2,4-DP acid and 2,4-DP[x] compounds to wildlife and aquatic organisms. The following preliminary conclusions can be made, however, based on available data (NOTE: all figures are LC_{50} values):

Avian Effects. No acceptable acute oral data are available on any 2,4-DP compound. The Agency has acceptable dietary studies on 2,4-DP butoxyethyl ester to characterize this compound as practically non-toxic (10,000 ppm) to waterfowl and upland game birds on a subacute basis.

Aquatic Organism Effects. Acceptable data on 2,4-DP butoxyethyl ester technical indicate this compound is highly toxic to rainbow trout (0.50 ppm) and practically non-toxic to freshwater invertebrates (252 ppm). Acceptable data on 2,4-DP butoxyethyl ester end-use formulations indicate high toxicity to bluegill (0.83 ppm) and freshwater invertebrates (0.005 ppm). There are no acceptable data on other 2,4-DP compounds.

Non-Target Insect Effects. There are no data addressing the toxicity of 2,4-DP acid or 2,4-DP[x] compounds to honey bees.

Non-Target Plant Effects. There are no data available to evaluate phytotoxicity of 2,4-DP compounds to non-target plants. Since 2,4-DP is a broadleaf herbicide, there is a potential hazard to non-target plants from existing uses.

Endangered Species. Because of limited environmental fate and ecological effects data, hazard assessments for endangered species cannot be completed at this time. When additional data are received, the Agency will determine whether consultation with the Office of Endangered Species (OES) is appropriate.

PRODUCT CHEMISTRY. The Agency has noted that 2,4-DP may be contaminated with tetra- through heptahalogenated dibenzo-p-dioxins or dibenzofurans, or N-nitrosamines. Certain polyhalogenated dibenzo-p-dioxin or dibenzofuran congeners have been found to be mutagenic, oncogenic, teratogenic and to cause reproductive toxicity. Nitrosamines have been found to be oncogenic. Analytic data to identify and quantify tetra- through heptachlorinated dibenzo-p-dioxin or dibenzofuran contaminants were required in a Data Call-in Notice issued in June 1987. Analytic data to identify and quantify N-nitrosamines are being required, as specified in the data tables.

D. TOLERANCE REASSESSMENT

There are no registered food or feed uses for 2,4-DP acid or its amines or esters that require the establishment of tolerances.

IV. REGULATORY POSITION AND RATIONALE

A. REGULATORY POSITIONS AND RATIONALES

Based on review and evaluation of available data on 2,4-DP, the Agency has made the following determinations. Where label revisions are imposed, specific language is set forth in the Labeling portion of this section.

1. The Agency will not place 2,4-DP in special review at this time.

Rationale. In December 1986, the Agency issued a preliminary notification of special review to the registrants of 2,4-DB and 2,4-DP, based on epidemiologic evidence available at that time (a similar notice had been issued to 2,4-D registrants in September 1986). After additional evaluation of this evidence, the Agency subsequently concluded that these data were inadequate to assess oncogenic potential for the 2,4-D family of compounds (2,4-D, 2,4-DB and 2,4-DP). Therefore, in March 1988, EPA proposed not to initiate a special review of any of the chemicals at this time.

The Agency's concerns regarding toxicological effects of these compounds have not been fully resolved. Additional epidemiological studies are expected to be completed soon and additional laboratory studies are required by this Standard. As these data become available, the Agency will further evaluate potential risks for these compounds and could initiate a special review at a later time and/or consider additional regulatory action, if appropriate. A decision whether to group 2,4-D, 2,4-DB and 2,4-DP in future review activities will be made as additional metabolic and toxicologic data are developed.

2. The Agency will not restrict the use of 2,4-DP products to certified applicators.

Rationale. Based on available data, 2,4-DP products have not met or exceeded any criteria specified in 40 CFR 152.170 which would indicate a need to restrict the use of 2,4-DP to certified applicators.

3. The Agency will require data on the amines and esters of 2,4-DP as well as the acid.

Rationale. When 2,4-DP is formulated as an amine or ester, the biological activity and fate in the environment may be affected. Since the Agency has little or no data to evaluate the effects of the [x] moiety, data are needed on each [x] compound to evaluate these characteristics for the particular amine or ester form.

4. The Agency is requiring a groundwater warning statement on the labels of 2,4-DP products.

Rationale. Although laboratory data demonstrate that phenoxy herbicides may be mobile in soils, the potential to contaminate groundwater appears to be limited by the rapid rate of degradation and uptake by target plants. However, residues of phenoxy herbicides have been detected in groundwater, mostly from point sources, such as mixing, loading and disposal. Since 2,4-DP could be a potential groundwater contaminant, a label statement will advise users to exercise caution when handling 2,4-DP products to prevent such contamination.

The Agency is currently finalizing its Chemicals in Groundwater Strategy and its policy for restricting the use of pesticide products which may reach groundwater. When the policies are in place, the Agency will consider what action is appropriate for 2,4-DP products.

5. The Agency is requiring additional environmental hazards labeling for 2,4-DP butoxyethyl ester products based on potential hazards to aquatic organisms.

Rationale. Available data indicate a significant hazard may exist for aquatic organisms exposed to 2,4-DP butoxyethyl ester products. A label statement describing potential toxicity to aquatic life will alert the user to exercise caution where such exposure may occur.

6. The Agency is requiring the use of gloves when mixing or applying 2,4-DP end-use products.

Rationale. The major route of exposure to workers handling 2,4-DP is dermal. Use of gloves will mitigate potential hazards involving dermal exposure.

7. The Agency is not requiring a reentry interval for 2,4-DP products.

Rationale. Based on data available to the Agency, 2,4-DP products are of low toxicity. Because of these low toxicity levels, it is not considered necessary to establish a reentry interval.

8. The Agency is requiring analytical chemistry data for 2,4-DP products to evaluate contamination with tetra- through heptahalogenated dibenzo-p-dioxins or dibenzofurans, or N-nitrosamines.

Rationale. Polyhalogenated dibenzo-p-dioxins or dibenzofurans may be formed during manufacture of 2,4-DP, and N-nitrosamines may be formed during manufacture or storage of products containing 2,4-DP amines. The Agency has identified these contaminants as being toxicologically significant. The Agency does not have sufficient data to determine the extent and significance of the contamination.

9. The Agency will immediately review certain data as they are submitted.

Rationale. Because of concerns regarding potential risks from 2,4-DP use, the Agency believes it is essential that the following data be reviewed as they are received: all toxicological studies; product chemistry (contaminant analyses, octanol/water partition coefficient, vapor pressure); hydrolysis, photolysis, leaching and adsorption/desorption; and spray drift.

10. While data gaps are being filled, currently registered manufacturing-use products (MP's) and end-use products (EP's) containing 2,4-DP may be sold, distributed, formulated, and used, subject to the terms and conditions speciifed in this Standard. However, significant new uses will not be registered. Registrants must provide or agree to develop additional data, as specified in the data tables, in order to maintain existing registrations.

Rationale. Under FIFRA, the Agency may elect not to cancel or withhold registration even though data are missing or inadequate [FIFRA Section 3(c)2(B) and 3(c)(7)]. Issuance of this Standard provides a mechanism for identifying data needs. These data will be reviewed and evaluated, after which the Agency will determine if additional regulatory actions are necessary. Because of the quantity of data required to maintain existing registrations, the Agency has elected not to consider registration of significant new uses while data gaps are being filled and data evaluated.

B. CRITERIA FOR REGISTRATION

To be registered or reregistered under this Standard manufacturing-use and end-use products must contain 2,4-DP acid or 2,4-DP[x] compounds, bear required labeling, and conform to the product composition, acute toxicity limits, and use pattern requirements listed in this document.

C. ACCEPTABLE RANGES AND LIMITS

Product Composition Standard. To conform to this Standard, manufacturing-use and end-use products must contain 2,4-DP acid or 2,4-DP[x] compounds. Each formulation proposed for registration must be fully described with an appropriate certification of limits, stating maximum and minimum amounts of active and inert ingredients present in the product as well as impurities.

Acute Toxicity Limits. The Agency will consider registration of technical grade, manufacturing-use or end-use products containing 2,4-DP acid or 2,4-DP[x] compounds, provided the products are supported by appropriate acute toxicity data and the labeling for the product bears appropriate precautionary statements for the toxicity category in which the product is placed.

Use Patterns. To be registered under this Standard, manufacturing-use products must be labeled for formulation into other manufacturing-use products or into end-use products bearing federally registered uses. The EPA Compendium of Acceptable Uses (for availability, see page 1) lists all federally registered uses of 2,4-DP acid and 2,4-DP[x] compounds, as well as approved maximum application rates and frequencies.

The use patterns currently registered are Terrestrial Nonfood; Aquatic Nonfood (drainage ditchbanks); Domestic Outdoor; and Forestry.

D. LABELING

All products must bear appropriate labeling as specified in 40 CFR 156.10, PR Notices 83-2, 83-3, and 87-1, and below. Appendix II contains further information on label requirements.

Time Frames for Compliance. Pesticide products containing 2,4-DP acid or 2,4-DP[x] compounds may not be released for shipment by the registrant after October 1, 1989, unless the product bears amended labeling that complies with the requirements of FIFRA, as set forth in this Registration Standard.

Pesticide products containing 2,4-DP acid or 2,4-DP[x] compounds may not be distributed or sold by any person after October 1, 1990, unless the product bears amended labeling that complies with the requirements of this Standard.

In addition to the labeling requirements above, the following information must appear on the labeling of all manufacturing use and end use products.

Ingredient Statement. The ingredient statement for 2,4-DP products must list the active ingredient as:

2-(2,4-dichlorophenoxy)propionic acid . . . . . ____%
OR

2-(2,4-dichlorophenoxy)propionic acid,(amine salt or ester). .____%

2-(2,4-dichlorophenoxy)propionic acid equivalent . . . . . .____%

Use Pattern Statements. All manufacturing-use products must state that they are intended for formulation into end-use products for registered use patterns. However, no use may be included on the label where the registrant fails to agree to comply with the data requirements in Table A for that use pattern.

Precautionary Statements.

1. Environmental Hazards.

a. Manufacturing-Use Products: "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 suthority. For guidance, contact your State Water Board or Regional Office of the EPA."

b. End-Use Products:

(Liquid) - " Drift or runoff may adversely affect nontarget plants. Do not apply directly to water or wetlands (swamps, bogs, marshes, or potholes). Do not contaminate water when disposing of equipment washwaters."

(Granular) - "Runoff may adversely affect nontarget plants. Do not apply directly to water or wetlands (swamps, bogs, marshes, or potholes). Do not contaminate water when disposing of equipment washwaters.

c. 2,4-DP Butoxyethyl ester products must also include the following statement:

(Manufacturing-use products)
"This product is toxic to fish."

(End-use products)
"This product is toxic to fish and aquatic invertebrates."

2. Groundwater/Protective Clothing (End-Use Products).

(Liquid) - "This product can reach groundwater as a result of mixing and loading. To minimize groundwater contamination from spills during mixing, loading and cleaning of equipment, take the following steps:

Mixing and Loading: When mixing, loading or applying this product, wear chemical resistant gloves. Wash nondisposable gloves thoroughly with soap and water before removing. The mixing and loading of spray mixtures into the spray equipment must be carried out on an impervious pad (i.e., concrete slab, plastic sheeting) large enough to catch any spilled material. If spills occur, contain the spill by using an absorbent material (e.g., sand, earth or synthetic absorbent). Dispose of the contaminated absorbent material by placing in a plastic bag and and following disposal instructions on this label. Triple rinse empty containers and add the rinsate to the mixing tank.

Cleaning of Equipment: When cleaning equipment, do not pour the washwater on the ground; spray or drain over a large area away from wells and other water sources."

(Granular) - "This product can reach groundwater from improper handling. To minimize groundwater contamination from spills during loading and cleaning of equipment, take the following steps:

Handling: When handling this product, wear chemical resistant gloves. Wash nondisposable gloves thoroughly with soap and water before removing. If spills occur, collect the material and dispose of by following disposal instructions on this label.

Cleaning of Equipment: When cleaning equipment, do not pour the washwater on the ground; spray or drain over a large area away from wells and other water sources."

V. PRODUCTS SUBJECT TO THIS STANDARD

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

Products are subject to this Registration Standard as follows:

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

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

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

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

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

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

   1. The data requirements listed in Table A.

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[2]Data requirements are listed in the three Tables in Appendix I of this Registration Standard. The Guide to Tables in that Appendix explains how to read the Tables.

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

Table C lists product-specific data applicable to end-use products. The Agency has decided that, in most cases, it will not require the submittal of product-specific data for end-use products at this time. Therefore, most Registration Standards do not contain a Table C.

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

C. End use products containing this pesticide as the sole active ingredient are subject to:

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

2. If eligible for the generic data exemption,[3] the data requirements listed in Table C.

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

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

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

1. If not eligible for the generic data exemption, the data requirements listed in Tables A and C.

2. If eligible for the generic data exemption, the data requirements listed in Table C.

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

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

Two circumstances nullify this exemption:

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

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

VI. REQUIREMENT FOR SUBMISSION OF GENERIC DATA

This portion of the Registration Standard is a notice issued under the authority of FIFRA sec. 3(c)(2)(B). It refers to the data listed in Table A, which are required to be submitted by registrants to maintain in effect the registration of products containing this active ingredient.[4]

A. What are generic data?

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

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

B. Who must submit generic data?

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

If you are granted a generic data exemption, you rely on the efforts of other persons to provide the Agency with the required data. If the registrants who have committed to generate and submit the required data fail to take appropriate steps to meet the requirements or are no longer in compliance with this data requirements notice, the Agency will consider that both they and you are not in compliance and will normally initiate proceedings to suspend the registrations of both your product(s) and their product(s) unless you commit to submit and submit the required data in the specified timeframe. In such cases, the Agency generally will not grant a time extension for submitting the data.

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

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

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

C. What generic data must be submitted?

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

D. How to comply with DCI requirements.

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

1. You will submit the data yourself.

2. You have entered into an agreement with one or more registrants to jointly develop (or share in the cost of developing) the data, but will not be submitting the data yourself. If you use this method, you must state who will submit the data on which you will rely. You must also provide EPA with documentary evidence that an agreement has been formed which allows you to rely upon the data to be submitted. Such evidence may be: (1) your letter offering to join in an agreement and the other registrant's acceptance of your offer, (2) a written statement by the parties that an agreement exists, or (3) a written statement by the person

who will be submitting the data that you may rely upon its submittal. The Agency will also require adequate assurance that the person whom you state will provide the data is taking appropriate steps to secure it. The agreement to produce the data need not specify all of the terms of the final arrangement between the parties or a mechanism to resolve the terms.

If you and other registrants together are generating or submitting requested data as a task force or consortium, a representative of the group should request a Joint Data Submitter Number, as part of your 90-day response. The request must include the following information:

a. A list of the members of the consortium;
b. The name and address of the designated representative of the consortium, with whom EPA will correspond concerning the data;
c. Identity of the Registration Standard containing the data requirement;
d. A list of the products affected (from all members of the consortium); and
e. Identification of the specific data that the consortium will be generating or submitting.

The Agency will assign a number to the consortium, which should be used on all data submittals by the consortium.

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

In order to qualify for this method, you must:

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

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

[Your company name] offers to share in the burden of producing the data required pursuant to FIFRA sec.

3(c)(2)(B) in the [name of active ingredient] Registration Standard upon terms to be agreed or failing agreement to be bound by binding arbitration as provided by FIFRA section 3(c)(2)(B)(iii).

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

In addition, the other registrant must fulfill its commitment to develop and submit the data as required by this Notice in a timely manner. If the other registrant fails to develop the data or for some other reason would be subject to suspension, your registration as well as that of the other registrant will normally be subject to initiation of suspension proceedings, unless you commit to submit and submit the required data in the specified timeframe. In such cases, the Agency generally will not grant a time extension for submitting the data.

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

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

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

E. Registrant Requests Regarding Data Requirements and Agency Responses

All requests for modification of data requirements (inapplicability, waiver), approval of protocols or protocol

changes, or time extensions must be submitted in writing. The original requirement remains in effect unless the Agency has notified you in writing that it has agreed to a change in the requirement. While being considered by the Agency, such requests for changes in the requirements do not alter the original requirements or extend the time allowed for meeting the requirement.

F. Test Protocols and Standards

All studies required under this Notice must be conducted in accordance with test standards outlined in the Pesticide Assessment Guidelines, unless other protocol or standards are approved for use by the Agency in writing. All testing must be conducted in accordance with applicable Good Laboratory Practices regulations in 40 CFR Part 160.

The Pesticide Assessment Guidelines, which are referenced in the Data Tables, are available from the National Technical Information Service (NTIS), Attn: Order Desk, 5285 Port Royal Road, Springfield, VA 22161 (tel: 703-487-4650).

Protocols approved by the Organization for Economic Cooperation and Development (OECD) are also acceptable if the OECD-recommended test standards conform to those specified in the Pesticide Data Requirements regulation (Part 158.70). Please note, however, that certain OECD standards (such as test duration, selection of test species, and degradate identification which are environmental fate requirements) are less restrictive than those in the EPA Assessment Guidelines listed above. When using the OECD protocols, they should be be modified as appropriate so that the data generated by the study will satisfy the requirements of Part 158. Normally, the Agency will not extend deadlines for complying with data requirements when the studies were not conducted in accord with acceptable standards. The OECD protocols are available from OECD, 1750 Pennsylvania Avenue, N.W., Washington, D.C. 20006.

G. Procedures for requesting a change in test protocol.

If you will generate the required data and plan to use test procedures which deviate from EPA's Pesticide Assessment Guidelines or the Reports of Expert Groups to the Chemicals Group, Organization for Economic Cooperation and Development (OECD) Chemicals Testing Programme, you must submit for EPA approval the protocols you propose to use.

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

conduct studies due to submittal of inappropriate protocols. The Agency will respond in writing to your request for protocol approval or change.

H. Procedures for requesting extensions of time.

If you think that you will need more time to generate the data than is allowed by EPA's schedule, you may submit a request for an extension of time.

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

The extension request should state the reasons why you believe that an extension is necessary and the steps you have taken to meet the testing deadline. Time extensions normally will not be granted due to problems with laboratory capacity or adequacy of funding, since the Agency believes that with proper planning these can be overcome. The Agency will respond in writing to any requests for extension of time.

I. Data Format and Reporting Requirements

All data submitted in response to this Notice must comply with EPA requirements regarding the reporting of data, including the manner of reporting, the completeness of results, and the adequacy of any required supporting (or raw) data, including, but not limited to, requirements referenced or included in this Notice or contained in PR Notice 86-5 (issued July 29, 1986). All studies must be submitted in the form of a final report; a preliminary report will not be considered to fulfill the submittal requirement.

J. Existing stocks provision upon suspension or cancellation.

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

1. Explanation of why an existing stocks provision is necessary, including a statement of the quantity of existing

stocks and your estimate of the time required for their sale or distribution; and

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

VII. REQUIREMENT FOR SUBMISSION OF PRODUCT-SPECIFIC DATA

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

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

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

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

VIII. REQUIREMENT FOR SUBMITTAL OF REVISED LABELING

FIFRA requires each product to be labeled with accurate, complete and sufficient instructions and precautions, reflecting the Agency's assessment of the data supporting the product and its uses. General labeling requirements are set out in 40 CFR 156.10 (see Appendix II - LABELING and SUMMARY). In addition, labeling language specific to products containing this pesticide is specified in Section IV.D of this Registration Standard. Responses to this Registration Standard must include draft labeling for Agency review.

Labeling must be either typewritten text on 8-1/2 x 11 inch paper or a mockup of the labeling suitable for storage in 8-1/2 x 11 files. Draft labeling must indicate the intended colors of the final label, clear indication of the front panel of the label, and the intended type sizes of the text.

If you fail to submit revised labeling as required, which complies with 40 CFR 156.10 and the specific instructions in Section IV.D., EPA may seek to cancel the registration of your product under FIFRA sec. 6.

IX. INSTRUCTIONS FOR SUBMITTAL

All submittals in response to this Registration Standard must be sent to the following address:

Office of Pesticide Programs
OPP Mailroom (TS-767C)
Environmental Protection Agency
401 M St., SW
Washington, D.C. 20460

Attn: 2,4-DP Registration Standard

All submittals in response to this Registration Standard are non-fee items, including 90-day responses, protocols and waiver requests, data, and revised labeling. Submittals must be clearly identified as being in response to the Registration Standard. Under no circumstances may Registration Standard responses be combined with other types of filings for which fees are required.

A. Manufacturing Use Products (MUPs) containing the subject pesticide as sole active ingredient.

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

a. Generic Data Exemption Statement (EPA Form 8580-3), if applicable, or the "FIFRA Section 3(c)(2)(B) Summary Sheet" (EPA Form 8580-1), with appropriate attachments.

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

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

2. Within 9 months from receipt of this document you must submit:

a. Application for Pesticide Registration (EPA Form 8570-1).

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

c. Three copies of draft labeling, including the container label and any associated supplemental labeling.

d. Product Specific Data Report (EPA Form 8580-4).

3. Within the times set forth in Table A, you must submit all generic data, unless you are eligible for the generic data exemption. If for any reason any test is delayed or aborted so that the schedule cannot be met, immediately notify the Agency of the problem, the reasons for the problem, and your proposed course of action.

B. Manufacturing Use Products containing the subject pesticide in combination with other active ingredients.

1. Within 90 days from receipt of this document, you must submit:

a. Generic Data Exemption Statement (EPA Form 8580-3), if applicable, or the FIFRA sec. 3(c)(2)(B) Summary Sheet, with appropriate attachments (EPA Form 8580-1).

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

2. Within 9 months of receipt of this document, you must submit:

Three copies of draft labeling, including the container label and any associated supplemental labeling.

3. Within the time frames set forth in Table A, you must submit all generic data, unless you are eligible for the generic data exemption. If for any reason any test is delayed or aborted so that the schedule cannot be met, immediately notify the Agency of the problem, the reasons for the problem, and your proposed course of action.

C. End Use Products containing the subject pesticide as sole active ingredient.

1. Within 90 days from receipt of this document, you must submit:

a. Generic data exemption Statement (EPA Form 8580-3), if applicable, or the FIFRA Section 3(c)(2)(B) Summary Sheet, with appropriate attachments (EPA Form 8580-1).

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

2. Within 9 months from receipt of this document you must submit:

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

b. Product Specific Data Report (EPA Form 8580-4), if Table C lists required product-specific data.

c. Three copies of draft labeling, including the container label and any associated supplemental labeling.

3. Within the times set forth in Table A, you must submit all generic data, unless you are eligible for the generic data exemption. If for any reason any test is delayed or aborted so that the schedule cannot be met, immediately notify the Agency of the problem, the reasons for the problem, and your proposed course of action.

D. End Use Products containing the subject active ingredient as one of multiple active ingredients

1. Within 90 days from receipt of this document, you must submit:

a. Generic data exemption Statement (EPA Form 8580-3), if applicable, or the FIFRA Section 3(c)(2)(B) Summary Sheet, with appropriate attachments (EPA Form 8580-1).

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

2. Within 9 months from the receipt of this document, you must submit:

Three copies of draft labeling, including the container label and any associated supplemental labeling.

3. Within the times set forth in Table A, you must submit all generic data, unless you are eligible for the generic data exemption. If for any reason any test is delayed or aborted so that the schedule cannot be met, immediately notify the Agency of the problem, the reasons for the problem, and your proposed course of action.

E. Intrastate Products

Applications for full Federal registration of intrastate products were required to be submitted no later than July 31, 1988. Unless an application for registration was submitted by that date, no product may be released for shipment by the producer after July 31, 1988.

I. DATA APPENDICES

GUIDE TO TABLES

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

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

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

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

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

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

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

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

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

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

A = Terrestrial, food
B = Terrestrial, non-food
C = Aquatic, food
D = Aquatic, non-food
E = Greenhouse, food
F = Greenhouse, non-food
G = Forestry

H = Domestic outdoor
I = Indoor

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

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

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

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

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

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

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

7. Timeframe for submission (Column 7). If column 6 requires that data be submitted, this column indicates when

the data are to be submitted, based on the issuance date of the Registration Standard. The timeframes are those established either as a result of a previous Data Call-In letter, or standardized timeframes established by PR Notice 85-5 (August 22, 1985).

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

Table A
Generic Data Requirements for 2,4-DP Acid and 2,4-DP[x] Compounds[1/]

Data Requirement	Test Substance	Does EPA Have Data To Safisfy This Requirement?	Bibliographic Citation[2/]	Must Additional Data Be Submitted?	Timeframe for Submission
Subpart C Product Chemistry					
Product Identity					
61-2 - Description of Beginning Materials and Manufacturing Process	TGAI	No	N/A	Yes[3/]	6 Months
61-3 - Discussion of Formation of Impurities	TGAI	No	N/A	Yes[4/]	6 Months
Analysis and Certification of Product Ingredients					
62-1 - Preliminary Analysis	TGAI	No	N/A	Yes[5/]	12 Months
Physical and Chemical Characteristics					
63-2 - Color	TGAI	No	N/A	Yes[6/]	6 Months
63-3 - Physical State	TGAI	No	N/A	Yes[6/]	6 Months
63-4 - Odor	TGAI	No	N/A	Yes[6/]	6 Months
63-5 - Melting Point	TGAI	No	N/A	Yes[6,7/]	6 Months
63-6 - Boiling Point	TGAI	No	N/A	Yes[6,8/]	6 Months
63-7 - Density, Bulk Density, or Specific Gravity	TGAI	No	N/A	Yes[6/]	6 Months
63-8 - Solubility	TGAI or PAI	No	N/A	Yes[6/]	6 Months

Table A
Generic Data Requirements for 2,4-DP Acid and 2,4-DP[x] Compounds[1/] (cont'd)

Data Requirement	Test Substance	Does EPA Have Data To Safisfy This Requirement?	Bibliographic Citation [2/]	Must Additional Data Be Submitted?	Timeframe for Submission
Subpart C Product Chemistry					
Physical and Chemical Characteristics (cont'd)					
63-9 - Vapor Pressure	TGAI or PAI	No	N/A	Yes[6/]	6 Months
63-10 - Dissociation Constant	TGAI or PAI	No	N/A	Yes[6/]	6 Months
63-11 - Octanol/Water Partition Coefficient	PAI	No	N/A	Yes[6,9/]	6 Months
63-12 - pH	TGAI	No	N/A	Yes[6,10/]	6 Months
63-13 - Stability	TGAI	No	N/A	Yes[6/]	6 Months
Other Requirements:					
64-1 - Submittal of Samples	N/A	N/A	N/A	No	

Table A
Generic Data Requirements for 2,4-DP Acid and 2,4-DP[x] Compounds[1/] (cont'd)

Subpart C Product Chemistry Footnotes

1/Requirements apply to 2,4-DP Acid as well as to the diethanolamine, dimethylamine, butoxyethyl ester, and isooctyl ester forms, where [x] refers to the substituted amine or ester.

2/Although product chemistry data may have been submitted in the past, the Agency has determined that these data must be resubmitted. New requirements have been introduced and previously submitted data must be updated. Therefore, bibliographic citations for the old data are not applicable.

3/Complete information must be provided regarding the nature of the process (batch or continuous); the relative amounts of beginning materials and the order in which they are added; the chemical equations for each intended reaction; equipment used to produce each intermediate and the final product; reaction conditions; the duration of each step of the process; purification procedures; and quality control measures. In addition, the name and address of the manufacturer, producer, or supplier of each beginning material used in the manufacture of each product must be provided, along with information regarding the properties of those materials. In order to assess the potential for contamination with halogenated dibenzo-p-dioxins and dibenzofurans, the description of the manufacturing process must also include the range of temperature conditions, pressure, and pH at each reaction step. Refer to the data requirements set forth in the Agency's June 1987 Data Call-In Notice for analytical chemistry data on halogenated dibenzo-p-dioxins/dibenzofurans in 2,4-DP. These data are due as specified in the Data Call-In Notice.

4/A detailed discussion of all impurities that are or may be present at 0.1% based on knowledge of the beginning materials, chemical reactions (intended and side) in the manufacturing process, and any contamination during and after production must be submitted. This discussion must also address the possible formation of dibenzo-p-dioxins and dibenzofurans for all products and N-nitrosamines for amines. Refer to the data requirements set forth in the Agency's June 1987 Data Call-In Notice for analytical chemistry data on halogenated dibenzo-p-dioxins/dibenzofurans in 2,4-DP. These data are due as specified in the Data Call-In Notice.

5/Five or more representative samples must be analyzed for the amount of active ingredient and each impurity for which certified limits are required. Complete validation data (accuracy and precision) must be submitted for each analytical method used.

6/Physicochemical characteristics (color, physical state, odor, melting point, boiling point, specific gravity, solubility, vapor pressure, dissociation constant, partition coefficient, pH, and stability) as required in 40 CFR 158.190 and more fully described in the Pesticide Assessment Guidelines, Subdivision D, must be submitted.

7/Data required if the technical chemical is a solid at room temperature.

8/Data required if the technical product is a liquid at room temperature.

9/Data required if the technical product is organic and nonpolar.

10/Data required if the test substance is dispersible in water.

Table A
Generic Data Requirements for 2,4-DP Acid and 2,4-DP[x] Compounds[1/]

Data Requirement	Test Substance	Use Patterns	Does EPA Have Data to Satisfy This Requirement?	Bibliographic Citation	Must Additional Data be Submitted?	Timeframe for Submission
§158.290 Environmental Fate						
DEGRADATION STUDIES - LAB:						
161-1 - Hydrolysis	TGAI or PAIRA	B,D,G,H	No		Yes	9 Months
Photodegradation						
161-2 - In Water	TGAI or PAIRA	B,D,G	No		Yes	9 Months
161-3 - On Soil	TGAI or PAIRA	G	No		Yes	9 Months
161-4 - In Air	TGAI or PAIRA		No		Reserved[2/]	
METABOLISM STUDIES - LAB:						
162-1 - Aerobic Soil	TGAI or PAIRA	B,G,H	No		Yes	27 Months
162-2 - Anaerobic Soil	TGAI or PAIRA		No		No[3/]	
162-3 - Anaerobic Aquatic	TGAI or PAIRA	D,G	No		Yes	27 Months
162-4 - Aerobic Aquatic	TGAI or PAIRA	D	No		Yes	27 Months
MOBILITY STUDIES:						
163-1 - Leaching and Adsorption/ Desorption	TGAI or PAIRA	B,D,G,H	No		Yes	12 Months
163-2 - Volatility (Lab)	TEP		No		Reserved[4/]	
163-3 - Volatility (Field)	TEP		No		Reserved[2/]	

Table A
Generic Data Requirements for 2,4-DP Acid and 2,4-DP[x] Compounds[1/] (cont'd)

Data Requirement	Test Substance	Use Patterns	Does EPA Have Data to Satisfy This Requirement?	Bibliographic Citation	Must Additional Data be Submitted?	Timeframe for Submission
§158.290 Environmental Fate						
DISSIPATION STUDIES - FIELD:						
164-1 - Soil	TEP	B,H	No		Yes	27 Months
164-2 - Aquatic (Sediment)	TEP	D,G	No		Yes	27 Months
164-3 - Forestry	TEP	G	No		Yes	27 Months
164-4 - Combination and Tank Mixes	TEP		No		No[5/]	
164-5 - Soil, Long-Term	TEP		No		No[6/]	
ACCUMULATION STUDIES:						
165-1 - Rotational Crops (Confined)	PAIRA		No		No[7/]	
165-2 - Rotational Crops (Field)	TEP		No		No[7/]	
165-3 - Irrigated Crops	TEP		No		No[7/]	
165-4 - In Fish	TGAI or PAIRA	B,D,G	No		Yes	12 Months
165-5 - In Aquatic Nontarget Organisms	TEP	D,G	No		Reserved[8/]	

Table A
Generic Data Requirements for 2,4-DP Acid and 2,4-DP[x] Compounds[1/] (cont'd)

§158.290 Environmental Fate Footnotes

1/Requirements apply to 2,4-DP Acid as well as to the diethanolamine, dimethylamine, butoxyethyl ester, and isooctyl ester forms, where [x] refers to the substituted amine or ester.
2/Photodegradation in air and field volatility studies are reserved pending results of acceptable vapor pressure data for each 2,4-DP compound.
3/Not required if anaerobic aquatic metaboblism study is conducted.
4/Laboratory volatility data are reserved pending results of acceptable vapor data for each 2,4-DP compound.
5/Tank mix data requirements are not being imposed by this Standard.
6/Soil long-term study is reserved pending results of an acceptable field dissipation study.
7/Data are not required to support current registered uses.
8/Aquatic nontarget organism studies are reserved pending results of the laboratory fish accumulation study.

Table A
Generic Data Requirements for 2,4-DP Acid and 2,4-DP[x] Compounds[1/]

Data Requirement	Test Substance	Does EPA Have Data To Safisfy This Requirement?	Bibliographic Citation	Must Additional Data Be Submitted?	Timeframe for Submission
§158.340 Toxicology					
ACUTE TESTING					
81-1 - Acute Oral Toxicity-Rat	Acid-TGAI	Yes	00116479,00116480	No	
	Amine-TGAI	No		Yes	9 Months
	Ester-TGAI	No		Yes	9 Months
81-2 - Acute Dermal Toxicity-Rabbit	Acid-TGAI	No		Yes	9 Months
	Amine-TGAI	No		Yes	9 Months
	Ester-TGAI	No		Yes	9 Months
81-3 - Acute Inhalation Toxicity - Rat	Acid-TGAI	No		Yes	9 Months
	Amine-TGAI	No		Yes	9 Months
	Ester-TGAI	No		Yes	9 Months
81-4 - Eye Irritation - Rabbit	Acid-TGAI	No		Yes	9 Months
	Amine-TGAI	No		Yes	9 Months
	Ester-TGAI	No		Yes	9 Months
81-5 - Dermal Irritation - Rabbit	Acid-TGAI	No		Yes	9 Months
	Amine-TGAI	No		Yes	9 Months
	Ester-TGAI	No		Yes	9 Months
81-6 - Dermal Sensitization - Guinea Pig	Acid-TGAI	No		Yes	9 Months
	Amine-TGAI	No		Yes	9 Months
	Ester-TGAI	No		Yes	9 Months
81-7 - Acute Delayed Neurotoxicity - Hen	Acid-TGAI	No		No[2/]	
	Amine-TGAI	No		No[2/]	
	Ester-TGAI	No		No[2/]	

Table A
Generic Data Requirements for 2,4-DP Acid and 2,4-DP[x] Compounds[1/] (cont'd)

Data Requirement	Test Substance	Does EPA Have Data To Safisfy This Requirement?	Bibliographic Citation	Must Additional Data Be Submitted?	Timeframe for Submission
§158.340 Toxicology					
SUBCHRONIC TESTING					
82-1 - 90-Day Feeding					
- Rodent	Acid-TGAI	No		No[3/]	
	Amine-TGAI	No		Yes	15 Months
	Ester-TGAI	No		Yes	15 Months
- Nonrodent (Dog)	Acid-TGAI	No		Yes	18 Months
	Amine-TGAI	No		Yes	18 Months
	Ester-TGAI	No		Yes	18 Months
82-2 - 21-Day Dermal	Acid-TGAI	No		Yes	12 Months
	Amine-TGAI	No		Yes	12 Months
	Ester-TGAI	No		Yes	12 Months
82-3 - 90-Day Dermal	Acid-TGAI	No		No[4/]	
	Amine-TGAI	No		No[4/]	
	Ester-TGAI	No		No[4/]	
82-4 - 90-Day Inhalation	Acid-TGAI	No		No[4/]	
	Amine-TGAI	No		No[4/]	
	Ester-TGAI	No		No[4/]	
82-5 - 90-Day Neurotoxicity	Acid-TGAI	No		No[5/]	
	Amine-TGAI	No		No[5/]	
	Ester-TGAI	No		No[5/]	

Table A
Generic Data Requirements for 2,4-DP Acid and 2,4-DP[x] Compounds[1/] (cont'd)

Data Requirement	Test Substance	Does EPA Have Data To Safisfy This Requirement?	Bibliographic Citation	Must Additional Data Be Submitted?	Timeframe for Submission
§158.340 Toxicology					
CHRONIC TESTING					
83-1 - Chronic Toxicity - 2 Species					
- Rodent	Acid-TGAI	Yes	00146394	No[6/]	
	Amine-TGAI	No		No[4/]	
	Ester-TGAI	No		No[4/]	
- Nonrodent (Dog)	Acid-TGAI	No		No[4/]	
	Amine-TGAI	No		No[4/]	
	Ester-TGAI	No		No[4/]	
83-2 - Oncogenicity - 2 Species					
- Rat	Acid-TGAI	Yes	00146394	No[6/]	
	Amine-TGAI	No		No[4/]	
	Ester-TGAI	No		No[4/]	

Table A
Generic Data Requirements for 2,4-DP Acid and 2,4-DP[x] Compounds[1/](cont'd)

Data Requirement	Test Substance	Does EPA Have Data To Satisfy This Requirement?	Bibliographic Citation	Must Additional Data Be Submitted?	Timeframe for Submission
§158.340 Toxicology					
CHRONIC TESTING (cont'd)					
83-2 - Oncogenicity (cont'd)					
- Mouse	Acid-TGAI	Partially	00050290	No[7/]	
	Amine-TGAI	No		No[4/]	
	Ester-TGAI	No		No[4/]	
83-3 - Teratogenicity -					
- Rabbit	Acid-TGAI	No		Yes	15 Months
	Amine-TGAI	No		Yes	15 Months
	Ester-TGAI	No		Yes	15 Months
83-4 - Reproduction - Rat	Acid-TGAI	Partially	00116484	No[8/]	
	Amine-TGAI	No		No[4/]	
	Ester-TGAI	No		No[4/]	

Table A
Generic Data Requirements for 2,4-DP Acid and 2,4-DP[x] Compounds[1/] (cont'd)

Data Requirement	Test Substance	Does EPA Have Data To Satisfy This Requirement?	Bibliographic Citation	Must Additional Data Be Submitted?	Timeframe for Submission
§158.340 Toxicology					
MUTAGENICITY TESTING					
84-2 - Gene Mutation	Acid-TGAI	Partially	00116490,00116492	Yes[9/]	9 Months
	Amine-TGAI	No		Yes	9 Months
	Ester-TGAI	No		Yes	9 Months
84-2 - Structural Chromosomal Aberration	Acid-TGAI	Yes	40581901	No	
	Amine-TGAI	No		Yes	12 Months
	Ester-TGAI	Partially	40431701	Yes[10/]	12 Months
84-2 - Other Mechanisms of Mutagenicity	Acid-TGAI	Yes	00116489,00116491	No	
	Amine-TGAI	No		Yes	12 Months
	Ester-TGAI	No		Yes	12 Months
SPECIAL TESTING					
85-1 - General Metabolism	Acid-TGAI	No		No[4/]	
	Amine-TGAI	No		No[4/]	
	Ester-TGAI	No		No[4/]	
81-X - Neurotoxicity (Dermal)	Acid-TGAI	No		Reserved[11/]	
	Amine-TGAI	No		Reserved[11/]	
	Ester-TGAI	No		Reserved[11/]	

Table A
Generic Data Requirements for 2,4-DP Acid and 2,4-DP[x] Compounds[1/] (cont'd)

§158.340 Toxicology Footnotes

1/Requirements apply to 2,4-DP Acid as well as to the diethanolamine, dimethylamine, butoxyethyl ester, and isooctyl ester forms, where [x] refers to the substituted amine or ester.
2/This test is required only for compounds which are organophosphate inhibitors of cholinesterase, or related to such inhibitors or metabolites of such inhibitors. 2,4-DP compounds are not organophosphates, therefore, a study is not required.
3/This requirement is waived for 2,4-DP Acid because there is an acceptable chronic feeding study in the rat. This study is required for the amines and esters.
4/This study is not required for the registered use patterns.
5/Since an acute neurotoxicity study is not required, this study is not required.
6/This study is not required for the registered use patterns; however, an acceptable study is available.
7/This study is not required for the registered use patterns; however, a partially acceptable study is available. It is suggested that the following information be submitted to upgrade this study:
oPurity and chemical analysis of the test agent.
oExplanation concerning how values of doses (i.e. mg/kg) were derived since no chemical analyses for stability and concentration of the test compound in the diet were carried out.
oAppropriate statistical analyses.
oExplanation of discrepancies found in mean body weight and individual animal data.
oBasis for selection of dose levels since the highest dose used in the study did not appear to reach maximum tolerated dose (MTD).
oClarification of histopathological diagnoses used; for example, for the incidence of hepatic regeneration, terms such as regenerative nodules, hypertrophic nodules and islands of regenerative hepatic nodules, all imply hyperplastic nodules.
oCorrection of discrepancies in tabulated and individual animal histopathology data. Histopathology slides should be reevaluated, using NTP nomenclature in diagnosing pathological lesions.
8/ This study is not required for the registered use patterns; however, a partially acceptable study is available. It is suggested that the following information be submitted to upgrade this study:
oPurity and chemical analysis of the test agent.
oDescription of how treatment diet was prepared; report of stability and actual content of test compound in the diet.
oHistopathology data on reproductive organs of parental females.
oGross necropsy data.
oAppropriate statistical analyses.
oReport of clinical observations.
9/The Ames assay must be repeated for 2,4-DP Acid.
10/The Agency has acceptable data for 2,4-DP butoxyethyl ester only. Data must be submitted for 2,4-DP isooctyl ester.
11/A special neurotoxicity study for 2,4-DP compounds is reserved pending the outcome of the 2,4-D neurotoxicity study.

Table A
Generic Data Requirements for 2,4-DP Acid and 2,4-DP[x] Compounds[1/]

Data Requirement	Test Substance	Use Patterns	Does EPA Have Data to Satisfy This Requirement?	Bibliographic Citation	Must Additional Data be Submitted?	Timeframe for Submission
§158.390 Reentry Protection						
132-1 - Foliar Dissipation	TEP		No		No[2/]	
132-1 - Soil Dissipation	TEP		No		No[2/]	
133-3 - Dermal Exposure	TEP		No		No[2/]	
133-4 - Inhalation Exposure	TEP		No		No[2/]	
§158.440 Spray Drift						
201-1 - Droplet Size	TEP	B,D,G	No		Yes[3/]	6 Months
201-1 - Drift Field	TEP	B,D,G	No		Yes[3/]	6 Months

1/Requirements apply to 2,4-DP Acid as well as to the diethanolamine, dimethylamine, butoxyethyl ester and isooctyl ester forms, where [x] refers to the substituted amine or ester.
2/Reentry data requirements are not being imposed under this Standard.
3/Spray drift data are required because 2,4-DP meets the phytotoxicity requirements of §158.440. The droplet spectrum study is to be performed to reflect the nozzle and other equipment types to be used in the application of 2,4-DP. The spray drift field evaluation is to be performed to reflect the application equipment, use patterns, and typical locations of use, which includes the different weather factors.

Table A
Generic Data Requirements for 2,4-DP Acid and 2,4-DP[x] Compounds[1/]

Data Requirement	Test Substance	Use Patterns	Does EPA Have Data to Satisfy This Requirement?	Bibliographic Citation	Must Additional Data be Submitted?	Timeframe for Submission
§158.490 Wildlife and Aquatic Organisms						
AVIAN AND MAMMALIAN TESTING						
71-1 - Acute Avian Oral Toxicity	Acid-TGAI	B,D,G,H	No		Yes	9 Months
	Amine-TGAI	B,D,G,H	No		Yes	9 Months
	Ester-TGAI	B,D,G,H	No		Yes[2/]	9 Months
71-2 - Avian Subacute Dietary Toxicity	Acid-TGAI	B,D,G,H	No		Yes[3/]	9 Months
	Amine-TGAI	B,D,G,H	No		Yes[3/]	9 Months
	Ester-TGAI	B,D,G,H	Partially	00068084,00072920	Yes[4/]	9 Months
71-3 - Wild Mammal Toxicity	Acid-TGAI		No		No[5/]	
	Amine-TGAI		No		No[5/]	
	Ester-TGAI		No		No[5/]	
71-4 - Avian Reproduction	Acid-TGAI		No		No[6/]	
	Amine-TGAI		No		No[6/]	
	Ester-TGAI		No		No[6/]	
71-5 - Simulated and Actual Field Testing - Mammals and Birds	Amine-TEP		No		No[5/]	
	Ester-TEP		No		No[5/]	
AQUATIC ORGANISM TESTING						
72-1 - Freshwater Fish Toxicity - Warmwater and Coldwater	Acid-TGAI	B,D,G,H	No		Yes[7/]	9 Months
	Amine-TGAI	B,D,G,H	No		Yes	9 Months
	Ester-TGAI	B,D,G,H	Partially	00068085	Yes[8/]	9 Months
	Amine-TEP		No		No[6/]	
	Ester-TEP		Yes	00063066,00077320	No[6/]	

Table A
Generic Data Requirements for 2,4-DP Acid and 2,4-DP[x] Compounds[1/] (cont'd)

Data Requirement	Test Substance	Use Patterns	Does EPA Have Data to Satisfy This Requirement?	Bibliographic Citation	Must Additional Data be Submitted?	Timeframe for Submission
§158.490 Wildlife and Aquatic Organisms						
AQUATIC ORGANISM TESTING (cont'd)						
72-2 - Acute Toxicity to Freshwater Invertebrates	Acid-TGAI	B,D,G,H	No		Yes	9 Months
	Amine-TGAI	B,D,G,H	No		Yes	9 Months
	Ester-TGAI	B,D,G,H	Partially	00073762	Yes[9/]	9 Months
	Amine-TEP		No		No[6/]	
	Ester-TEP		Yes	00077321	No[6/]	
72-3 - Acute Toxicity to Estuarine and Marine Organisms	Acid-TGAI		No		No[6/]	
	Amine-TGAI		No		No[6/]	
	Ester-TGAI		No		No[6/]	
72-4 - Fish Early Life Stage and Aquatic Invertebrate Life-Cycle	Acid-TGAI	B,D,G	No		Reserved[10/]	
	Amine-TGAI	B,D,G	No		Reserved[10/]	
	Ester-TGAI	B,D,G	No		Reserved[10/]	
72-5 - Fish Life-Cycle	Acid-TGAI	B,D,G	No		Reserved[10/]	
	Amine-TGAI	B,D,G	No		Reserved[10/]	
	Ester-TGAI	B,D,G	No		Reserved[10/]	
72-6 - Aquatic Organism Accumulation	Acid-TGAI	B,D,G	No		Reserved[10/]	
	Amine-TGAI	B,D,G	No		Reserved[10/]	
	Ester-TGAI	B,D,G	No		Reserved[10/]	
72-7 - Simulated and Actual Field Testing	Amine-TEP	B,D,G	No		Reserved[10/]	
	Ester-TEP	B,D,G	No		Reserved[10/]	

Table A
Generic Data Requirements for 2,4-DP Acid and 2,4-DP[x] Compounds[1/](cont'd)

§158.490 Wildlife and Aquatic Organisms Footnotes

1/Requirements apply to 2,4-DP Acid as well as to the diethanolamine, dimethylamine, butoxyethyl ester, and isooctyl ester forms, where [x] refers to the substituted amine or ester.
2/Studies required for 2,4-DP butoxyethyl ester only. Requirement is waived for 2,4,-DP isooctyl ester based on use pattern and formulation type (non-granular).
3/Study is required on an upland game bird (bobwhite quail) or waterfowl (mallard duck).
4/The Agency has acceptable data for 2,4-DP butoxyethyl ester only.
5/Available data indicate low toxicity to avian species and do not support the need for these data.
6/Data are not required to support current registered uses.
7/Study is required on a warmwater fish (bluegill) or coldwater fish (rainbow trout).
8/Both studies are required for 2,4-DP isooctyl ester. A bluegill study must be submitted and dose/mortality information provided for the rainbow trout study for 2,4-DP butoxyethyl ester.
9/Study required for 2,4-DP isooctyl ester. The percentage active ingredient of test material and pH values must be submitted for the 2,4-DP butoxyethyl ester Daphnia study.
10/Reserved pending results of the acute studies and such environmental fate data as photolysis and hydrolysis.

Table A
Generic Data Requirements for 2,4-DP Acid and 2,4-DP[x] Compounds[1/]

Data Requirement	Test Substance	Use Patterns	Does EPA Have Data to Satisfy This Requirement?	Bibliographic Citation	Must Additional Data be Submitted?	Timeframe for Submission
§158.540 Plant Protection						
121-1 - TARGET AREA PHYTOTOXICITY	TEP		No		No	
NONTARGET AREA PHYTOTOXICITY						
TIER I						
122-1 - Seed Germination/Seedling Emergence	TGAI		No		No[2/]	
122-1 - Vegetative Vigor	TGAI		No		No[2/]	
122-2 - Aquatic Plant Growth	TGAI		No		No[2/]	
TIER II						
123-1 - Seed Germination/Seedling Emergence	TGAI	B,D,G	No		Yes	9 Months
123-1 - Vegetative Vigor	TGAI	B,D,G	No		Yes	9 Months
123-2 - Aquatic Plant Growth	TGAI	B,D,G	No		Yes[3/]	9 Months
TIER III						
124-1 - Terrestrial Field	TEP	B,D,G	No		Reserved[4/]	
124-2 - Aquatic Field	TEP	B,D,G	No		Reserved[4/]	

1/Requirements apply to 2,4-DP Acid as well as to the diethanolamine, dimethylamine, butoxyethyl ester, and isooctyl ester forms, where [x] refers to the substituted amine or ester.
2/Data are available in the open literature on the phytotoxicity of the phenoxys to broadleaf plants; therefore, testing should be conducted at the Tier II level to establish EC_{50} values.
3/Drainage ditchbank use will require submission of data for 5 species of aquatic plants. For other uses, only data for the algae Selenastrum capricornutum is required.
4/Reserved pending results of Tier II

Table A
Generic Data Requirements for 2,4-DP Acid and 2,4-DP[x] Compounds[1/]

Data Requirement	Test Substance	Use Patterns	Does EPA Have Data to Satisfy This Requirement?	Bibliographic Citation	Must Additional Data be Submitted?	Timeframe for Submission
§158.590 Nontarget Insect						
NONTARGET INSECT TESTING - POLLINATORS						
141-1 - Honey Bee Acute Contact Toxicity	TGAI	B,G	No		Yes	9 Months
141-2 - Honey Bee - Toxicity of Residues on Foliage	TEP	B,G	No		Reserved[2/]	
141-4 - Honey Bee Subacute Feeding Study					Reserved[3/]	
141-5 - Field Testing for Pollinators	TEP	B,G	No		Reserved[2/]	
NONTARGET INSECT TESTING - AQUATIC INSECTS						
142-1 - Acute Toxicity to Aquatic Insects					Reserved[4/]	
142-1 - Aquatic Insect Life-Cycle Study					Reserved[4/]	
142-3 - Simulated or Actual Field Testing for Aquatic Insects					Reserved[4/]	

Table A
Generic Data Requirements for 2,4-DP Acid and 2,4-DP[x] Compounds[1/]

Data Requirement	Test Substance	Use Patterns	Does EPA Have Data to Satisfy This Requirement?	Bibliographic Citation	Must Additional Data be Submitted?	Timeframe for Submission
§158.590 Nontarget Insect						
NONTARGET INSECT TESTING - AQUATIC INSECTS (cont'd)						
143-1 thru 143-3 - Nontarget Insect Testing - Predators and Parasites					Reserved[4/]	

1/Requirements apply to 2,4-DP Acid as well as to the diethanolamine, dimethylamine, butoxyethyl ester, and isooctyl ester forms, where [x] refers to the substituted amine or ester.
2/Reserved pending evaluation of data from acute contact test.
3/Reserved pending development of test methodology.
4/Reserved pending Agency decision as to whether the data requirement should be established.

Table B
Product Specific Data Requirements for Manufacturing-Use Products Containing 2,4-DP Acid and 2,4-DP[x]Compounds[1/]

Data Requirement	Test Substance	Does EPA Have Data To Safisfy This Requirement?	Bibliographic Citation[2/]	Must Additional Data Be Submitted?	Timeframe for Submission
Subpart C Product Chemistry					
Product Identity					
61-1 - Product Identity and Disclosure of Ingredients	MP	No	N/A	Yes[3/]	6 Months
61-2 - Description of Beginning Materials and Manufacturing Process	MP	No	N/A	Yes[4/]	6 Months
61-3 - Discussion of Formation of Impurities	MP	No	N/A	Yes[5/]	6 Months
Analysis and Certification of Product Ingredients					
62-1 - Preliminary Analysis	MP	No	N/A	Yes[6/]	12 Months
62-2 - Certification of Limits	MP	No	N/A	Yes[7/]	12 Months
62-3 - Analytical Methods to Verify Certified Limit	MP	No	N/A	Yes[8/]	12 Months
Physical and Chemical Characteristics					
63-2 - Color	MP	No	N/A	Yes[9/]	6 Months
63-3 - Physical State	MP	No	N/A	Yes[9/]	6 Months
63-4 - Odor	MP	No	N/A	Yes[9/]	6 Months

Table B
Product Specific Data Requirements for Manufacturing-Use Products Containing 2,4-DP Acid and 2,4-DP[x]Compounds[1/] (cont'd)

Data Requirement	Test Substance	Does EPA Have Data To Safisfy This Requirement?	Bibliographic Citation[2/]	Must Additional Data Be Submitted?	Timeframe for Submission
Subpart C Product Chemistry					
Physical and Chemical Characteristics (cont'd)					
63-7 - Density, Bulk Density, or Specific Gravity	MP	No	N/A	Yes[9/]	6 Months
63-12 - pH	MP	No	N/A	Yes[9,10/]	6 Months
63-14 - Oxidizing or Reducing Action	MP	No	N/A	Yes[9,11/]	6 Months
63-15 - Flammability	MP	No	N/A	Yes[9,12/]	6 Months
63-16 - Explodability	MP	No	N/A	Yes[9,13/]	6 Months
63-17 - Storage Stability	MP	No	N/A	Yes[9/]	15 Months
63-18 - Viscosity	MP	No	N/A	Yes[9,14/]	6 Months
63-19 - Miscibility	MP	No	N/A	Yes[9,15/]	6 Months
63-20 - Corrosion Characteristics	MP	No	N/A	Yes[9/]	15 Months
Other Requirements					
64-1 - Submittal of Samples	N/A	N/A	N/A	No	

Table B

Product Specific Data Requirements for Manufacturing-Use Products Containing 2,4-DP Acid and 2,4-DP[x] Compounds[1/]

Subpart C Product Chemistry Footnotes

1/Requirements apply to 2,4-DP Acid as well as to the diethanolamine, dimethylamine, butoxyethyl ester, and isooctyl ester forms, where [x] refers to the substituted amine or ester.

2/Although product chemistry data may have been submitted in the past, the Agency has determined that these data must be resubmitted. New requirements have been introduced and previously submitted data must be updated. Therefore, bibliographic citations for the old data are not applicable.

3/The chemical name, nominal concentration, Chemical Abstracts (CAS) Registry Number, and purpose of the active ingredient and each intentionally added inert must be provided. For the active ingredients, the following must also be provided: The product's common and trade names; the molecular, structural, or empirical formulas; the molecular weight or range; and any experimental or internally assigned company code numbers.

4/Complete information must be provided regarding the nature of the process (batch or continuous); the relative amounts of beginning materials and the order in which they are added; the chemical equations for each intended reaction, equipment used to produce each intermediate and the final product; reaction conditions; the duration of each step of the process; purification procedures and quality control measures. In addition, the name and address of the manufacture producer, or supplier of each beginning material used in the manufacture of each product must be provided, along with information regarding the properties of those materials. In order to assess the potential for contamination with halogenated dibenzo-p-dioxins and dibenzofurans, the description of the manufacturing process must also include the range of temperature conditions, pressure, and pH at each reaction step. Refer to the data requirements set forth in the Agency's June 1987 Data Call-In Notice for analytical chemistry data on halogenated dibenzo-p-dioxins/dibenzofurans in 2,4-DP. These data are due as specified in the Data Call-In Notice.

5/A detailed discussion of all impurities that are or may be present at 0.1% based on knowledge of the beginning materials, chemical reactions (intended and side) in the manufacturing process, and any contamination during and after production must be submitted. This discussion must also address the possible formation of dibenzo-p-dioxins and dibenzofurans for all products and N-nitrosamines for amines. Refer to the data requirements set forth in the Agency's June 1987 Data Call-In Notice for analytical chemistry data on halogenated dibenzo-p-dioxins/dibenzofurans in 2,4-DP. These data are due as specified in the Data Call-In Notice.

6/Five or more representative samples must be analyzed for the amount of active ingredient and each impurity for which certified limits are required. Complete validation data (accuracy and precision) must be submitted for each analytical method used. All nitrosamines must be identified and quantified in six samples of each amine; two samples must be analyzed shortly after production, 3 months after production, and 6 months after production. A method sensitive to 1 ppm of N-nitroso contaminants must be used. An upper limit must be provided (and certified) for all nitrosamines found. Certifications should be submitted on EPA Form 8570-4 (Rev. 2-85).

7/Upper and lower limits for the active ingredient and each intentionally added inert, and upper limits for each impurity present at 0.1% (w/w) and each "toxicologically significant" impurity present at < 0.1% (w/w) must be provided and certified. Also, an explanation of how each certified limit was established must provided (e.g., sample analyses using validated analytical procedures, quantitative estimates based on amounts of ingredients used, etc.). Limits for impurities not associated with the active ingredient need to be provided only if they are considered to be of toxicological significance, regardless of the concentration at which they are present. Certification must be submitted on EPA Form 8570-4 (Rev. 2-85).

Table B
Product Specific Data Requirements for Manufacturing-Use Products Containing 2,4-DP Acid and 2,4-DP[x]Compounds[1/]

Subpart C Product Chemistry Footnotes (cont'd)

8/Analytical methods must be provided to determine the active ingredient, and each "toxicologically significant" impurity and intentionally added inert for which certified limits are required. Each method must be accompanied by validation studies indicating its accuracy and precision. These methods must be suitable for enforcement of certified limits.

9/Physicochemical characteristics (color, physical state, odor, melting point, boiling point, specific gravity, solubility, vapor pressure, dissociation constant, partition coefficient, pH, and stability) as required in 40 CFR 158.190 and more fully described in the Pesticide Assessment Guidelines, Subdivision D, must be submitted.

10/Data required if test substance is dispersible in water.

11/Data required if product contains oxidizing or reducing agents.

12/Data required if product contains combustible liquids.

13/Data required if product is potentially explosive.

14/Data required if product is a liquid.

15/Data required if product is a liquid and is to be diluted with petroleum solvents.

Table B

Product Specific Data Requirements for Manufacturing-Use Products Containing 2,4-DP Acid and 2,4-DP[x]Compounds[1/]

Data Requirement	Test Substance	Does EPA Have Data To Safisfy This Requirement?	Bibliographic Citation	Must Additional Data Be Submitted?	Timeframe for Submission
§158.340 Toxicology					
ACUTE TESTING					
81-1 - Acute Oral Toxicity - Rat	MP	Partially	00116479, 00116480	Yes[2/]	6 Months
82-1 - Acute Dermal Toxicity	MP	No		Yes	6 Months
81-3 - Acute Inhalation Toxicity - Rat	MP	No		Yes	6 Months
81-4 - Primary Eye Irritation - Rabbit	MP	No		Yes	6 Months
81-5 - Primary Dermal Irritation - Rabbit	MP	No		Yes	6 Months
81-6 - Dermal Sensitization - Guinea Pig	MP	No		Yes	6 Months

1/Requirements apply to 2,4-DP Acid as well as the diethanolamine, dimethylamine, butoxyethyl ester, and isooctyl ester forms, where [x] refers to the substituted amine or ester.

2/The Agency has acceptable data for 2,4-DP acid only. Data must be submitted for the amines and esters.

II. LABELING APPENDICES

LABEL CONTENTS

40 CFR 156.10 requires that certain specific labeling statements appear at certain locations on the label. This is referred to as format labeling. Specific label items listed below are keyed to the table at the end of this Appendix.

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

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

Item 3. NET CONTENTS - A net contents statement is required on all labels or on the container of the pesticide. The preferred location is the bottom of the front panel immediately above the company name and address, or at the end of the label test. The net contents must be expressed in the largest suitable unit, e.g., "1 pound 10 ounces" rather than "26 ounces." In addition to English units, net contents may be expressed in metric units. [40 CFR 156.10(d)]

Item 4. EPA REGISTRATION NUMBER - The registration number assigned to the pesticide product must appear on the label, preceded by the phrase "EPA Registration No.," or "EPA Reg. No." The registration number must be set in type of a size and style similar to other print on that part of the label on which it appears and must run parallel to it. The registration number and the required identifying phrase must not appear in such a manner as to suggest or imply recommendation or endorsement of the product by the Agency. [40 CFR 156.10(e)]

Item 5. EPA ESTABLISHMENT NUMBER - The EPA establishment number, preceded by the phrase "EPA Est." is the final establishment at which the product was produced, and may appear in any suitable location on the label or immediate container. It must also appear on the wrapper or outside container of the package if the EPA establishment number on the immediate container cannot be clearly read through such wrapper or container. [40 CFR 156.10(f)]

Item 6A. INGREDIENTS STATEMENT - An ingredients statement is required on the front panel. The ingredients statement must contain the name and percentage by weight of each active ingredient and the total percentage by weight of all inert ingredients. The preferred location is immediately below the product name. The ingredients statement must run parallel with,

and be clearly distinguished from, other text on the panel. It must not be placed in the body of other text. [40 CFR 156.10(g)]

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

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

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

Item 7A. CHILD HAZARD WARNING STATEMENT - The statement "Keep Out of Reach of Children" must be located on the front panel above the signal word except where contact with children during distribution or use is unlikely.
[40 CFR 156.10(h)(1)(ii)]

Item 7B. SIGNAL WORD - The signal word (DANGER, WARNING, or CAUTION) is required on the front panel immediately below the child hazard warning statement. [40CFR 156.10(h)(1)(i)]

Item 7C. SKULL & CROSSBONES AND WORD "POISON" - On products assigned a toxicity Category I on the basis of oral, dermal, or inhalation toxicity, the word "Poison" shall appear on the label in red on a background of distinctly contrasting color and the skull and crossbones shall appear in immediate proximity to the word POISON. [40 CFR 156.10(h)(1)(i)

Item 7D. STATEMENT OF PRACTICAL TREATMENT - A statement of practical treatment (first aid or other) shall appear on the label of pesticide products in toxicity Categories I, II, and III. [40 CFR 156.10(h)(1)(iii)]

Item 7E. REFERRAL STATEMENT - The statement "see Side (or Back) Panel for Additional Precautionary Statements" is required on the front panel for all products, unless all required precautionary statements appear on the front panel.
[40 CFR 156.10(h)(1)(iii)]

Item 8. SIDE/BACK PANEL PRECAUTIONARY LABELING - The precautionary statements listed below must appear together on the label under the heading "PRECAUTIONARY STATEMENTS." The preferred location is at the top of the side or back panel preceding the directions for use, and it is preferred that these statements be surrounded by a block outline. Each of the three hazard warning statements must be headed by the appropriate hazard title. [40 CFR 156.10(h)(2)]

Item 8A. HAZARD TO HUMANS AND DOMESTIC ANIMALS - Where a hazard exists to humans or domestic animals, precautionary statements are required indicating the particular hazard, the route(s) of exposure and the precautions to be taken to avoid accident, injury or damage. [40 CFR 156.10(h)(2)(i)]

Item 8B. ENVIRONMENTAL HAZARD - Where a hazard exists to non-target organisms excluding humans and domestic animals, precautionary statements are required stating the nature of the hazard and the appropriate precautions to avoid potential accident, injury, or damage. [40 CFR 156.10(h)(2)(ii)]

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

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

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

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

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

Classification Labeling Requirements

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

1. All uses restricted.

   a. The statement "Restricted Use Pesticide" must appear at the top of the front panel of the label. The statement must be set in type of the same minimum size as required for human hazard signal word (see table in 40 CFR 156.10(h)(1)(iv).

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

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

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

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

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

simultaneously. Note that the products will be assigned separate registration numbers.

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

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

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

Item 10C. DIRECTIONS FOR USE - Directions for use must be stated in terms which can be easily read and understood by the average person likely to sue or to supervise the use of the pesticide. When followed, directions must be adequate to protect the public from fraud and from personal injury and to prevent unreasonable adverse effects on the environment. [40 CFR 156.10]

COLLATERAL LABELING

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

LABELING REQUIREMENTS OF THE FIFRA, AS AMENDED

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

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

ITEM	LABEL ELEMENT	APPLICABILITY OF REQUIREMENT	PLACEMENT ON LABEL		COMMENTS
			REQUIRED	PREFERRED	
8C	Physical or chemical hazards	All pressurized products, others with flash points under 150°F	None	Same as above	Refer to Appendix II guide PHYS/CHEM
9A	Restricted block	All restricted products	Top center of front panel	Preferably blocked	Includes a statement of the terms of restriction. The words "RESTRICTED USE PESTICIDE" must be same type size as signal word.
9B	Misuse statement	All products	Immediately following heading of directions for use		Required statement is: "It is a violation of Federal law to use this product in a manner inconsistent with its labeling."
10A	Reentry statement	PR Notice 83-2 or as determined by the Agency	In the directions for use	Immediately after misuse statement	
10B	Storage and disposal block	All products	In the directions for use	Immediately before specific directions for use or at the end of directions for use	Must be set apart and clearly distinguishable from from other directions for use. Refer to Appendix II guides STOR, CONT/DIS, and PEST/DIS for further information and required statements.
10C	Directions for use	All products	None	None	May be in metric as well as U.S. units

§156.10 Labeling Requirements for Pesticides and Devices.

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

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

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

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

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

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

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

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

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

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

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

(ii) All required label text must:

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

(B) Appear on a clear contrasting background; and

(C) Not be obscured or crowded.

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

(4) Placement of Label--(i) General. The label shall appear on or be securely attached to the immediate container of the

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

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

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

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

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

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

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

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

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

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

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

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

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

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

(A) "Contains all natural ingredients";

(B) "Among the least toxic chemicals known"

(C) "Pollution approved"

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

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

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

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

(i) Is false or misleading, or

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Size of label front panel in square inches	Points	
	Required signal word, all capitals	"Keep out of reach of Children"
5 and under	6	6
Above 5 to 10	10	6
Above 10 to 15	12	8
Above 15 to 30	14	10
Over 30	18	12

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

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

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

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

(ii) Environmental hazards. Where a hazard exists to non-target organisms excluding humans and domestic animals, precautionary statements are required stating the nature of the hazard and the appropriate precautions to avoid potential accident, injury or

damage. Examples of the hazard statements and the circumstances under which they are required follow:

(A) If a pesticide intended for outdoor use contains an active ingredient with a mammalian acute oral LD_{50} of 100 or less, the statement "This Pesticide is Toxic to Wildlife" is required.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

(B) Rotational crop restrictions.

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

(D) [Reserved]

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

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

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

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

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

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

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

(k) Advertising. [Reserved]

[40 FR 28268, July 3, 1975; 40 FR 32329, Aug. 1, 1975; 40 FR 38571, Aug. 21, 1975, as amended at 43 FR 5786, Feb. 9, 1978; amended at 53 FR 15952, May 4, 1988]

PHYSICAL-CHEMICAL HAZARDS

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

STORAGE INSTRUCTIONS FOR PESTICIDES

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

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

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

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

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

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

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

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

PESTICIDE DISPOSAL INSTRUCTIONS

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

1. The labels of all products, except domestic use, must contain the statement:

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

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

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

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

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

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

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

5. Products intended for domestic use only must bear the following disposal statement:

"Securely wrap original container in several layers of newspaper and discard in trash."

CONTAINER DISPOSAL INSTRUCTIONS

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

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

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

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

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

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

III. BIBLIOGRAPHY APPENDICES

Guide to Use of This Bibliography

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

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

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

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

   a. Author. Whenever the Agency could confidently identify one, the Agency has chosen to show a personal author. When no individual was identified, the Agency has shown an identifiable

laboratory or testing facility as author. As a last resort, the Agency has shown the first submitter as author.

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

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

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

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

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

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

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

OFFICE OF PESTICIDE PROGRAMS
REGISTRATION STANDARD BIBLIOGRAPHY
Citations Considered to be Part of the Data Base Supporting
Registrations Under the 2,4-DP Standard

MRID CITATION

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00063066 Vilkas, A.G.; Seminara, J. (1980) The Acute Toxicity of Weedone 2,4-DP to the Rainbow Trout, Salmo gairdneri Richardson: UCCES Project No. 11504-14-15. (Unpublished study received Nov 26, 1980 under 264-231; submitted by Union Carbide Agricultural Products Co., Inc., Ambler, Pa.; CDL:243820-A)

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00072920 Fink, R. (1976) Final Report: Eight-Day Dietary LC50--Mallard Duck: Project No. 103-158. (Unpublished study received Nov 22, 1976 under 464-530; prepared by Wildlife International, Ltd., submitted by Dow Chemical U.S.A., Midland, Mich.; CDL:226965-K)

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OFFICE OF PESTICIDE PROGRAMS
REGISTRATION STANDARD BIBLIOGRAPHY
Citations Considered to be Part of the Data Base Supporting
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MRID CITATION

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IV. FORMS APPENDICES

EPA Form 8580-1

OMB Approval No. 2070-0057
Expires 11/30/89

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

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

☐ 1. I will submit data in a timely 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:

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

NAME OF OTHER REGISTRANT

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

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

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

REGISTRANT'S AUTHORIZED REPRESENTATIVE	SIGNATURE	DATE

EPA Form 8580-6

OMB Approval No. 2070-0057
Expires 11/30/89

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

OMB Approval No. 2070-0057
Expires 11/30/89

PRODUCT SPECIFIC DATA REPORT

EPA Reg. No._____ Date_____

Guidance Document for_____

Registration Guideline No.	Name of Test	Test not required for my product listed above (check below)	I am complying with data requirements by Citing MRID Number or EPA Accession Number	Submitting Data (Attached)	(For EPA Use Only) MRID Numbers Assigned
Subpart C 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				

EPA Form 8580-4

OMB Approval No. 2070-0057
Expires 11/30/89

PRODUCT SPECIFIC DATA REPORT (cont'd)

EPA Reg. No._____ Date_____

Guidance Document for_____

Registration Guideline No.	Name of Test	Test not required for my product listed above (check below)	I am complying with data requirements by Citing MRID Number or EPA Accession Number	Submitting Data (Attached)	(For EPA Use Only) MRID Numbers Assigned
Subpart C PRODUCT CHEMISTRY (cont'd)					
63-13	Stability				
63-14	Oxidizing/reducing reaction				
63-15	Flammability				
63-16	Explodability				
63-17	Storage stability				
63-18	Viscosity				
63-19	Miscibility				
63-20	Corrosion characteristics				
63-21	Dielectric breakdown voltage				
Sec. 158.340 TOXICOLOGY					
81-1	Acute oral toxicity, rat				
81-2	Acute dermal toxicity, rabbit				
81-3	Acute inhalation, toxicity, rat				
81-4	Primary eye irritation, rabbit				
81-5	Primary dermal irritation				
81-6	Dermal sensitization,				
81-7	Acute Delayed neurotoxicity, hen				

EPA Form 8580-4 (cont'd)

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

GENERIC DATA EXEMPTION STATEMENT

EPA Product Registration Number:_____
Registrant's Name and Address: _____
_____

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

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

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

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

The CSF dated _____ on file with EPA is complete, current and accurate and contains the information requested on the current CSF Form 8570-4. The registered source(s) of the above named active ingredient in my product(s) is/are _____ and their registration number(s) is/are _____.

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

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

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

Registrant's authorized representative:_____
(Signature

Dated: _____ _____
(Typed)2

EPA Form 8570-27