



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

SEP 26 1996

OFFICE OF
PREVENTION, PESTICIDES AND
TOXIC SUBSTANCES

MEMORANDUM

SUBJECT: Oxyfluorfen. List B Reregistration Case 2490. Chemical No. 111601.
Product and Residue Chemistry Chapters for the Reregistration Eligibility
Decision. CBRS Nos. 17193 & 17453. DP Barcodes: D226225 & D228704.

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TO: Paula Deschamp, Section Head
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Attached are the Product and Residue Chemistry Chapters for the Oxyfluorfen RED. The chapters were assembled by Dynamac Corporation under the supervision of CBRS, HED. The data assessment has undergone secondary review in the branch and has been revised to reflect Agency policies.

Product Chemistry

Additional generic and product-specific data are required for the Rohm & Haas 70% T/TGAI concerning GLNs 830.1550, 830.1700, 830.1750, 830.1800, 830.7300, 830.7840, 830.7950, and 830.7550. Provided that the registrant submits the data required in the attached data summary table for the 70% T and either certifies that the suppliers of beginning materials and the manufacturing process for the oxyfluorfen technical product have not changed since the last comprehensive product chemistry review or submits a complete updated package, CBRS has no objections to the reregistration of oxyfluorfen with respect to product chemistry data requirements.



Residue Chemistry

The existing data base is essentially complete. The residue to be regulated is oxyfluorfen *per se*. The qualitative nature of the residue in plants and livestock has been adequately identified/characterized. Adequate analytical methods exist in PAM Vol. II for data collection and tolerance enforcement for residues of oxyfluorfen and its metabolites containing the diphenyl ether linkage. FDA Multiresidue Methods exist for data collection and tolerance enforcement of oxyfluorfen *per se* in plant commodities. This method can be used to determine residues of oxyfluorfen *per se* in plants until a proposed enforcement method to determine oxyfluorfen *per se* in plants is submitted. However, enforcement methods for the determination of oxyfluorfen *per se* in both plant and animal commodities are required. Adequate magnitude of the residue in plants and animals, processed food/feed, and storage stability data exist. Magnitude of the residue data for cotton gin byproducts are required. A coffee processing study remains outstanding. Modifications to the product label(s) are required regarding fallow bed uses and rotational crop restrictions.

The tolerance expression includes oxyfluorfen *per se*. It is the only regulated residue as per the HED Metabolism Committee decision. Changes in and revocation of existing tolerances are based on a tolerance reassessment resulting from the reregistration process.

Residue data for onions (dry bulb) can be translated to and used in support of garlic. The registrant must propose a tolerance for garlic supported by residue data for onions (dry bulb). The registrant must either conduct field trials in support of oxyfluorfen uses on soybean forage and hay or amend the product label(s) to restrict feeding and grazing on these commodities.

Dietray Exposure/Risk Assessment

Oxyfluorfen is considered a Group C carcinogen (Q* is 0.128 mg/kg/day). The Rfd is 0.003 mg/kg/day based on a NOEL of 0.3 mg/kg/day from a mouse feeding study showing necrosis and hyperplastic nodules in the liver. The latest cancer risk (3/20/90) was 1.5×10^{-6} using anticipated residues and percent crop treated.

Attachments:

cc: Mark Wilhite/Bruce Sidwell-PM 53
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RF, SF, List B File, C. Eiden, Circ.

RDI: R. Perfetti 09/26/96

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OXYFLUORFEN

REREGISTRATION ELIGIBILITY DECISION

RESIDUE CHEMISTRY CONSIDERATIONS

Shaughnessy No. 111601; Case 2490

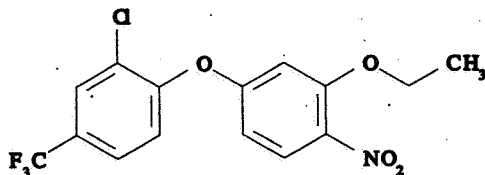
(CBRS No. 17193; DP Barcode D226225)

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OXYFLUORFEN



REREGISTRATION ELIGIBILITY DECISION

RESIDUE CHEMISTRY CONSIDERATIONS

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(CBRS No. 17193; DP Barcode D226225)

INTRODUCTION

Oxyfluorfen [2-chloro-1-(3-ethoxy-4-nitrophenoxy)-4-(trifluoromethyl)benzene] is a pre- and postemergence herbicide registered for use on a variety of field crops, vegetables, and fruit trees. Oxyfluorfen is sold in the United States by its basic producer, Rohm and Haas Company, under the trade name Goal®. The 1.6 or 2 lb/gal emulsifiable concentrate (EC) is the only oxyfluorfen formulation class registered for food/feed use. This formulation may be applied to food/feed crops as a directed spray or broadcast application during dormant or vegetative growth stages using ground or aerial equipment.

REGULATORY BACKGROUND

The Chemistry Branch completed the Oxyfluorfen Phase 4 Review on 3/22/91. An Oxyfluorfen Data-Call-In (DCI) Notice was subsequently issued on 6/12/91. The Chemistry Branch has also identified residue chemistry studies for oxyfluorfen that were generated by Craven Laboratories. A DCI Notice was issued on 7/20/93 requesting end-use producer(s) of oxyfluorfen to conduct new field trials to replace residue data supplied by Craven Laboratories. Several residue chemistry studies have been submitted in response to the Oxyfluorfen DCI Notices. The information contained in this document outlines and summarizes the residue chemistry Assessments with respect to the reregistration of oxyfluorfen.

Tolerances for residues of oxyfluorfen in/on plant and animal commodities [40 CFR §180.381 (a) and (b)] and processed commodities [40 CFR §185.4600] were previously expressed in terms of the combined residues of oxyfluorfen and its metabolites containing the diphenyl ether linkage. The tolerance expression, however, was recently amended (60 FR 62330, 12/6/95) to delete the metabolites containing the diphenyl ether linkage; it is now expressed in

terms of oxyfluorfen *per se*. The Agency has determined that it is no longer necessary to regulate the oxyfluorfen metabolites containing the diphenyl ether linkage because these compounds were not identified in plants, and oxyfluorfen *per se* was the major residue found in meat, meat byproducts, fat, milk, and eggs. All animal commodity tolerances are established at 0.05 ppm, while plant commodity tolerances range from 0.05 ppm to 0.1 ppm; the food additive tolerances are established at 0.25 ppm. An adequate method is available for the enforcement of tolerances as currently defined. No Codex MRLs have been established for oxyfluorfen.

The Agency has recently updated the list of raw agricultural and processed commodities and feedstuffs derived from crops (Table I, OPPTS 860.1000). As a result of changes to Table I, additional oxyfluorfen residue data are now required for some commodities; these data requirements have been incorporated into this document. These new data requirements will be imposed at the issuance of the Oxyfluorfen RED but should not impinge on the reregistration eligibility decisions for oxyfluorfen. The need for additional tolerances and for revisions to dietary exposure/risk assessments will be determined upon receipt of the required residue chemistry data.

SUMMARY OF SCIENCE FINDINGS

GLN 860.1200: Directions for Use

A REFS search conducted 7/18/96 identified three oxyfluorfen end-use products (EPs) registered to Rohm and Haas Company. These EPs as well as all active SLN registrations are listed below.

Oxyfluorfen EPs with food/feed uses registered to Rohm & Haas Company.

EPA Reg. No.	Acceptance Date	Formulation	Product Name
707-145	2/22/93	2 lb/gal EC	Goal® 2E Herbicide
707-174 ¹	11/22/95	1.6 lb/gal EC	Goal® 1.6E Herbicide
707-243	11/28/95 ²	2 lb/gal EC	Goal® 2XL Herbicide

¹ Including SLN Nos. AR940006, AZ950008, CA880034, CA890012, CA920018, CA920029, CA930014, CA950007, CA950008, GA890006, HI840006, HI900005, IN840003, LA930011, MI890008, MI890009, MS940001, MT930004, NC830023, NC880004, NV930002, OR900016, OR910026, OR960005, OR960006, PA960001, SC880004, SD940001, TX960004, VA930010, WA910012, WA960005, WI880002, and WI950001.

² According to REFS, the most recent product label for EPA Reg. No. 707-243 is dated 2/96; however, the most recent product label found in the registration jacket is dated 11/28/95.

Label amendments are required to support uses of oxyfluorfen on field corn and fallow beds. Details of the required label amendments are presented in the respective endnote for GLN 860.1200 (Directions for Use) of Table B.

A comprehensive summary of the registered food/feed use patterns of oxyfluorfen, based on the product labels registered to Rohm and Haas Company and all active SLN registrations, is presented in Table A. A tabular summary of the residue chemistry science assessments for reregistration of oxyfluorfen is presented in Table B. The status of reregistration requirements for each guideline topic listed in Table B is based on the use patterns registered by the basic producer and also on the residue data submitted by IR-4 in support of minor crop uses. When end-use product DCIs are developed (e.g., at issuance of the RED), RD should require that all end-use product labels (e.g., MAI labels, SLNs, and products subject to the generic data exemption) be amended such that they are consistent with the basic producer labels.

GLN 860.1300: Plant Metabolism

The reregistration requirements for plant metabolism are fulfilled. The qualitative nature of the residue in plants is adequately understood based on acceptable metabolism studies conducted on tomatoes (a fruiting vegetable), onions (a bulb vegetable), and peaches (a stone fruit). The terminal residue of concern is oxyfluorfen *per se*. The recently revised tolerance expression for residues of oxyfluorfen *per se* in/on plant and animal commodities is appropriate and no changes are required.

GLN 860.1300: Livestock Metabolism

The reregistration requirements for livestock metabolism are fulfilled. The qualitative nature of the residue in livestock is adequately understood based on acceptable ruminant and poultry metabolism studies. These studies indicate that the parent compound, oxyfluorfen, is the compound of toxicological concern in milk, eggs, and livestock tissues.

GLN 860.1340: Residue Analytical Methods - Plants and Animals

The reregistration requirements for residue analytical methods are fulfilled. Acceptable methods are available for enforcement and data collection purposes for both plant and animal commodities.

The Pesticide Analytical Manual (PAM) Vol. II lists two GLC/electron capture detector (ECD) methods, designated as Methods I and II, for the enforcement of tolerances for oxyfluorfen residues in/on plant and animal commodities, respectively. Both methods determine levels of oxyfluorfen and its reduced metabolites by a common moiety (as heptafluorobutyryl derivative of oxyfluorfen). The 1/94 FDA PESTDATA database (PAM

Volume I, Appendix I) indicates that residues of oxyfluorfen are completely recovered (>80%) by Multiresidue Methods Section 302 (Luke Method; Protocol D) and 303 (Mills, Onley, Gaither Method; Protocol E, nonfatty).

Because oxyfluorfen *per se* is now the residue of concern, the PAM Vol. II methods are no longer suitable for enforcement purposes. CBRS recommends that FDA's Multiresidue Methods for oxyfluorfen *per se* be utilized as the primary enforcement method for plant commodities until the registrant submits a proposed enforcement method for plants to determine oxyfluorfen *per se*. An enforcement method for the determination of oxyfluorfen *per se* in animal commodities is required as FDA's Multiresidue Methods are not suitable for animal commodities. In conjunction with pending tolerance petitions, CBRS notes that new residue analytical methods are being proposed for determination of residues of oxyfluorfen *per se* for enforcement and data collection purposes for both plant and animal commodities.

GLN 860.1380: Storage Stability

Adequate storage stability data are available to validate the storage intervals and conditions of various samples collected from studies pertaining to magnitude of the residue in/on plants and animal. These storage stability data have been taken into consideration during the reassessments of established tolerances. No additional storage stability data are required for purposes of reregistration.

Fortified residues of oxyfluorfen *per se* were demonstrated to be stable under frozen storage conditions for at least 3 years in/on a variety of plant commodities including: almonds (hulls and nutmeats), artichokes, avocado, banana, broccoli, cabbage, cauliflower, corn, cottonseed, figs and dates, grapes, guava, horseradish, kiwi, mint hay, olives, onions, persimmons, pistachios, pome fruits, pomegranates, soybeans, stone fruits, and tree nuts. Fortified residues of oxyfluorfen *per se* were also shown to be stable for at least ~10 months in raspberries and blackberries. The results of storage stability studies conducted on these commodities can be translated to all crops for which residue trial data exist.

Fortified residues of oxyfluorfen *per se* were demonstrated to be stable under frozen storage conditions for up to 14 months in cow muscle and liver, and for up to 12 months in milk and eggs.

GLN 860.1500: Magnitude of the Residue in Plants

The reregistration requirements for magnitude of the residue in/on plants are fulfilled for the following raw agricultural commodities (RACs): artichokes; avocados; blackberries; broccoli; cabbage; cacao beans; cauliflower; chickpea (garbanzo beans); coffee; corn, field, fodder; corn, field, forage; corn, field, grain; cottonseed; dates; feijoa; figs; garlic; grapes; guavas; horseradish; kiwifruits; mint, tops; olives; onions, dry bulb; papayas; pome fruits; persimmons; pistachios; pomegranates; raspberries; soybean seed; stone fruits; taro corm; taro

foliage; and tree nuts. The available field trial data for these RACs have been reevaluated for purposes of tolerance reassessment. Overall, acceptable field trials reflecting the maximum registered use patterns and conditions under which the pesticide could be applied were conducted. The geographic representation for each commodity is generally adequate, and a sufficient number of trials reflecting representative EC formulation class was conducted. Refer to "Tolerance Reassessment Summary" section for recommendations and adjustments with respect to established tolerance levels.

The available Craven replacement residue data for cabbage and cauliflower will be translated to broccoli. Registered use patterns of garlic are supported by adequate residue data for onions (dry, bulb) as per 40 CFR 180.1(h). The registrant must propose a tolerance for residues of oxyfluorfen *per se* on garlic.

Additional data and/or label revisions are required for bananas, soybean forage, and soybean hay. Details of the required label amendments and/or field residue data for these RACs are presented in the appropriate crop section of Table B.

As a result of changes in Table I (OPPTS 860.1000), the Agency currently recognizes aspirated grain fractions and cotton gin byproducts (commonly called gin trash) as RACs. According to the current guidance, a tolerance for aspirated grain fractions for a pesticide should be established based on the use of the pesticide on corn, wheat, sorghum, and soybeans. Oxyfluorfen is presently registered for use on corn and soybeans only (see Table A). Following examination of the registered uses of oxyfluorfen on corn and soybeans as well as reevaluation of the available field residue data for corn grain and soybean seed, CBRS believes that residue chemistry data requirements for aspirated grain fractions should not be imposed for purposes of reregistration because of the following reasons: (i) the registered use of oxyfluorfen on field corn is limited to the states of NC and SC in conjunction with a USDA program to eradicate "witchweed" (*Striga asiatica*); these states represent <2% of the 1991 U.S. field corn grain production (1992 USDA Agricultural Statistics); and (ii) the available residue data for corn grain and soybean seed, from trials conducted at the maximum registered use patterns, suggest that majority of the residues were nondetectable (<0.01 ppm). With respect to cotton gin byproducts, residue data are required and an appropriate tolerance should be proposed once acceptable data have been submitted and evaluated.

It is generally the Agency's policy to require residue field data and establish tolerances for field corn fodder and forage. However, because of the limited registered use of oxyfluorfen on field corn, residue chemistry data requirements for field corn fodder and forage should not be imposed; it is noted that the treated forage and fodder of field corn are not fed to livestock to avoid the spread of "witchweed".

Pending required label amendments, the reregistration requirements for magnitude of the residue in fallow beds are fulfilled based on the aggregate results of the existing confined rotational crop study along with the residue field trials conducted for apple, artichokes, avocado, cherries, corn, figs, horseradish, kiwifruits, olives, onions, pomegranates, and

soybeans. The data from these field trials indicated nondetectable residues of oxyfluorfen (<0.01 ppm) in/on the RACs following application(s) of a representative EC formulation according to the maximum registered use patterns.

GLN 860.1520: Magnitude of the Residue in Processed Food/Feed

The reregistration requirements for magnitude of the residue in the processed commodities of the following crops are fulfilled: apples; corn (field) grain; cottonseed; figs; grapes; mint; olives; plums; and soybeans. The requirements for a coffee processing study remain outstanding. In light of the revised procedures for review of processing studies, CBRS has reevaluated the adequacy of the established food additive tolerances [40 CFR §185.4600] for cottonseed oil, mint oil, and soybean oil. Our specific conclusions and recommendations with regards to the need of these food additive tolerances are presented in the "Tolerance Reassessment Summary" section of this Science Chapter.

GLN 860.1480: Magnitude of the Residue in Meat, Milk, Poultry, and Eggs

The reregistration requirements for magnitude of the residue in livestock are fulfilled. There are no registered direct animal treatments for oxyfluorfen on cattle, goats, hogs, horses, sheep, or poultry. However, the potential for secondary transfer of residues of oxyfluorfen *per se* to animal commodities exists because oxyfluorfen is registered for use on a variety of livestock feed commodities. Acceptable dairy cattle and poultry feeding studies, depicting residues of oxyfluorfen *per se* and using three dietary burden levels, have been submitted and evaluated. The results of these animal feeding have been used to assess the adequacy of the established tolerances for animal commodities. Refer to the "Tolerance Reassessment Summary" section for recommendations and adjustments with respect to established tolerance levels.

GLN 860.1400: Nature and Magnitude of the Residue in Potable Water, Fish and Irrigated Crops

Oxyfluorfen is presently not registered for direct use on potable water and aquatic food and feed crops; therefore, no residue chemistry data are required under these guideline topics.

GLN 860.1460: Magnitude of the Residue in Food-Handling Establishments

Oxyfluorfen is presently not registered for use in food-handling establishments; therefore, no residue chemistry data are required under this guideline topic.

GLNs 860.1850 and 860.1900: Confined/Field Rotational Crops

Pending required label amendments, the reregistration requirements for confined rotational crops (860.1850) are fully satisfied. Details of the required label amendments are presented in the respective endnotes for 860.1200 (Directions for Use) and 860.1850 (Confined Rotational Crops) of Table B. No limited or extensive field trials (860.1900) are required at this time. The available confined rotational crop study indicates that the total radioactive residues (TRR) were either at the detection limit or nondetectable (≤ 0.01 ppm) in/on a variety of rotational crops representing root/tuber vegetables, fruiting and leafy vegetables, and grain crops at or close to the minimum plantback intervals specified on the label under fallow bed uses. The TRR was highest, ranging from 0.02 to 0.06 ppm, in/on wheat chaff and straw at a 61-day plantback interval. Further characterization and identification of radioactive residues in wheat chaff and straw were not performed and are not required in consideration of the 2x rate utilized in the study.

Table A. Food/Feed Use Patterns Subject to Reregistration for Oxyfluorfen (Case 2490).

Site	Application Type Application Timing Application Equipment	Formulation [EPA Reg. No.]	Maximum Single Application Rate (ai)	Maximum No. of Applications Per Season	Maximum Seasonal Rate (ai)	Preharvest Interval (Days)	Use Limitations ¹
Almonds (See also "Tree nuts")							
	Directed spray application Nondormant Ground equipment	1.6 lb/gal EC [CA890012]	2.0 lb/A	Not specified (NS)	2.0 lb/A (nondormant season)	30	Use limited to CA. Application may be made in a minimum of 20 gal of water/A (minimum of 10 gal/A for certain tank mix applications). Application may be made alone or as a tank mix with other herbicides.
Apples (See "Pome fruits")							
Apricots (See "Stone fruits")							
Artichokes, Globe							
	Directed spray application Postemergence Ground equipment	1.6 lb/gal EC [707-174] 2 lb/gal EC [707-243]	2.0 lb/A	1	2.0 lb/A	5	Applications may be made in a minimum of 40 gal of water/A. The use of any treated plants for feed or forage and the feeding or grazing of any treated area are prohibited for the 1.6 lb/gal EC formulation only. The first application is made to susceptible weed seedlings and the second application is made 8-10 weeks later. Applications may be made in a minimum of 40 gal of water/A. The use of any treated plants for feed or forage and the feeding or grazing of any treated area are prohibited for the 1.6 lb/gal EC formulation only.
			1.0 lb/A	2	2.0 lb/A	5	

(continued; footnotes follow.)

Table A (continued).

Site Application Type Application Timing Application Equipment	Formulation [EPA Reg. No.]	Maximum Single Application Rate (ai)	Maximum No. of Applications Per Season	Maximum Seasonal Rate (ai)	Preharvest Interval (Days)	Use Limitations ¹
Avocados						
Directed spray application Dormant Ground equipment	1.6 lb/gal EC [707-174] 2 lb/gal EC [707-145] [707-243]	2.0 lb/A	NS	2.0 lb/A	NS	Applications may be made in a minimum of 40 gal of water/A. Applications may be made alone or as a tank mix with other herbicides. The use of any treated plants for feed or forage, the feeding or grazing of any treated area, and application after buds start to swell or when foliage or fruit are present are prohibited.
Beech nut (See "Tree nuts")						
Blackberries						
Directed spray application Early season (primocane growth 4 to 6 inches) Ground equipment	1.6 lb/gal EC [OR960005]	0.8 lb/A	4	2.0 lb/A	15	Use limited to OR. Applications may be made in a minimum of 50 gal water/A.
Brazil nut (See "Tree nuts")						
Broccoli						
Broadcast application Pretransplant (preplant) Ground equipment	1.6 lb/gal EC [707-174] 2 lb/gal EC [707-243]	0.5 lb/A	NS	0.5 lb/A	NS	Applications may be made in a minimum of 20 gal of water/A.
Butternut (See "Tree nuts")						

(continued; footnotes follow.)

Table A (continued).

Site	Application Type Application Timing Application Equipment	Formulation [EPA Reg. No.]	Maximum Single Application Rate (ai)	Maximum No. of Applications Per Season	Maximum Seasonal Rate (ai)	Preharvest Interval (Days)	Use Limitations ¹
Cabbage							
Broadcast application Pretransplant (preplant) Ground equipment	1.6 lb/gal EC [707-174]	0.5 lb/A	NS	0.5 lb/A	NS	See "Broccoli."	
	2 lb/gal EC [707-243]						
Cacao beans (bearing and nonbearing)							
Directed spray application Postemergence Ground equipment	1.6 lb/gal EC [707-174]	2.0 lb/A	NS	6.0 lb/A	1	Applications may be made in a minimum of 15 gal of water/A.	
	2 lb/gal EC [707-243]						
Directed spray application Pretransplant Ground equipment	1.6 lb/gal EC [707-174] 2 lb/gal EC [707-243]	1.0 lb/A	NS	6.0 lb/A	1		
Cashew (See "Tree nuts")							
Cauliflower							
Broadcast application Pretransplant (preplant) Ground equipment	1.6 lb/gal EC [707-174]	0.5 lb/A	NS	0.5 lb/A	NS	See "Broccoli."	
	2 lb/gal EC [707-243]						
Cherries (See "Stone fruits")							
Chestnut (See "Tree nuts")							

(continued, footnotes follow.)

Table A (continued).

Site Application Type Application Timing Application Equipment	Formulation [EPA Reg. No.]	Maximum Single Application Rate (ai)	Maximum No. of Applications Per Season	Maximum Seasonal Rate (ai)	Preharvest Interval (Days)	Use Limitations ¹
Chickpea (Garbanzo bean)						
Broadcast application Preemergence Ground equipment	1.6 lb/gal EC [707-174]	0.25 lb/A	NS	NS	NS	Use limited to CA. Applications may be made in a minimum of 25 gal of water/A. Feeding of bean, vines, or hay is prohibited.
	2 lb/gal EC [707-243]					
	1.6 lb/gal EC [CA920029]	0.25 lb/A	NS	NS	NS	
Chinquapin (See "Tree nuts")						
Coffee (bearing and nonbearing)						
Broadcast application (over the top) Dormant transplants Ground equipment	1.6 lb/gal EC [707-174]	2.0 lb/A	NS	6.0 lb/A	1	Use limited to HI. Applications may be made in a minimum of 30 gal of water/A. Applications may be made alone or as a tank mix with other herbicides.
	2 lb/gal EC [707-243]					
Directed spray application Postemergence Ground equipment	1.6 lb/gal EC [707-174]	2.0 lb/A	NS	6.0 lb/A	1	
	2 lb/gal EC [707-243]					
Directed spray application Pretransplant Ground equipment	1.6 lb/gal EC [707-174] 2 lb/gal EC [707-243]	1.0 lb/A	NS	6.0 lb/A	1	

(continued; footnotes follow.)

Table A (continued).

Site	Application Type Application Timing Application Equipment	Formulation [EPA Reg. No.]	Maximum Single Application Rate (ai)	Maximum No. of Applications Per Season	Maximum Seasonal Rate (ai)	Preharvest Interval (Days)	Use Limitations
Corn, field							
	Directed spray application Foliar/postemergence Ground equipment	1.6 lb/gal EC [707-174] [NC880004] [SC880004] 2 lb/gal EC [707-145] [707-243]	0.75 lb/A (first application) 0.5 lb/A (subsequent applications)	NS	1.25 lb/A	30	Use in conjunction with the USDA "witchweed" eradication program in NC and SC. Applications may be made in a minimum of 10 gal of water/A. The use of any plants from a treated field for green chop, ensilage, forage, or fodder is prohibited.
	Broadcast application Fallow bed Ground or aerial equipment	1.6 lb/gal EC [AR940006] [LA930011] [MS940001]	0.5 lb/A	NS	0.5 lb/A (per fallow season)	Not applicable (NA)	Use limited to AR, LA, and MS. Application may be made in a minimum of 20 gal of water/A using ground equipment or 5 gal/A by air. Applications may be made alone or as a tank mix with other herbicides. A 7-day interval from treatment to planting is specified. The use of any plants from a treated field for green chop, ensilage, forage or fodder or the feeding or grazing of animals on any treated area is prohibited.

(continued; footnotes follow.)

Table A (continued).

Site Application Type Application Timing Application Equipment	Formulation [EPA Reg. No.]	Maximum Single Application Rate (ai)	Maximum No. of Applications Per Season	Maximum Seasonal Rate (ai)	Preharvest Interval (Days)	Use Limitations ¹
Cotton						
Directed spray application Postemergence Ground equipment	1.6 lb/gal EC [707-174] [VA930010]	0.5 lb/A	NS	0.5 lb/A (single or multiple applications)	90 [707-174] [707-243] [VA930010]	Use limited to AL, AR, GA, LA, MS, MO, NM, NC, OK, SC, TN, TX, and VA (Southern cotton). Applications may be made in a minimum of 20 gal of water/A. Applications may be made alone or as a tank mix with other herbicides. Application after initiation of bloom is prohibited.
	2 lb/gal EC [707-145] [707-243]			1.0 lb/A (multiple applications) 0.5 lb/A (single application)	75 [707-174] [707-243] NS [707-145]	Use limited to AZ and CA (Western cotton). Applications may be made in a minimum of 20 gal of water/A. Applications may be made alone or as a tank mix with other herbicides. Application after initiation of bloom is prohibited.
Broadcast application Fallow bed Aerial equipment	2 lb/gal EC [707-145]	0.5 lb/A	NS	0.5 lb/A (per fallow season)	NA	Use limited to AZ and CA. Applications may be made in a minimum of 10 gal of water/A (minimum of 5 gal/A for certain tank mix applications). Applications may be made alone or as a tank mix with other herbicides. A 14-day interval from treatment to incorporation and planting is specified.

(continued; footnotes follow.)

Table A (continued).

Site	Application Type Application Timing Application Equipment	Formulation [EPA Reg. No.]	Maximum Single Application Rate (ai)	Maximum No. of Applications Per Season	Maximum Seasonal Rate (ai)	Preharvest Interval (Days)	Use Limitations
Cotton (continued)							
	Broadcast application Fallow bed Ground equipment	2 lb/gal EC [707-145]	0.5 lb/A	NS	0.5 lb/A (per fallow season)	NA	Applications may be made in a minimum of 20 gal of water/A. Applications may be made alone or as a tank mix with other herbicides. A 14-day interval from treatment to incorporation and planting is specified.
	Broadcast application Fallow bed Ground or aerial equipment	1.6 lb/gal EC [707-174] 2 lb/gal EC [707-243]	0.5 lb/A	NS	0.5 lb/A (per fallow season)	NA	Applications may be made in a minimum of 20 gal of water/A using ground equipment or 5 gal/A by air (minimum of 10 gal/A by air in CA). Applications may be made alone or as a tank mix with other herbicides. A 7-day interval from treatment to planting is specified.
Crabapples (See "Pome fruits")							
Dates							
	Directed spray application Dormant Ground equipment	1.6 lb/gal EC [707-174] 2 lb/gal EC [707-145] [707-243]	2.0 lb/A	NS	2.0 lb/A	NS	Applications may be made in a minimum of 40 gal of water/A. Applications may be made alone or as a tank mix with other herbicides. The use of any treated plants for feed or forage, the feeding or grazing of any treated area, and application after buds start to swell or when foliage or fruit are present are prohibited.

(continued; footnotes follow.)

Table A (continued).

Site	Application Type Application Timing Application Equipment	Formulation [EPA Reg. No.]	Maximum Single Application Rate (ai)	Maximum No. of Applications Per Season	Maximum Seasonal Rate (ai)	Preharvest Interval (Days)	Use Limitations ¹
Fallow land	Broadcast application Fallow bed Ground or aerial equipment	1.6 lb/gal EC [707-174]	0.5 lb/A	NS	0.5 lb/A	NA	Applications may be made in a minimum of 20 gal of water/A using ground equipment or 10 gal/A by air. Applications may be made alone or as a tank mix with other herbicides.
	Broadcast application Fallow bed Ground equipment	1.6 lb/gal EC [707-174] 2 lb/gal EC [707-145] [707-243]	0.5 lb/A	NS	NS	NA	Use limited to ID, OR, and WA. Use is restricted to summer fallow land that will be planted back the following year to barley, oats, or winter wheat. Applications may be made in a minimum of 20 gal of water/A. Applications may be made alone or as a tank mix with other herbicides.
Feijoa	Directed spray application Dormant Ground equipment	1.6 lb/gal EC [707-174] [707-243]	2.0 lb/A	NS	2.0 lb/A	NS	Applications may be made in a minimum of 40 gal of water/A. Applications may be made alone or as a tank mix with other herbicides. The use of any treated plants for feed or forage, the feeding or grazing of any treated area, and application after buds start to swell or when foliage or fruit are present are prohibited.

(continued, footnotes follow.)

Table A (continued).

Site	Application Type Application Timing Application Equipment	Formulation [EPA Reg. No.]	Maximum Single Application Rate (ai)	Maximum No. of Applications Per Season	Maximum Seasonal Rate (ai)	Preharvest Interval (Days)	Use Limitations
Figs							
	Directed spray application Dormant Ground equipment	1.6 lb/gal EC [707-174] 2 lb/gal EC [707-145] [707-243]	2.0 lb/A	NS	2.0 lb/A	NS	Applications may be made in a minimum of 40 gal of water/A. Applications may be made alone or as a tank mix with other herbicides. The use of any treated plants for feed or forage, the feeding or grazing of any treated area, and application after buds start to swell or when foliage or fruit are present are prohibited.
Filberts (See "Tree Nuts")							
Garbanzo bean (see "Chickpea")							
Garlic							
	Broadcast or band application Postemergence to seeded garlic (at least 2 true leaves) Ground equipment	1.6 lb/gal EC [707-174] 2 lb/gal EC [707-243]	0.25 lb/A	NS	0.5 lb/A	60	Use limited to direct-seeded garlic in Western states of AZ, CA, CO, ID, NV, NM, OR, TX, UT, and WA. Applications may be made in a minimum of 40 gal of water/A. For use on dry bulb garlic only; use on garlic grown for seed is prohibited.
	Broadcast or band application Postemergence to seeded garlic (at least 3 true leaves) Ground equipment	1.6 lb/gal EC [707-174] 2 lb/gal EC [707-243]	0.06 lb/A	NS	0.5 lb/A	60	Use limited to direct-seed garlic in Northeastern states of CT, ME, MA, NH, NJ, NY, RI, and VT. Applications may be made in a minimum of 40 gal of water/A. For use on dry bulb garlic only; use on garlic grown for seed is prohibited.

(continued; footnotes follow.)

Table A (continued).

Site	Application Type Application Timing Application Equipment	Formulation [EPA Reg. No.]	Maximum Single Application Rate (ai)	Maximum No. of Applications Per Season	Maximum Seasonal Rate (ai)	Preharvest Interval (Days)	Use Limitations ¹
Garlic (continued)							
Broadcast or band application Postemergence to seeded garlic (at least 2 true leaves) Ground equipment		1.6 lb/gal EC [707-174]	0.12 lb/A	NS	0.5 lb/A	60	Use limited to direct-seeded garlic in all other states not listed above. Applications may be made in a minimum of 40 gal of water/A. For use on dry bulb garlic only; use on garlic grown for seed is prohibited.
		2 lb/gal EC [707-243]					
Broadcast or band application After transplanting Ground equipment		1.6 lb/gal EC [707-174]	0.5 lb/A	NS	0.5 lb/A	60	Use limited to transplanted garlic for all states except the Northeastern states listed above. Applications may be made in a minimum of 40 gal of water/A. For use on dry bulb garlic only; use on garlic grown for seed is prohibited.
		2 lb/gal EC [707-243]					
Broadcast application Preemergence Ground or aerial equipment		1.6 lb/gal EC [CA920018]	0.06 lb/A	NS	0.5 lb/A	60	Use limited to transplanted garlic in the Northeastern states listed above. Applications may be made in a minimum of 40 gal of water/A. For use on dry bulb garlic only; use on garlic grown for seed is prohibited.

(continued, footnotes follow.)

Table A (continued).

Site	Application Type Application Timing Application Equipment	Formulation [EPA Reg. No.]	Maximum Single Application Rate (ai)	Maximum No. of Applications Per Season	Maximum Seasonal Rate (ai)	Preharvest Interval (Days)	Use Limitations
Garlic (continued)							
	Directed spray application Postemergence Ground equipment	1.6 lb/gal EC [CA920018]	0.25 lb/A	NS	0.5 lb/A	60	Use limited to CA. Applications may be made in a minimum of 20 gal of water/A. For use on dry bulb garlic only.
	Chemigation Preemergence or postemergence Sprinkler irrigation	1.6 lb/gal EC [CA920018]	0.25 lb/A	NS	0.5 lb/A	60	Use limited to CA. For use on dry bulb garlic only.
Grapes							
	Directed spray application Dormant Ground equipment	1.6 lb/gal EC [707-174] 2 lb/gal EC [707-145] [707-243]	2.0 lb/A	NS	2.0 lb/A	NS	Applications may be made in a minimum of 40 gal of water/A. Applications may be made alone or as a tank mix with other herbicides. The use of any treated plants for feed or forage, the feeding or grazing of any treated area, and application after buds start to swell or when foliage or fruit are present are prohibited.
	Directed spray or broadcast (over the top) application Dormant (nonbearing) Ground equipment	1.6 lb/gal EC [CA950008]	2.0 lb/A	NS	NS	NS	Use limited to CA. Applications may be made in a minimum of 40 gal of water/A. Application after buds start to swell is prohibited.

(continued; footnotes follow.)

Table A (continued).

Site Application Type Application Timing Application Equipment	Formulation [EPA Reg. No.]	Maximum Single Application Rate (ai)	Maximum No. of Applications Per Season	Maximum Seasonal Rate (ai)	Preharvest Interval (Days)	Use Limitations ¹
Guavas (bearing and nonbearing)						
Directed spray application Postemergence (after new foliage has hardened off) Ground equipment	1.6 lb/gal EC [707-174]	2.0 lb/A	NS	4.0 lb/A	1	Use limited to HI. Applications may be made in a minimum of 15 gal of water/A. Applications may be made alone or as a tank mix with other herbicides.
	2 lb/gal EC [707-243]					
Hickory Nut (See "Tree Nuts")						
Horseradish						
Broadcast application Preemergence Ground equipment	1.6 lb/gal EC [707-174]	0.5 lb/A	NS	NS	NS	Applications may be made in a minimum of 20 gal of water/A.
	2 lb/gal EC [707-243]					
Kiwifruits						
Directed spray application Dormant Ground equipment	1.6 lb/gal EC [707-174] 2 lb/gal EC [707-145] [707-243]	2.0 lb/A	NS	2.0 lb/A	NS	Applications may be made in a minimum of 40 gal of water/A. Applications may be made alone or as a tank mix with other herbicides. The use of any treated plants for feed or forage, the feeding or grazing of any treated area, and application after buds start to swell or when foliage or fruit are present are prohibited.
Loquat (See "Pome fruits")						

(continued; footnotes follow.)

Table A (continued).

Site	Application Type Application Timing Application Equipment	Formulation [EPA Reg. No.]	Maximum Single Application Rate (ai)	Maximum No. of Applications Per Season	Maximum Seasonal Rate (ai)	Preharvest Interval (Days)	Use Limitations
Macadamia Nut (bearing and nonbearing; see also "Tree nuts")							
	Directed spray application Postemergence (after new foliage has hardened off) Ground equipment	1.6 lb/gal EC [HI840006]	2.0 lb/A 1.0 lb/A (lava soil)	NS	4.0 lb/A	7	Use limited to HI. Applications may be made in a minimum of 15 gal of water/A. Applications may be made alone or as a tank mix with other herbicides. Feeding or grazing of animals on any treated area is prohibited.
Mayhaws (See "Pome fruits")							
Nectarines (See "Stone fruits")							
Olives							
	Directed spray application Dormant Ground equipment	1.6 lb/gal EC [707-174] 2 lb/gal EC [707-145] [707-243]	2.0 lb/A	NS	2.0 lb/A	NS	Applications may be made in a minimum of 40 gal of water/A. Applications may be made alone or as a tank mix with other herbicides. The use of any treated plants for feed or forage, the feeding or grazing of any treated area, and application after buds start to swell or when foliage or fruit are present are prohibited.
Onions, bulb							
	Broadcast or band application Postemergence to seeded onions (at least 2 true leaves) Ground equipment	1.6 lb/gal EC [707-174] 2 lb/gal EC [707-243]	0.25 lb/A	NS	0.5 lb/A	45	Use limited to direct-seeded onions in Western states of AZ, CA, CO, ID, NV, NM, OR, TX, UT, and WA. Applications may be made in a minimum of 40 gal of water/A.

(continued; footnotes follow.)

Table A (continued).

Site	Application Type Application Timing Application Equipment	Formulation [EPA Reg. No.]	Maximum Single Application Rate (ai)	Maximum No. of Applications Per Season	Maximum Seasonal Rate (ai)	Preharvest Interval (Days)	Use Limitations
Onions, bulb (continued)							
Broadcast or band application Postemergence to seeded onions (at least 3 true leaves) Ground equipment	1.6 lb/gal EC [707-174] 2 lb/gal EC [707-243]	0.06 lb/A	NS	0.5 lb/A	45	Use limited to direct-seeded onions in Northeastern states of CT, ME, MA, NH, NJ, NY, RI, and VT. Applications may be made in a minimum of 40 gal of water/A.	
	1.6 lb/gal EC [707-174] 2 lb/gal EC [707-243]	0.12 lb/A	NS	0.5 lb/A	45	Use limited to direct-seeded onions in all other states not listed above. Applications may be made in a minimum of 40 gal of water/A.	
Broadcast or band application Postemergence to seeded onions (at least 2 true leaves) Ground equipment	1.6 lb/gal EC [M1890008]	0.12 lb/A	NS	0.5 lb/A	45	Use limited to direct-seeded onions in MI. Applications may be made in a minimum of 40 gal of water/A. The use of any treated plants for feed or forage and the feeding or grazing of any treated area are prohibited.	
	1.6 lb/gal EC [707-174] 2 lb/gal EC [707-243]	0.5 lb/A	NS	0.5 lb/A	45	Use limited to transplanted onions for all states except the Northeastern states listed above. Applications may be made in a minimum of 40 gal of water/A.	
Broadcast or band application After transplanting Ground equipment		0.06 lb/A	NS	0.5 lb/A	45	Use limited to transplanted onions in the Northeastern states listed above. Applications may be made in a minimum of 40 gal of water/A.	

(continued; footnotes follow.)

Table A (continued).

Site	Application Type Application Timing Application Equipment	Formulation [EPA Reg. No.]	Maximum Single Application Rate (ai)	Maximum No. of Applications Per Season	Maximum Seasonal Rate (ai)	Preharvest Interval (Days)	Use Limitations ¹
Onions, bulb (continued)							
	Broadcast or band application After transplanting Ground equipment	1.6 lb/gal EC [M1890008]	0.5 lb/A	NS	0.5 lb/A	45	Use limited to transplanted onions in MI. Applications may be made in a minimum of 40 gal of water/A. The use of any treated plants for feed or forage and the feeding or grazing of any treated area are prohibited.
	Broadcast or band application Pre-transplanting Ground equipment	1.6 lb/gal EC [707-174] 2 lb/gal EC [707-243]	0.5 lb/A	NS	0.5 lb/A	45	Use prohibited in Northeastern and Western states listed above, except if specifically directed on other approved supplemental labeling. Applications may be made in a minimum of 40 gal of water/A.
	Broadcast application Pre-transplanting Ground equipment	1.6 lb/gal EC [GA890006]	0.5 lb/A	NS	0.5 lb/A	NS	Use limited to GA. Applications may be made in a minimum of 40 gal of water/A. The use of any treated plants for feed or forage and the feeding or grazing of any treated area are prohibited.
	Chemigation Postemergence (at least 2 true leaves) or after transplanting Sprinkler irrigation	1.6 lb/gal EC [CA880034] [OR910026] [WA910012]	0.25 lb/A	NS	0.5 lb/A	45 (OR) 60 (CA and WA)	Use limited to CA, OR, and WA.

(continued; footnotes follow.)

Table A (continued).

Site	Application Type Application Timing Application Equipment	Formulation [EPA Reg. No.]	Maximum Single Application Rate (ai)	Maximum No. of Applications Per Season	Maximum Seasonal Rate (ai)	Preharvest Interval (Days)	Use Limitations ¹
Onions Grown for Seed							
	Directed spray application Postemergence (at least 3 true leaves) Ground equipment	1.6 lb/gal EC 2 lb/gal EC	0.03 lb/A	NS	0.5 lb/A	60	In all states except the Northeastern states: CT, ME, MA, NH, NJ, NY, RI, & VT, the maximum seasonal use rate not to exceed 0.125 lb ai/A for 2 lb/gal EC and 1.6 lb/gal EC.
Papayas							
	Directed spray application Postemergence Ground equipment	1.6 lb/gal EC [707-174] 2 lb/gal EC [707-243]	1.0 lb/A	NS	3.0 lb/A	1	Use limited to HI. Initial application should occur no earlier than 4 months after transplanting or 6 months after direct seeding. Applications may be made in minimum of 15 gal of water/A and repeated at 4-month intervals.
Peaches (See "Stone fruits")							
Pears (See "Pome fruits")							
Pecans (See "Tree nuts")							
Peppermint							
	Broadcast or band application Dormant Ground equipment	1.6 lb/gal EC [707-174] 2 lb/gal EC [707-145] [707-243]	2.0 lb/A	1	NS	NA	Use limited to OR and WA (East of Cascades) and western ID. Application may be made in a minimum of 20 gal of water/A.
			0.75 lb/A	1	NS	NA	Use limited to western OR. Application may be made in a minimum of 20 gal of water/A.

(continued; footnotes follow.)

Table A (continued).

Site	Application Type Application Timing Application Equipment	Formulation [EPA Reg. No.]	Maximum Single Application Rate (ai)	Maximum No. of Applications Per Season	Maximum Seasonal Rate (ai)	Preharvest Interval (Days)	Use Limitations ¹
		1.6 lb/gal EC [CA930014] [MT930004] [NV930002] [SD940001]	2.0 lb/A	NS	NS	NA	Use limited to CA, MT, NV, and SD. Applications may be made in a minimum of 20 gal of water/A.
Peppermint (continued)							
	Broadcast application Preemergence (dormant) Ground equipment	1.6 lb/gal EC [IN840003] [MI890009] [WI880002] [WI950001]	1.5 lb/A	NS	NS	NA	Use limited to IN, MI, and WI for mint grown in muck soil ($\geq 20\%$ organic matter). Applications may be made in a minimum of 20 gal of water/A. The use of any treated plants for feed or forage and the feeding or grazing of any treated area are prohibited.
Persimmons							
	Directed spray application Dormant Ground equipment	1.6 lb/gal EC [707-174] 2 lb/gal EC [707-243]	2.0 lb/A	NS	2.0 lb/A	NS	Applications may be made in a minimum of 40 gal of water/A. Applications may be made alone or as a tank mix with other herbicides. The use of any treated plants for feed or forage, the feeding or grazing of any treated area, and application after buds start to swell or when foliage or fruit are present are prohibited.

(continued; footnotes follow.)

CB No.: 7003
DP Barcode: None
Subject: PP#0E3898 - Petition Review for Establishment of Tolerance(s) for Cocoa Bean.
From: M. Nelson
To: H. Jamerson
Dated: 3/25/90
MRID(s): None

CB No.: 7096
DP Barcode: None
Subject: PP#0E3908 - Petition Review for Establishment of Tolerance(s) for Garbanzo Beans.
From: M. Nelson
To: H. Jamerson and A. Beard
Dated: 3/21/91
MRID(s): 41622701

CB No.: None
Subject: Oxyfluorfen. Reregistration List B. Phase IV Review for Rohm and Haas.
From: S. Funk
To: V. Dietrich
Dated: 3/22/91
MRID(s): None

CB No.: 8548
DP Barcode: D167778
Subject: Impact of Craven Laboratories Inc. Analytical Data on Reregistrations.
From: S. Funk
To: J. Miller
Dated: 10/10/91
MRID(s): None

CB No.: 9024
DP Barcode: D171996
Subject: Oxyfluorfen. Rohm and Haas Company 90-Day Response to Phase 4 Review
From: F. Fort
To: B. Sidwell and M. Wilhite
Dated: 4/16/92
MRID(s): None

CB No.: 9913
DP Barcode: D173513
Subject: Reregistration of Oxyfluorfen: Time Extension Request
From: C. Olinger
To: M. Wilhite and B. Sidwell
Dated: 6/15/92
MRID(s): None

CB No.: None
DP Barcode: None
Subject: Oxyfluorfen. Reevaluation of the Impact of Craven Laboratories Inc.
Analytical Data on Reregistrations.
From: S. Funk
To: P. Bagley and L. Rossi
Dated: 4/26/93
MRID(s): None

CB No.: 11025
DP Barcode: D185392
Subject: Oxyfluorfen in/on Grass Forage, Hay and Seed Screenings. Evaluation of
Residue Data and Analytical Methodology.
From: J. Morales
To: H. Jamerson
Dated: 5/19/93
MRID(s): 425635-00 and -01

CB No.: 11303
DP Barcode: D187615
Subject: Oxyfluorfen. Guideline 171-4(b): Nature of the Residue in Poultry.
From: S. Knizner
To: B. Sidwell
Dated: 6/10/93
MRID(s): 42634701

CB No.: 11526
DP Barcode: D188906
Subject: Oxyfluorfen. Guideline 171-4(b): Nature of the Residue in Ruminants.
From: S. Knizner
To: B. Sidwell

Dated: 6/16/93
MRID(s): 42670601

CB No.: 12194
DP Barcode: D193009
Subject: Oxyfluorfen. Protocol for Processing Study GLN 171-4(l).
From: S. Funk
To: B. Sidwell and M. Wilhite
Dated: 8/31/93
MRID(s): None

CB No.: 12933
DP Barcode: D197682
Subject: Oxyfluorfen (GOAL®) Registrant Response to 09/21/93 DCI for Replacement of Craven Residue Chemistry Data.
From: S. Funk
To: B. Sidwell
Dated: 12/21/93
MRID(s): None

CB Nos.: 12522, 13212, 12513, and 13338
DP Barcode: D194785, D199266, D194789, and D200012
Subject: Oxyfluorfen. Nature of the Residue in Tomatoes, Onions, Stone Fruit, and Alfalfa.
From: S. Knizner
To: M. Wilhite
Dated: 4/8/94
MRID(s): 42865001, 42913201, 42873301, and 92136114

CB Nos.: 12124, 12860, and 12861
DP Barcodes: D192408, D196984, and D197110
Subject: PP#3F04229/FAP#3H5674 Oxyfluorfen in or on Peanuts. Evaluation of Residue Data and Analytical Methods.
From: W. Wassell
To: J. Miller
Dated: 5/11/94
MRID(s): 42793301

CB No.: 13395

DP Barcode: D200532
Subject: Oxyfluorfen. Livestock Feeding Study - Meat/Milk/Poultry/Eggs Magnitude of the Residue.
From: S. Knizner
To: B. Sidwell
Dated: 8/19/94
MRID(s): 43152201 and 43152202

CB Nos.: 14321 and 14323
DP Barcode: D207134
Subject: Oxyfluorfen. Analytical Method for Meat/Milk/Eggs and Response to CBRS Review of Ruminant Metabolism Study.
From: S. Knizner
To: M. Wilhite
Dated: 11/15/94
MRID(s): 43307502, 43307503, 43317701, and 43346401.

CB No.: 14692
DP Barcode: D209192
Subject: PP#5E04429. Oxyfluorfen In/On Blackberries and Raspberries in WA and OR. Evaluation of Residue Data and Analytical Methods
From: G. Kramer
To: H. Jamerson and J. Smith
Dated: 2/17/95
MRID(s): 43424201, 43424202, 43424203

CB No.: 15229
DP Barcode: D212793
Subject: PP#5E04429. Oxyfluorfen In/On Blackberries and Raspberries in WA and OR. Amendment of 2/24/95
From: G. Kramer
To: H. Jamerson
Dated: 3/15/95
MRID(s): None

CB No.: 16203
DP Barcode: D219270
Subject: CA950007, Section 24 (c) - Non-Dormant Use of Oxyfluorfen on Pistachios in California.
From: W. Cutchin

Table A (continued).

Site Application Type Application Timing Application Equipment	Formulation [EPA Reg. No.]	Maximum Single Application Rate (ai)	Maximum No. of Applications Per Season	Maximum Seasonal Rate (ai)	Preharvest Interval (Days)	Use Limitations ¹
Pistachios						
Directed spray application Dormant Ground equipment	1.6 lb/gal EC [707-174]	2.0 lb/A	NS	2.0 lb/A	NS	Applications may be made in a minimum of 40 gal of water/A. Applications may be made alone or as a tank mix with other herbicides. The use of any treated plants for feed or forage, the feeding or grazing of any treated area, and application after buds start to swell or when foliage or fruit are present are prohibited.
	2 lb/gal EC [707-145] [707-243]					
Directed spray application Nondormant Ground equipment	1.6 lb/gal EC [CA950007]	2.0 lb/A	NS	2.0 lb/A (nondormant season)	7	Use limited to CA. Application may be made in a minimum of 20 gal of water/A (minimum of 10 gal/A for certain tank mix applications). Application may be made alone or as a tank mix with other herbicides.
	1.6 lb/gal EC [CA950007]					
Chemigation Nondormant Flood (basin) irrigation Plums (See "Stone fruits")	1.6 lb/gal EC [CA950007]	2.0 lb/A	NS	2.0 lb/A (nondormant season)	7	Use limited to CA.

(continued; footnotes follow.)

Table A (continued).

Site Application Type Application Timing Application Equipment	Formulation [EPA Reg. No.]	Maximum Single Application Rate (ai)	Maximum No. of Applications Per Season	Maximum Seasonal Rate (ai)	Preharvest Interval (Days)	Use Limitations
Pome fruits (including apple, crabapple, loquat, mayhaws, pear, and quince)						
Directed spray application Dormant Ground equipment	1.6 lb/gal EC [707-174] 2 lb/gal EC [707-145] [707-243]	2.0 lb/A	NS	2.0 lb/A	NS	Applications may be made in a minimum of 40 gal of water/A. Applications may be made alone or as a tank mix with other herbicides. The use of any treated plants for feed or forage, the feeding or grazing of any treated area, and application after buds start to swell or when foliage or fruit are present are prohibited.
Pomegranates						
Directed spray application Dormant Ground equipment	1.6 lb/gal EC [707-174] 2 lb/gal EC [707-145] [707-243]	2.0 lb/A	NS	2.0 lb/A	NS	Applications may be made in a minimum of 40 gal of water/A. Applications may be made alone or as a tank mix with other herbicides. The use of any treated plants for feed or forage, the feeding or grazing of any treated area, and application after buds start to swell or when foliage or fruit are present are prohibited.
Prunes (See "Stone fruits")						
Quince (See "Pome fruits")						
Raspberries						
Directed spray application Early season (primocane growth 4 to 6 inches) Ground equipment	1.6 lb/gal EC [OR960006] [WA960005]	0.8 lb/A	2	1.2 lb/A	50	Use limited to OR and WA. Applications may be made in a minimum of 50 gal water/A.

(continued; footnotes follow.)

Table A. (continued).

Site Application Type Application Timing Application Equipment	Formulation [EPA Reg. No.]	Maximum Single Application Rate (ai)	Maximum No. of Applications Per Season	Maximum Seasonal Rate (ai)	Preharvest Interval (Days)	Use Limitations
Soybeans						
Broadcast application (Conservation tillage) Early preplant Ground equipment	1.6 lb/gal EC [707-174] 2 lb/gal EC [707-145] [707-243]	0.75 lb/A	2	0.75 lb/A (all uses)	NS	Use prohibited in CA. Application should be made approximately 14 days prior to planting.
Broadcast application (No-till) Preemergence Ground equipment	1.6 lb/gal EC [707-174] 2 lb/gal EC [707-145] [707-243]	0.5 lb/A	2	0.75 lb/A (all uses) 0.5 lb/A (preemergent uses)	NS	Use prohibited in CA. Application should be made within 1 day of planting. Application may be made in a minimum of 20 gal of water/A. Application may be made alone or as a tank mix with other herbicides.
Broadcast application (Conventional till) Preemergence Ground equipment	1.6 lb/gal EC [707-174] 2 lb/gal EC [707-145] [707-243]	0.38 lb/A	2	0.75 lb/A (all uses) 0.5 lb/A (preemergent uses)	NS	Use prohibited in CA. Application should be made when soybean plants are a minimum of 8 inches tall and before blooms appear. Application may be made in a minimum of 20 gal of water/A. Application may be made alone or as a tank mix with other herbicides.
Directed spray application (Conventional-till) Postemergence Ground equipment	1.6 lb/gal EC [707-174] 2 lb/gal EC [707-145] [707-243]	0.25 lb/A	2	0.75 lb/A (all uses) 0.5 lb/A (preemergent uses)	NS	Use prohibited in CA. Application should be made when soybean plants are a minimum of 8 inches tall and before blooms appear. Application may be made in a minimum of 20 gal of water/A. Application may be made alone or as a tank mix with other herbicides.

(continued; footnotes follow.)

Table A (continued).

Site	Application Type Application Timing Application Equipment	Formulation [EPA Reg. No.]	Maximum Single Application Rate (ai)	Maximum No. of Applications Per Season	Maximum Seasonal Rate (ai)	Preharvest Interval (Days)	Use Limitations ¹
Soybeans (continued)							
	Broadcast application Fallow bed Ground or aerial equipment	1.6 lb/gal EC [707-174] 2 lb/gal EC [707-243]	0.5 lb/A	NS	0.5 lb/A (per fallow season)	NA	Applications may be made in a minimum of 20 gal of water/A using ground equipment or 5 gal/A by air (minimum of 10 gal/A by air in CA). Applications may be made alone or as a tank mix with other herbicides. A 7-day interval from treatment to planting is specified.
Spearmint							
	Broadcast or band application Dormant Ground equipment	1.6 lb/gal EC [707-174] 2 lb/gal EC [707-145] [707-243]	2.0 lb/A	1	NS	NA	See "Peppermint."
Spearmint							
	Broadcast or band application Dormant Ground equipment	1.6 lb/gal EC [CA930014] [MT930004] [NV930002] [SD940001] 1.6 lb/gal EC [IN840003] [MI890009] [WI880002] [WI950001]	2.0 lb/A	NS	NS	NA	See "Peppermint."
	Broadcast application Preemergence (dormant) Ground equipment		1.5 lb/A	NS	NS	NA	

(continued; footnotes follow.)

Table A (continued).

Site	Application Type Application Timing Application Equipment	Formulation [EPA Reg. No.]	Maximum Single Application Rate (ai)	Maximum No. of Applications Per Season	Maximum Seasonal Rate (ai)	Preharvest Interval (Days)	Use Limitations ¹
Stone fruits (including apricot, cherry, nectarine, peach, plum, and prune)							
	Directed spray application Dormant Ground equipment	1.6 lb/gal EC [707-174] 2 lb/gal EC [707-145] [707-243]	2.0 lb/A	NS	2.0 lb/A	NS	Applications may be made in a minimum of 40 gal of water/A. Applications may be made alone or as a tank mix with other herbicides. The use of any treated plants for feed or forage, the feeding or grazing of any treated area, and application after buds start to swell or when foliage or fruit are present are prohibited.
Taro							
	Broadcast or band application Preemergence (within one week after transplanting) Ground equipment	1.6 lb/gal EC [707-174] 2 lb/gal EC [707-243]	0.5 lb/A	NS	1.0 lb/A (all uses) 1.0 lb/A (all uses) 0.5 lb/A (multiple post-direct applications) 0.5 lb/A (preemergent uses)	6 (months) 6 (months)	Use limited to HI. Applications may be made in a minimum of 15 gal of water/A. Use limited to dryland taro grown in HI. Applications may be made in a minimum of 20 gal of water/A.
	Directed spray application Postemergence Ground equipment	1.6 lb/gal EC [707-174] 2 lb/gal EC [707-243]	0.25 lb/A	NS			

(continued; footnotes follow.)

Table A (continued).

Site	Application Type Application Timing Application Equipment	Formulation [EPA Reg. No.]	Maximum Single Application Rate (ai)	Maximum No. of Applications Per Season	Maximum Seasonal Rate (ai)	Preharvest Interval (Days)	Use Limitations ¹
Tree nuts (including almond, beech nut, Brazil nut, butternut, cashew, chestnut, chinquapin, filbert, hickory nut, macadamia nut, pecan, and walnut)							
Directed spray application Dormant Ground equipment	1.6 lb/gal EC [707-174]	2.0 lb/A	NS	2.0 lb/A	NS	NS	Applications may be made in a minimum of 40 gal of water/A. Applications may be made alone or as a tank mix with other herbicides. The use of any treated plants for feed or forage, the feeding or grazing of any treated area, and application after buds start to swell or when foliage or fruit are present are prohibited.
	2 lb/gal EC [707-145] [707-243]						
Walnuts (See also "Tree nuts")							
Directed spray application Nondormant Ground equipment	1.6 lb/gal EC [CA890012]	2.0 lb/A	NS	2.0 lb/A (nondormant season)	7		Use limited to CA. Application may be made in a minimum of 20 gal of water/A (minimum of 10 gal/A for certain tank mix applications). Application may be made alone or as a tank mix with other herbicides.

¹ A restricted entry interval (REI) of 24 hours has been established for the 1.6 and 2 lb/gal EC formulations (EPA Reg. Nos. 707-174 and 707-243, respectively). For fallow land uses, specific minimum treatment to planting intervals apply for direct-seeded and transplanted crops and are specified on the labels. These intervals must be amended as specified in endnote 2 of Table B.

Table B. Residue Chemistry Science Assessments for Reregistration of Oxyfluorfen.

GLN: Data Requirements	Current Tolerances, ppm [40 CFR]	Must Additional Data Be Submitted?	References ¹
860.1200: Directions for Use	N/A = Not Applicable	Yes ²	See Table A
860.1300: Plant Metabolism	N/A	No	00160143, 42865001 ³ , 42873301 ³ , 42913201 ³ , 92136027, 92136101, 92136114 ³ , 92136121
860.1300: Livestock Metabolism	N/A	No	42634701 ⁴ , 42670601 ⁵ , 43317701 ⁶
860.1340: Residue Analytical Methods - Plant commodities	N/A	Yes ⁷	00149622, 40223201, 92136028, 92136029, 92136065
- Animal commodities	N/A	Yes ⁸	00135077, 43307502 ⁶ , 43307503 ⁶ , 43346401 ⁶ , 92136030, 92136066
860.1380: Storage Stability	N/A	No	43424201 ⁹ , 43424202 ⁹ , 43813201 ¹⁰ , 43859801 ¹¹
860.1500: Magnitude of the Residue in Plants			
<u>Root and Tuber Vegetables Group</u>			
- Artichokes	0.05 (artichokes) [§180.381 (a)]	No	00145973, 43794007 ¹² , 92136031, 92136067
- Horseradish	0.05 (horseradish) [§180.381 (a)]	No	43973701 ¹³
- Taro corm	0.05 (taro corms and leaves) [§180.381 (b)]	No	40940301 ¹⁴
<u>Leaves of Root and Tuber Vegetables Group</u>			

Table B (continued).

GLN: Data Requirements	Current Tolerances, ppm [40 CFR]	Must Additional Data Be Submitted?	References ¹
- Taro foliage	0.05 (taro corms and leaves) [§180.381 (b)]	No	40940301 ¹⁴
<u>Bulb Vegetables Group</u>			
- Garlic	None established	No ¹⁵	
- Onions, dry bulb	0.05 (onions, dry bulb) [§180.381 (a)]	No	00126583, 43965501 ¹⁶ , 92136049, 92136083
<u>Brassica Leafy Vegetables Group</u>			
- Broccoli	0.05 (broccoli) [§180.381 (a)]	No ¹⁷	00148291, 40007203, 92136034, 92136070
- Cabbage	0.05 (cabbage) [§180.381 (a)]	No	00148291, 40007201, 43986301 ¹⁸ , 43986302 ¹⁸ , 92136035, 92136071
- Cauliflower	0.05 (cauliflower) [§180.381 (a)]	No	00148291, 40007202, 43986301 ¹⁸ , 43986302 ¹⁸ , 92136036, 92136072
<u>Legume Vegetables (Succulent or Dried) Group</u>			
- Chickpea (garbanzo beans)	0.05 (garbanzo beans) [§180.381 (b)]	No	41622701 ¹⁹
- Soybean seed and aspirated grain fractions	0.05 (soybeans) [§180.381 (a)]	No	00125632, 00136873, 92136053, 92136086
<u>Foliage of Legume Vegetables Group</u>			
- Soybean forage and hay	None established	Yes ²⁰	
<u>Pome Fruits Group</u>			
	0.05 (pome fruits group) [§180.381 (a)]	No	00079475, 00141092, 40223206, 43794001 ¹² , 92136050, 92136051, 92136084

Table B (continued).

GLN: Data Requirements	Current Tolerances, ppm [40 CFR]	Must Additional Data Be Submitted?	References ¹
<u>Stone Fruits Group</u>	0.05 (stone fruits group) [§180.381 (a)]	No	00036704, 00036705, 00036708, 00079475, 00110745, 00146340, 43794008 ¹² , 44025401 ²¹ , 92136054, 92136087
<u>Berries Group</u>			
- Blackberries	0.05 (blackberry) [§180.381 (b)]	No	43424201 ⁹
- Raspberries	0.05 (raspberry) [§180.381 (b)]	No	43424202 ⁹ , 43424203 ⁹
<u>Tree Nuts Group</u>	0.1 (almond hulls) [§180.381 (a)], 0.05 (tree nuts group, except almond hulls) [§180.381 (a)]	No	00036707, 00071290, 00071291, 00071292, 00071293, 00110745, 00141093, 40223206, 92136055, 92136088
<u>Cereal Grains Group</u>			
- Corn, field, grain and aspirated grain fractions	0.05 (corn, grain) [§180.381 (a)]	No	00135077, 43944801 ²² , 92136038, 92136074
<u>Forage, Fodder, Hay, and Straw of Cereal Grains Group</u>			
- Corn, field, forage and fodder	None established	No ²³	00135077, 92136038, 92136074
<u>Miscellaneous Commodities</u>			
- Avocados	0.05 (avocados) [§180.381 (a)]	No	00145972, 40223202, 43794002 ¹² , 92136032, 92136068
- Bananas	0.05 (bananas, including plantain) [§180.381 (a)]	Yes ²⁴	00102529, 92136033, 92136069
- Cacao beans	0.05 (cocoa beans) [§180.381 (a)]	No	PP#0E3898 ²⁵

Table B (continued).

GLN: Data Requirements	Current Tolerances, ppm [40 CFR]	Must Additional Data Be Submitted?	References ¹
- Coffee	0.05 (coffee) [§180.381 (a)]	No	00102529, 92136037, 92136073
- Cotton, seed, and gin byproducts	0.05 (cottonseed) [§180.381 (a)]	Yes ²⁶	00071290, 00071291, 00071292, 00071293, 00110747, 92136039, 92136040, 92136075
- Dates	0.05 (dates) [§180.381 (a)]	No	00145972, 40223205, 92136041, 92136076
- Fallow Land	None established	No ²⁷	40567001 ²⁸
- Feijoa	0.05 (feijoa) [§180.381 (a)]	No	PP#9E3779
- Figs	0.05 (figs) [§180.381 (a)]	No	00079475, 43794003 ¹² , 92136042, 92136077
- Grapes	0.05 (grapes) [§180.381 (a)]	No	00036703, 00110745, 00146340, 92136043, 92136078
- Guavas	0.05 (guava) [§180.381 (b)]	No	00158014, 92136044, 92136079
- Kiwifruits	0.05 (kiwifruit) [§180.381 (a)]	No	00145972, 40223203, 43794005 ¹² , 92136045, 92136080
- Mint, tops	0.1 (mint hay, peppermint and spearmint) [§180.381 (a)]	No	00071290, 00071291, 00071292, 00071293, 92136046, 92136047, 92136081
- Olives	0.05 (olives) [§180.381 (a)]	No	00145972, 40223204, 43794006 ¹² , 92136048, 92136082

Table B (continued).

GLN: Data Requirements	Current Tolerances, ppm [40 CFR]	Must Additional Data Be Submitted?	References ¹
- Papayas	0.05 (papaya) [§180.381 (b)]	No	40783201 ²⁹
- Persimmons	0.05 (persimmons) [§180.381 (a)]	No	PP#9E3718 ³⁰
- Pistachios	0.05 (pistachios) [§180.381 (a)]	No	00071290, 00071291, 00071292, 00071293, 92136056, 92136089
- Pomegranates	0.05 (pomegranates) [§180.381 (a)]	No	00145972, 43794004 ¹² , 92136052, 92136085
860.1520: Magnitude of the Residues in Processed Food/Feed			
- Apples	--	No	00141092, 92136051
- Coffee	--	Yes ³¹	Protocol ³²
- Corn, field, grain	--	No	43944801 ²²
- Cottonseed	0.25 (cottonseed oil) [§185.4600]	No	00071290, 00071291, 00071292, 00071293, 00110747, 92136040 ³³ , 92136075
- Figs	--	No	
- Grapes	--	No	
- Mint	0.25 (mint oil, peppermint and spearmint) [§185.4600]	No	00071290, 00071291, 00071292, 00071293, 92136046 ³³ , 92136047
- Olives	--	No	
- Plums	--	No	

Table B (continued).

GLN: Data Requirements	Current Tolerances, ppm [40 CFR]	Must Additional Data Be Submitted?	References ¹
- Soybeans	0.25 (soybean oil) [§185.4600]	No	43764901 ³⁴
860.1480: Magnitude of the Residue in Meat, Milk, Poultry, and Eggs			
- Milk and the Fat, Meat, and Meat Byproducts of Cattle, Goats, Hogs, Horses, and Sheep	0.05 (milk and the fat, meat, and mbyop of cattle, goat, hogs, horses, and sheep) [§180.381 (a)]	No	43152201 ³⁵
- Eggs and the Fat, Meat, and Meat Byproducts of Poultry	0.05 (eggs and the fat, meat, and mbyop of poultry) [§180.381 (a)]	No	43152202 ³⁵
860.1400: Nature and Magnitude of the Residue in Potable Water	N/A	N/A	
860.1400: Nature and Magnitude of the Residue in Fish	N/A	N/A	
860.1400: Nature and Magnitude of the Residue in Irrigated Crops	N/A	N/A	
860.1460: Magnitude of the Residue in Food-Handling Establishments	N/A	N/A	
860.1850: Rotational Crops (Confined)	N/A	No ³⁶	40567001 ²⁸
860.1900: Rotational Crops (Field)	N/A	No	

1. Bolded references were evaluated in the Oxyfluorfen Phase IV Review by S. Funk dated 03/22/91; all other references were reviewed as noted.

2. The product labels for the 1.6 lb/gal EC (EPA Reg. No. 707-174) and 2 lb/gal EC (EPA Reg. Nos. 707-145 and 707-243) formulations of oxyfluorfen should be amended in order to reflect the: (i) practical preharvest interval (PHI) for field corn, and (ii) the appropriate minimum treatment to planting intervals to support uses on fallow beds, and (iii) agreement between portions of the label(s) dealing with rotational crop plantback restrictions and minimum treatment to planting intervals for fallow bed uses.

Table B (continued).

For field corn, labels should be amended to specify a more practical PHI of 60-days for grains. The field trial data indicate that the presently established 30-day PHI does not agree with good agricultural practices and registered use.

For fallow beds, these amendments are required:

- All generic statements regarding "All Other Crops" and "Other Seeded Crops" must be removed from the labels.
- For raw agricultural commodities (RACs) listed as transplanted crops under the fallow bed uses portion of the label, which do not have tolerances for oxyfluorfen, the registrant may either remove them or conduct residue field trials for them in accordance with "OPPTS Test Guidelines 860.1500". Once the residue data are submitted a tolerance can be established for these RACs. They are: celery, pepper, tomato, and strawberry. The Agency considers any treatment of soil with oxyfluorfen 0 to 30 days prior to transplanting crops (seedlings) a direct pre-emergence use, and the use must have a tolerance. Although citrus is listed as a transplanted crop on the label for which there is no tolerance, citrus uses are exempted because the use is for non-bearing trees. Detectable residues in citrus fruits are not expected from this use.
- For crops listed as direct-seeded crops under the fallow bed uses portion of the label, the registrant should change the minimum treatment to planting intervals as follows: for leafy vegetables, 120 days; for root and tuber vegetables, 90 days; and for cereal grains, 10 months. The remaining minimum treatment to planting intervals are acceptable.

For label amendments required for rotational crops, see Endnote 34.

3. CBRS Nos. 12522, 13212, 12513, and 13338; DP Barcodes D194785, D199266, D194789, and D200012; 4/8/94; S. Knizner.
4. CBRS No. 11303, DP Barcode D187615, 6/10/93, S. Knizner.
5. CBRS No. 11526, DP Barcode D188906, 6/16/93, S. Knizner.
6. CBRS Nos. 14321 and 14323, DP Barcode D207134, 11/15/94, S. Knizner.
7. The registrant must submit a proposed enforcement method for the determination of oxyfluorfen *per se* in plant commodities. An independent laboratory validation (ILV) must accompany the method.
8. The registrant must submit a proposed enforcement method for the determination of oxyfluorfen *per se* in animal commodities. An independent laboratory validation (ILV) must accompany the method.
9. CBTS No. 14692, DP Barcode D209192, 2/17/95, G. Kramer.
10. CBRS No. 16436, DP Barcode D220695, 1/2/96, S. Knizner.
11. CBRS No. 17259, DP Barcode D221585, 7/2/96, C. Eiden.
12. CBRS No. 16313, DP Barcode D219897, 1/2/96, S. Knizner.
13. CBRS No. 17121, DP Barcode D225110, 5/8/96, C. Eiden.

Table B (continued).

15. Registered use patterns for garlic are supported by adequate residue data for onions (dry, bulb) as per 40 CFR 180.1(h). The registrant must propose a tolerance for residues of oxyfluorfen *per se* on garlic.
16. CBRS No. 17106, DP Barcode D224847, 5/8/96, C. Eiden.
17. The available Craven replacement residue data for cabbage and cauliflower will be translated to broccoli.
18. CBRS No. 17194, DP Barcode D225680, 6/18/96, C. Eiden.
19. PP#0E3908; CBTS No. 7096, DP Barcode None, 3/21/91, M. Nelson.
20. The Agency has indicated in 860.1000 that label restrictions on the feeding of treated soybean forage and hay are now an acceptable alternative to generating residue field data on these feed items. A recent reexamination of oxyfluorfen end-use products with use claims on soybeans reveal that feeding and grazing restrictions on the forage and hay of soybeans are not declared on the labels. Therefore, for purposes of reregistration, the registrant may impose label restrictions on the feeding and grazing by livestock animals on soybean forage and hay. Alternatively, the registrant may elect to submit residue data and propose tolerances for these commodities. For further guidance on the latter option, the registrant is referred to an Agency memorandum entitled "OPPTS test Guidelines 860.1500".
21. CBRS No. 17370, DP Barcode D227400, 08/23/96, C. Eiden.
22. CBRS No. 17049, DP Barcode D224356, 5/8/96, C. Eiden.
23. Because the registered use of oxyfluorfen on field corn is limited to the states of NC and SC in conjunction with a USDA program to eradicate "witchweed" (*Striga asiatica*) and because the forage and fodder from treated crops are not utilized to avoid the spread of this weed, residue chemistry data requirements for field corn fodder and forage should not be imposed (CBRS No. 9024, DP Barcode D171996, 4/16/92, F. Fort).
24. Translated labels from major Central American banana-producing countries must be submitted. As previously requested (CBRS No. 9024, DP Barcode D171996, 4/16/92, F. Fort), additional studies are also needed to reflect the maximum seasonal rate at the minimum PHI. Two applications of the 2 lb/gal EC formulation must be applied at 90-day intervals at the maximum label rate of 0.85 lb ai/A. A 3-day PHI must be stipulated. These studies should be conducted in Puerto Rico and two representative Central American countries.
25. PP#0E3898; CBTS No. 7003, DP Barcode None, 9/25/90, F. Griffith.
26. No additional data are required for cottonseed. However, the Agency currently recognizes cotton gin byproducts (commonly called gin trash which include the plant residues from ginning cotton consisting of burrs, leaves, stems, lint, immature seeds, and sand and/or dirt) as a RAC (Table I, OPPTS 860.1000). Data depicting the magnitude of oxyfluorfen residues of concern in/on cotton gin byproducts following application(s) of a representative formulation according to the maximum registered use patterns are required. Cotton must be harvested by commercial equipment (stripper and mechanical picker) to provide an adequate representation of plant residue for the ginning process. A minimum of three field trials for each type of harvesting (stripper and mechanical picker) are required, for a total of six field trials. An appropriate tolerance for this RAC should be proposed once acceptable data have been submitted and evaluated.
27. Pending required label amendments (see Endnote 2), the reregistration requirements for magnitude of the residue in fallow beds are fulfilled.

Table B (continued).

28. CBRS No. 17186, DP Barcode D225497, 5/29/96, C. Eiden.
29. PP#8E3677; CBTS No. 4288, DP Barcode None, 9/22/88, M. Nelson.
30. PP#9E3718; CBTS No. 4837, DP Barcode None, 4/14/89, M. Nelson.
31. ~~The requirements for a coffee processing study remains outstanding.~~ CBRS has evaluated the protocol for the conduct of a coffee processing study.
32. CBRS No. 12194, DP Barcode D193009, 8/31/93, S. Funk.
33. CBRS No. 16376, DP Barcode D220411, 11/1/95, S. Knizner.
34. CBRS No. 16374, DP Barcode D220316, 10/25/95, S. Knizner.
35. CBRS No. 13395, DP Barcode D200532, 8/19/94, S. Knizner.
36. Discrepancies exist on the current label(s) regarding plantback restrictions for rotational crops and minimum treatment to planting intervals for direct-seeded crops. The registrant must amend the product labels so that plantback intervals agree with minimum treatment to planting intervals for fallow bed uses. (See Endnote 2). Specifically, some of the minimum treatment to planting intervals listed under fallow bed uses for direct-seeded crops are greater than the 60-day plantback restriction listed for all direct-seeded rotational crops. The portion of the label(s) dealing with transplanted rotational crops must be **DELETED** altogether. The Agency considers any use of oxyfluorfen to soil 0 to 30 days prior to transplanting of crops a direct pre-emergence treatment, and tolerances are required for any crop receiving such treatment. Pending required label amendments described here and in Endnote 2, the reregistration requirements for confined rotational crops (860.1850) are fully satisfied.

TOLERANCE REASSESSMENT SUMMARY

The tolerance expression for oxyfluorfen has recently been amended (60 FR 62330, 12/6/95) to delete the metabolites of oxyfluorfen containing the diphenyl ether linkage. The established tolerances for plant and animal commodities [40 CFR §180.381 (a) and (b)] and processed commodities [40 CFR §185.4600] are now expressed in terms of oxyfluorfen *per se* [2-chloro-1-(3-ethoxy-4-nitrophenoxy)-4-(trifluoromethyl)benzene].

A summary of oxyfluorfen tolerance reassessments is presented in Table C.

Tolerances Listed Under 40 CFR §180.381 (a)

Adequate data are available to reassess the established tolerances for the following commodities, as defined: almond hulls; artichokes; avocados; broccoli; cabbage; cauliflower; cattle, fat; cattle, mby; cattle, meat; cocoa beans; coffee; corn, grain; cottonseed; dates; eggs; feijoa; figs; goat, fat; goat, mby; goat, meat; grapes; hogs, fat; hogs, mby; hogs, meat; horseradish; horses, fat; horses, mby; horses, meat; kiwifruit; olives; onions (dry bulb); milk; mint hay (peppermint and spearmint); persimmons; pistachios; pome fruits group; pomegranates; poultry, fat; poultry, mby; poultry, meat; sheep, fat; sheep, mby; sheep, meat; soybeans; stone fruits group; and tree nuts group (except almond hulls). Some commodity definitions must be corrected. See Table C for details.

The established tolerance for bananas (including plantains) could not be reassessed at this time because translated labels from major Central American banana-producing countries must be submitted and additional banana field trial data are required.

The available data for cabbage and cauliflower will be translated to broccoli. The registrant may wish to propose a tolerance of 0.05 ppm for head and stem Brassica subgroup. Concomitant with the establishment of this recommended subgroup tolerance, the individual tolerances for broccoli, cabbage, and cauliflower should be revoked.

The established tolerance for onions (dry, bulb) is adequate to cover the registered uses of oxyfluorfen on garlic as per 40 CFR 180.1(h). The registrant must propose a tolerance for garlic.

In conjunction with the reassessment of Section 409 food additive tolerances for oils of cottonseed, mint, and soybeans, adjustments in the tolerance levels of the following Section 408 tolerances are required: cottonseed (from 0.05 to 0.02 ppm), mint hay (from 0.10 to 0.05 ppm), and soybeans (from 0.05 to 0.02 ppm).

Tolerances for field corn fodder and forage are not warranted because oxyfluorfen's registered use on field corn is limited to the states of NC and SC in conjunction with a USDA program to eradicate "witchweed" (*Striga asiatica*); the treated forage and fodder of field corn are not fed to livestock to avoid the spread of the weed.

Based on the results of the available dairy cattle feeding study, the established tolerances for residues of oxyfluorfen *per se* in the milk, fat, meat, and meat by-products of cattle, goats, hogs, horses, and sheep should be lowered from 0.05 to 0.01 ppm. Similarly, adjustments in the tolerance levels of the following poultry commodities are required based on the results of the poultry feeding study: eggs (from 0.05 to 0.03 ppm); meat and meat by-products (from 0.05 to 0.01 ppm); and fat (from 0.05 to 0.2 ppm).

Tolerances To Be Proposed Under 40 CFR §180.381 (a)

A tolerance for residues of oxyfluorfen *per se* in/on cotton gin byproducts must be proposed once adequate field residue data, reflecting the maximum registered use pattern, have been submitted and evaluated. The registrant may impose label restrictions on the feeding of oxyfluorfen-treated soybean forage and hay in lieu of submitting field residue data and proposing tolerances for these soybean commodities. The registrant must propose a tolerance for garlic supported by residue data for onions (dry bulb).

Tolerances Listed Under 40 CFR §180.381 (b)

Adequate data are available to reassess the established tolerances for the following commodities, as defined: blackberry, garbanzo beans, guava, papaya, raspberry, and taro (corms and leaves). Some commodity definitions must be corrected. See Table C for details.

Tolerances Listed Under 40 CFR §185.4600

The established food additive tolerances for cottonseed oil, mint oil (peppermint and spearmint), and soybean oil should be revoked. Following re-evaluation of the available processing studies, CBRS has concluded that these food additive tolerances are not needed because the reassessed Section 408 tolerances should adequately cover any oxyfluorfen residues that may result during the processing of the respective RACs. A request for public comment concerning the revocation of these food additive tolerances has been issued (OPP-300373; FRL-4920-3, 12/14/94). The available processing data which are relevant for tolerance reassessment are briefly reiterated below.

- Cottonseed oil - Cottonseed oil is not a ready-to-eat commodity and a dilution factor of 11x for use in food has been provided to the Agency by the USDA Beltsville Human Nutrition Research Center. Taking this dilution factor into consideration, oxyfluorfen residues in/on ready-to-eat food items should not exceed the reassessed RAC tolerance of 0.02 ppm. Based on the highest average field trial (HAFT) residue of 0.01 ppm and a concentration factor of 3.3x, a Section 701 Maximum Residue Level (MRL) for residues of oxyfluorfen in cottonseed oil should be established at 0.04 ppm.

- Mint oil - Based on the HAFT residue of 0.03 ppm and an average concentration factor of 2.4x, residues in mint oil are calculated as 0.072 ppm. The residue level for mint oil is not appreciably higher than the reassessed RAC tolerances of 0.05 ppm. Therefore, the Section

409 food additive tolerance for mint oil is not required and should be revoked. No 701 MRL is warranted.

- Soybean oil - Dry seed obtained from soybeans treated at 5x the maximum application rate, bore non-quantifiable oxyfluorfen residues (<0.01 ppm). Soybeans (dry seed) contain 20% oil by weight, resulting in a maximum concentration factor of 5x for oil. Because non-quantifiable residues were found in/on dry soybean seeds following treatment at a rate equal to the maximum theoretical concentration factor, a processing study is not required. The oxyfluorfen soybean oil food additive tolerance is not required and should be revoked. No 701 MRL is warranted.

The requirements for a coffee processing study remain outstanding. The need for food additive tolerances on roasted coffee beans and instant coffee will be determined when the required processing study has been submitted and evaluated.

The Oxyfluorfen Phase 4 Reviews previously requested the registrant to propose a feed additive tolerance for dehydrated apple pomace based on observed concentration (12x) from an apple processing study. Because dehydrated apple pomace is no longer considered a significant livestock item (see Table I, OPPTS 860.1000), a feed additive tolerance for this item need not be proposed and established. Residues of oxyfluorfen did not concentrate in any other processed commodity, i.e., juice and wet apple pomace.

Pending Tolerance Petitions

PP#3F4229/FAP#3H5674: Rohm and Haas Company has submitted this petition for the establishment of tolerances for residues oxyfluorfen *per se* in/on: peanut nutmeat and hay at 0.05 ppm; peanut hulls at 0.10 ppm; and peanut meal and refined oil at 0.05 ppm. CBTS has recommended for the establishment of time-limited tolerances for residues of oxyfluorfen *per se* in/on peanut nutmeat and hay at 0.05 ppm provided revised Sections B and F are submitted (CBTS Nos. 16179 and 16180, DP Barcodes D218956 and D218957, 5/10/96, W. Cutchin).

PP#3E4175: Rohm and Haas Company has submitted this petition for the establishment of tolerances for residues oxyfluorfen and its metabolites containing the diphenyl ether linkage in/on grass forage at 0.05 ppm, grass hay at 0.05 ppm, and grass seed screenings at 0.05 ppm. These tolerances were proposed in support of regional registration for oxyfluorfen use in OR and WA. The petition is currently in reject status (CBTS No. 11025, DP Barcode D185392, 5/19/93, J. Morales).

PP#0F3856: Rohm and Haas Company has submitted this petition for the establishment of tolerances for residues oxyfluorfen and its metabolites containing the diphenyl ether linkage in/on citrus fruits crop group at 0.05 ppm. The petition is currently on hold status.

Table C. Tolerance Reassessment Summary for Oxyfluorfen.

Commodity	Current Tolerance (ppm)	Tolerance Reassessment (ppm)	Comment/ [Correct Commodity Definition]
Tolerances Listed Under 40 CFR §180.381 (a):			
Almond hulls	0.1	0.1	[Almonds, hulls]
Artichokes	0.05	0.05	
Avocados	0.05	0.05	
Bananas (including plantain)	0.05	TBD ¹	
Broccoli	0.05	0.05	The registrant may wish to propose a tolerance of 0.05 ppm for [Head and stem Brassica subgroup].
Cabbage	0.05	0.05	
Cauliflower	0.05	0.05	
Cattle, fat	0.05	0.01	
Cattle, mbyp	0.05	0.01	
Cattle, meat	0.05	0.01	
Cocoa beans	0.05	0.05	[Cacao beans]
Coffee	0.05	0.05	[Coffee beans, green]
Corn, grain	0.05	0.05	[Corn, field, grain]
Cottonseed	0.05	0.02	[Cotton, undelinted seed]
Dates	0.05	0.05	
Eggs	0.05	0.03	
Feijoa	0.05	0.05	[Feijoa (pineapple guava)]
Figs	.05	0.05	
Goat, fat	0.05	0.01	
Goat, mbyp	0.05	0.01	
Goat, meat	0.05	0.01	
Grapes	0.05	0.05	
Hogs, fat	0.05	0.01	
Hogs, mbyp	0.05	0.01	
Hogs, meat	0.05	0.01	
Horseradish	0.05	0.05	
Horses, fat	0.05	0.01	
Horses, mbyp	0.05	0.01	
Horses, meat	0.05	0.01	
Kiwifruit	0.05	0.05	[Kiwifruits]
Olives	0.05	0.05	
Onions (dry bulb)	0.05	0.05	[Onions, dry bulb (only)]
Milk	0.05	0.01	

Table C (continued).

Commodity	Current Tolerance (ppm)	Tolerance Reassessment (ppm)	Comment/ [Correct Commodity Definition]
Mint hay (peppermint and spearmint)	0.1	0.05	[Mint, tops (peppermint and spearmint)]
Persimmons	0.05	0.05	
Pistachios	0.05	0.05	
Pome fruits group	0.05	0.05	
Pomegranates	0.05	0.05	
Poultry, fat	0.05	0.2	
Poultry, mby	0.05	0.01	
Poultry, meat	0.05	0.01	
Sheep, fat	0.05	0.01	
Sheep, mby	0.05	0.01	
Sheep, meat	0.05	0.01	
Soybeans	0.05	0.02	
Stone fruits group	0.05	0.05	
Tree nuts group (except almond hulls)	0.05	0.05	[Tree nuts group]
Tolerances To Be Proposed Under 40 CFR §180.381 (a):			
Cotton, gin byproducts	None	TBD ¹	New RAC according to Table I (OPPTS 860.1000)
Garlic	None	0.05	Registrant must propose a tolerance for garlic supported by residue data for onions (dry bulb).
Soybean forage	None	TBD ¹	A feeding restriction may be established in lieu of proposing tolerances.
Soybean hay	None	TBD ¹	
Tolerances Listed Under 40 CFR §180.381 (b):			
Blackberry	0.05	0.05	Recently established under PP#5E04429 (60 FR 62330, 12/6/95) [Blackberries]
Garbanzo beans	0.05	0.05	[Chickpeas (beans, garbanzo)]
Guava	0.05	0.05	[Guavas]
Papaya	0.05	0.05	[Papayas]
Raspberry	0.05	0.05	Recently established under PP#5E04429 (60 FR 62330, 12/6/95) [Raspberries]

Commodity	Current Tolerance (ppm)	Tolerance Reassessment (ppm)	Comment/ [Correct Commodity Definition]
Taro (corms and leaves)	0.05	0.05	Separate tolerances should be established, each at 0.05 ppm for: [Taro, corm], [Taro, foliage]
Tolerances Listed Under 40 CFR §185.4600:			
Cottonseed oil	0.25	Revoke	CBRS has reassessed the available data for these processed commodities. Because residues of oxyfluorfen do not exceed the corresponding Section 408 RAC, the established food additive tolerances should be revoked.
Mint oil (peppermint and spearmint)	0.25	Revoke	
Soybean oil	0.25	Revoke	
Section 701 MRL That Needs to Be Established			
Cottonseed oil	None	0.04	

¹ TBD = To be determined. Reassessment of tolerance(s) cannot be made at this time because residue data are required.

CODEX HARMONIZATION

No Codex MRLs have been established for oxyfluorfen; therefore, issues of compatibility between Codex MRLs and U.S. tolerances do not exist.

AGENCY MEMORANDA RELEVANT TO REREGISTRATION

CB No.: 4288
DP Barcode: None
Subject: PP#8E3677 - Petition Review for Establishment of Tolerance(s) for Papaya.
From: M. Nelson
To: H. Jamerson
Dated: 9/22/88
MRID(s): 40783201

CB No.: 4837
DP Barcode: None
Subject: PP#9E3718 - Petition Review for Establishment of Tolerance(s) for
Persimmons.
From: M. Nelson
To: H. Jamerson
Dated: 4/14/89
MRID(s): None

CB No.: 4947
DP Barcode: None
Subject: PP#9E3716 - Petition Review for Establishment of Tolerance(s) for Taro
(Corm) and Taro (Leaves).
From: M. Nelson
To: H. Jamerson
Dated: 5/4/89
MRID(s): 40940301

CB No.: None
DP Barcode: None
Subject: PP#0F3856 - Oxyfluorfen (Goal) on Citrus Fruits Crop Group. Petition
Method Validation (PMV) Request.
From: F. Griffith
To: D. Marlow
Dated: 9/20/90
MRID(s): 41578401

To: J. Miller
Dated: 9/28/95
MRID(s): None

CB No.: 16374
DP Barcode: D220316
Subject: Oxyfluorfen. Soybean Processing Study.
From: S. Knizner
To: M. Wilhite
Dated: 10/25/95
MRID(s): 43764901

CB No.: 16376
DP Barcode: D220411
Subject: Oxyfluorfen. Reassessment of Section 409 Food Additive Tolerances for Oils of Cottonseed, Peppermint, Spearmint, and Soybeans.
From: S. Knizner
To: M. Wilhite
Dated: 11/1/95
MRID(s): None

CB No.: 16622
DP Barcode: D221731
Subject: Oxyfluorfen. Questions Regarding CBRS Review of Analytical Method, Rohm and Haas Company Letter Dated 12/12/95.
From: S. Knizner
To: M. Wilhite
Dated: 12/19/95
MRID(s): None

CB No.: 16436
DP Barcode: D220695
Subject: Oxyfluorfen. Storage Stability - Meat, Milk, and Eggs.
From: S. Knizner
To: M. Wilhite
Dated: 1/2/96
MRID(s): 43813201

CB No.: 16313
DP Barcode: D219897
Subject: Oxyfluorfen. Magnitude of the residue in Apple, Artichoke, Avocado,
Cherry, Fig, Kiwi, Olive and Pomegranate.
From: S. Knizner
To: M. Wilhite
Dated: 1/2/96
MRID(s): 43794001, 43794002, 43794003, 43794004, 43794005, 43794006, 43794007,
and 43794008

CB No.: 17049
DP Barcode: D224356
Subject: Oxyfluorfen. Residue Trial & Processing Study for Corn: GLN 171-4 (k &
l).
From: C. Eiden
To: P. Deschamp
Dated: 5/8/96
MRID(s): 43944801

CB No.: 17121
DP Barcode: D225110
Subject: Oxyfluorfen. Residue Trial Studies for Horseradish: GLN 171-4 (k).
From: C. Eiden
To: P. Deschamp
Dated: 5/8/96
MRID(s): 43973701

CB No.: 17106
DP Barcode: D224847
Subject: Oxyfluorfen. Residue Trial Studies for Onions: GLN 171-4 (k).
From: C. Eiden
To: P. Deschamp
Dated: 5/8/96
MRID(s): 43965501

CB Nos.: 16179 and 16180
DP Barcodes: D218956 and D218957
Subject: PP#3F4229/FAP#3H5674 Oxyfluorfen in or on Peanuts. Amendment Dated 8/23/95 in Response to CBTS Review. Review of Analytical Method and Residue Data. Rotational Crops Data.
From: W. Cutchin
To: D. McCall
Dated: 5/10/96
MRID(s): 405670-01, 437650-00 and 437568-02 through -05

CB No.: 17186
DP Barcode: D225497
Subject: Oxyfluorfen. Fallow Bed Uses and Rotational Crop Study (165-1).
From: C. Eiden
To: P. Deschamp
Dated: 5/29/96
MRID(s): 40567001

CB No.: 17194
DP Barcode: D225680
Subject: Oxyfluorfen. Residue Trial Studies for Head and Stem Brassica (Crop Subgroup 5A): Cabbage, Cauliflower, and Broccoli GLN 171-4(k).
From: C. Eiden
To: P. Deschamp
Dated: 6/18/96
MRID(s): 43986301 (2 vols.) & -02

CB No.: 17259
DP Barcode: D221585
Subject: Oxyfluorfen. Storage Stability on Various Crops: GLN 171-4(e)
From: C. Eiden
To: P. Deschamp
Dated: 7/2/96
MRID(s): 43859801

CB No.: 17370
DP Barcode: D227400
Subject: Oxyfluorfen. Magnitude of the residue in peaches: GLN 171-4(k)
From: C. Eiden
To: ???
Dated: xx/xx/96

MRID(s): 44025401

MASTER RECORD IDENTIFICATION NUMBERS

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92136073 Rohm and Haas Co. (1990) Rohm & Haas Company Phase 3 Reformat of MRID 00070878. Magnitude of Oxyfluorfen Residues in Coffee. Prepared by Rohm and Haas Co. 191 p.

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92136088 Rohm and Haas Co. (1990) Rohm & Haas Company Phase 3 Reformat of MRID 00099954 and Related MRIDs 00072718, 00072717, 00036707, 00098209, 40223206. Magnitude of Oxyfluorfen Residues in Tree nuts. Prepared by Rohm and Haas Co. 436 p.

92136089 Rohm and Haas Co. (1990) Rohm & Haas Company Phase 3 Reformat of MRID 00099954. Magnitude of Oxyfluorfen Residues in Pistachio: RAR Code Nos. 78-0413, 78-0414 and 78-0416. Prepared by Rohm and Haas Co. 32 p.

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Carbon 14 -Oxyfluorfen Metabolism by Alfalfa under Field Conditions: Rohm and Haas
Technical Report No. 34-90-27. Prepared by Rohm and Haas Co. 44 p.

OXYFLUORFEN

REREGISTRATION ELIGIBILITY DECISION:

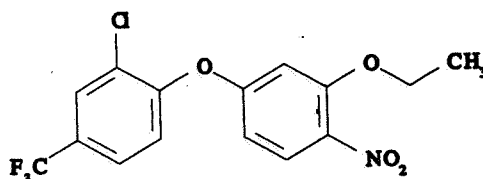
PRODUCT CHEMISTRY CONSIDERATIONS

Shaughnessy No. 111601; Case No. 2490

(CBRS No. 17193; DP Barcode D226225)

DESCRIPTION OF CHEMICAL

Oxyfluorfen [2-chloro-1-(3-ethoxy-4-nitrophenoxy)-4-(trifluoromethyl)benzene] is a selective herbicide registered for preemergence and/or postemergence control of certain annual broadleaf and grassy weeds on a variety of field crops, vegetables, and fruit trees.



Empirical Formula: $C_{15}H_{11}ClF_3NO_4$

Molecular Weight: 361.72

CAS Registry No.: 42874-03-3

Shaughnessy No.: 111601

IDENTIFICATION OF ACTIVE INGREDIENT

Oxyfluorfen is an orange to deep red brown crystalline solid with a melting point of 65-84 C. Oxyfluorfen is practically insoluble in water (0.1 ppm), but is readily soluble in most organic solvents.

MANUFACTURING-USE PRODUCTS

A search of the Reference Files System (REFS) conducted 7/17/96 identified a single oxyfluorfen manufacturing-use product (MP) registered under Shaughnessy No. 111601, the Rohm and Haas Company 70% technical (T; EPA Reg. No. 707-165). Only the Rohm and Haas 70% T/TGAI is subject to a reregistration eligibility decision.

REGULATORY BACKGROUND

The Oxyfluorfen Phase IV Review dated 3/22/91 by S. Funk determined that the available data concerning GLN 830.1550, and GLNs 830.1700, 830.1750, 830.6302 through 830.6304, and 830.7000 through 830.7950 for the Rohm and Haas 70% T met the acceptance criteria for Phase V review. Additional data were required concerning GLNs 830.1800 and 830.6313. Rohm and Haas has since developed a new manufacturing process; full-scale production was expected to begin in early 1996.

Additional data have been reviewed concerning the potential for formation of dibenzo-p-dioxins and dibenzofurans. Based on the manufacturing process and the composition of the starting materials, the formation of chlorinated dioxins is not expected in oxyfluorfen (CBRS No. 6085, 2/23/90, S. Funk and CBRS No. 17453, D228704, currently under review).

The current status of the product chemistry data requirements for the Rohm and Haas oxyfluorfen technical product is presented in the attached data summary table. Refer to this table for a listing of the outstanding product chemistry data requirements.

CONCLUSIONS

Additional generic and product-specific data are required for the Rohm and Haas 70% T/TGAI concerning GLNs 830.1550, 830.1700, 830.1750, 830.1800, 830.7300, 830.7840, 830.7950, and 830.7550. Provided that the registrant submits the data required in the attached data summary table for the 70% T and either certifies that the suppliers of beginning materials and the manufacturing process for the oxyfluorfen technical product have not changed since the last comprehensive product chemistry review or submits a complete updated product chemistry data package, CBRS has no objections to the reregistration of oxyfluorfen with respect to product chemistry data requirements.

AGENCY MEMORANDA CITED IN THIS DOCUMENT

CBRS No(s): 6085

Subject:

Product Chemistry Data Review for Technical Oxyfluorfen to Determine the Potential for Halogenated Dibenzo-p-Dioxin/Dibenzofuran Formation.

From: S. Funk

To: E. Feris

Dated: 2/23/90

MRID(s): 40478001

CBRS No(s): 8634

DP Barcode(s): D168713

Subject: Reregistration of Oxyfluorfen. Rohm & Haas Product Chemistry Considerations. Rereg. Case #2490; Chemical #111601.

From: K. Dockter

To: B. Sidwell/M. Wilhite

Dated: 1/10/92

MRID(s): 41891801

CBRS No(s): 17453

DP Barcode(s): D228704

Subject:

From: C. Eiden

To:

Dated: Under Review

MRID(s): 40478001, 40478002, 40966201, 41535801, 43837001

PRODUCT CHEMISTRY CITATIONS

Bibliographic citations include only MRIDs containing data which fulfill data requirements.

References (cited):

40478001 Carpenter, C. (1987) Update Product Chemistry Section to RH-2915: Project ID No. CRC-87-382. Unpublished compilation prepared by Rohm and Haas Co. 173 p.

40478002 Carpenter, C. (1987) Updated Product Chemistry Section to RH-2915, Physical and Chemical Properties: Project ID No. CRC-87-382. Unpublished study prepared by Rohm and Haas Co. 8 p.

40966201 Kelly, M.; Regetta, R. (1988) Goal Product Chemistry: Laboratory Project ID: CRC-88-320. Unpublished compilation prepared by Rohm and Haas Co. 170 p.

41535801 Berrier, J. (1990) Response to EPA Review Dated May 18, 1990: Product Chemistry: Lab Project Number: APR/SH-90-192. Unpublished study prepared by Rohm and Haas Co. 26 p.

41891801 Batra, R. (1991) Physical and Chemical Characterization Studies for RH-2915 (Oxyfluorfen): Lab Project Number: GPD/SH-91-36. Unpublished study prepared by Rohm and Haas Co. 65 p.

43837001 Bowers-Daines, M. (1995) Oxyfluorfen Technical: Changes to be Made in Manufacturing Process Submitted for Review by U.S. EPA: Lab Project Number: APR/SH-95-378: APR/SH-90-154. Unpublished study prepared by Rohm and Haas Co. 59 p.

Case No. 2490
Chemical No. 111601

Case Name: Oxyfluorfen
Registrant: Rohm and Haas Company
Product(s): 70% T (EPA Reg. No. 707-165)

PRODUCT CHEMISTRY DATA SUMMARY

Guideline Number	Requirement	Are Data Requirements Fulfilled? ^a	MRID Number ^b
830.1550	Product Identity and Disclosure of Ingredients	N ^c	40478001, 40966201, 43837001
830.1600	Starting Materials and Manufacturing Process	Y	40478001 ^d , 40966201, 41535801, 43837001
830.1670	Discussion of Formation of Impurities	Y	40478001, 40966201, 43837001
830.1700	Preliminary Analysis	N ^e	40478001, 40966201
830.1750	Certification of Ingredient Limits	N ^c	40478001, 40966201, 43837001
830.1800	Analytical Methods to Verify the Certified Limits	N ^f	40478001, 40966201
830.6302	Color	Y	40478002, 40966201
830.6303	Physical State	Y	40478002, 40966201
830.6304	Odor	Y	40478002, 40966201
830.7200	Melting Point	Y	40478002, 40966201
830.7220	Boiling Point	N/A ^g	40478002, 40966201
830.7300	Density, Bulk Density or Specific Gravity	N ^h	40478002, 40966201
830.7840	Solubility	N ^h	40478002, 40966201
830.7950	Vapor Pressure	N ^h	40478002, 40966201
830.7370	Dissociation Constant	N/A ⁱ	
830.7550	Octanol/Water Partition Coefficient	N ^h	40478002, 40966201
830.7000	pH	N/A ^j	
830.6313	Stability	Y	41891801 ^k

^a Y = Yes; N = No; N/A = Not Applicable.

^b All references were reviewed under CBRS No. 17453, D228704, currently under review, unless otherwise noted.

^c The adequacy of the submitted data in satisfying the requirements of 40 CFR §158.155 and §158.175 (830.1550 & 830.1750) cannot be assessed until the outstanding preliminary analysis data are available. In addition, nominal concentrations and certified limits must be submitted on EPA Form 8570-4 (Rev. 12/90).

^d CBRS No. 17453, D228704, currently under review and CBRS No. 6085, 2/23/90, S. Funk (for dioxins).

e The submitted data do not fully satisfy the data requirements of 40 CFR §158.170 (830.1700) because preliminary analysis of five batches of the 70% T manufactured using the new manufacturing process must be submitted once full-scale production has begun.

f The submitted data do not fully satisfy the data requirements of 40 CFR §158.180 (830.1800) because an enforcement method is required for each impurity present at $\geq 0.1\%$, and validation data must be submitted for enforcement analytical methods used for the determination of the active ingredient and impurities.

g Data are not required because the T/TGAI is a solid at room temperature.

h The submitted data do not fully satisfy the data requirements of 40 CFR §158.190 (830.7200, 830.7300, 830.7840, 830.7950, & 830.7550) because supporting raw data and a description of the analytical method used for each determination must be submitted.

i These data are not required because the molecular structure of oxyfluorfen indicates that dissociation will not occur.

j These data are not required because the T/TGAI is practically insoluble in water.

k CBRS No. 8634, D168713, 1/10/92, K. Dockter