



US Environmental Protection Agency Office of Pesticide Programs

Reregistration Eligibility Decision for Tetrachlorvinphos (TCVP)

When EPA concluded the organophosphate (OP) cumulative risk assessment in July 2006, all tolerance reassessment and reregistration eligibility decisions for individual OP pesticides were considered complete. OP Interim Reregistration Eligibility Decisions (IREDs), therefore, are considered completed REDs. OP tolerance reassessment decisions (TREDs) also are considered completed.

Combined PDF document consists of the following:

- Finalization of Interim Reregistration Eligibility Decisions (IREDs) and Interim Tolerance Reassessment and Risk Management Decisions (TREDs) for the Organophosphate Pesticides, and Completion of the Tolerance Reassessment and Reregistration Eligibility Process for the Organophosphate Pesticides (July 31, 2006)
- Tetrachlorvinphos (TCVP) TRED



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

OFFICE OF
PREVENTION, PESTICIDES AND TOXIC
SUBSTANCES

MEMORANDUM

DATE: July 31, 2006

SUBJECT: Finalization of Interim Reregistration Eligibility Decisions (IREDs) and Interim Tolerance Reassessment and Risk Management Decisions (TREDs) for the Organophosphate Pesticides, and Completion of the Tolerance Reassessment and Reregistration Eligibility Process for the Organophosphate Pesticides

FROM: Debra Edwards, Director
Special Review and Reregistration Division
Office of Pesticide Programs

TO: Jim Jones, Director
Office of Pesticide Programs

As you know, EPA has completed its assessment of the cumulative risks from the organophosphate (OP) class of pesticides as required by the Food Quality Protection Act of 1996. In addition, the individual OPs have also been subject to review through the individual-chemical review process. The Agency's review of individual OPs has resulted in the issuance of Interim Reregistration Eligibility Decisions (IREDs) for 22 OPs, interim Tolerance Reassessment and Risk Management Decisions (TREDs) for 8 OPs, and a Reregistration Eligibility Decision (RED) for one OP, malathion.¹ These 31 OPs are listed in Appendix A.

EPA has concluded, after completing its assessment of the cumulative risks associated with exposures to all of the OPs, that:

(1) the pesticides covered by the IREDs that were pending the results of the OP cumulative assessment (listed in Attachment A) are indeed eligible for reregistration; and

¹ Malathion is included in the OP cumulative assessment. However, the Agency has issued a RED for malathion, rather than an IRED, because the decision was signed on the same day as the completion of the OP cumulative assessment.

(2) the pesticide tolerances covered by the IREDs and TREDs that were pending the results of the OP cumulative assessment (listed in Attachment A) meet the safety standard under Section 408(b)(2) of the FFDCA.

Thus, with regard to the OPs, EPA has fulfilled its obligations as to FFDCA tolerance reassessment and FIFRA reregistration, other than product-specific reregistration.

The Special Review and Reregistration Division will be issuing data call-in notices for confirmatory data on two OPs, methidathion and phorate, for the reasons described in detail in the OP cumulative assessment. The specific studies that will be required are:

- 28-day repeated-dose toxicity study with methidathion oxon; and
- Drinking water monitoring study for phorate, phorate sulfoxide, and phorate sulfone in both source water (at the intake) and treated water for five community water systems in Palm Beach County, Florida and two near Lake Okechobee, Florida.

The cumulative risk assessment and supporting documents are available on the Agency's website at www.epa.gov/pesticides/cumulative and in the docket (EPA-HQ-OPP-2006-0618).

Attachment A:
Organophosphates included in the OP Cumulative Assessment

Chemical	Decision Document	Status
Acephate	IREDD	IREDD completed 9/2001
Azinphos-methyl (AZM)	IREDD	IREDD completed 10/2001
Bensulide	IREDD	IREDD completed 9/2000
Cadusafos	TREDD	TREDD completed 9/2000
Chlorethoxyphos	TREDD	TREDD completed 9/2000
Chlorpyrifos	IREDD	IREDD completed 9/2001
Coumaphos	TREDD	TREDD completed 2/2000
DDVP (Dichlorvos)	IREDD	IREDD completed 6/2006
Diazinon	IREDD	IREDD completed 7/2002
Dicrotophos	IREDD	IREDD completed 4/2002
Dimethoate	IREDD	IREDD completed 6/2006
Disulfoton	IREDD	IREDD completed 3/2002
Ethoprop	IREDD	IREDD completed 9/2001 IREDD addendum completed 2/2006
Fenitrothion	TREDD	TREDD completed 10/2000
Malathion	RED	RED completed 8/2006
Methamidophos	IREDD	IREDD completed 4/2002
Methidathion	IREDD	IREDD completed 4/2002
Methyl Parathion	IREDD	IREDD completed 5/2003
Naled	IREDD	IREDD completed 1/2002
Oxydemeton-methyl	IREDD	IREDD completed 8/2002
Phorate	IREDD	IREDD completed 3/2001
Phosalone	TREDD	TREDD completed 1/2001
Phosmet	IREDD	IREDD completed 10/2001
Phostebupirim	TREDD	TREDD completed 12/2000
Pirimiphos-methyl	IREDD	IREDD completed 6/2001
Profenofos	IREDD	IREDD completed 9/2000
Propetamphos	IREDD	IREDD completed 12/2000
Terbufos	IREDD	IREDD completed 9/2001
Tetrachlorvinphos	TREDD	TREDD completed 12/2002
Tribufos	IREDD	IREDD completed 12/2000
Trichlorfon	TREDD	TREDD completed 9/2001



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

OFFICE OF
PREVENTION, PESTICIDES
AND TOXIC SUBSTANCES

CERTIFIED MAIL

Dear Registrant:

This is to inform you that the Environmental Protection Agency (hereafter referred to as EPA or the Agency) has completed its review of the available data and public comments received related to the preliminary and revised risk assessments for the organophosphate pesticide tetrachlorvinphos. The public comment period on the revised risk assessment phase of the tolerance reassessment process is closed. Based on comments received during the public comment period and additional data received from the registrant, the Agency revised the human health risk assessment and made it available to the public on March 3, 2000. During Phase 5, all interested parties were invited to participate and provide comments and suggestions on ways the Agency might mitigate the estimated risks presented in the revised risk assessment. This public participation and comment period closed on May 29, 2000.

The major means by which the Agency reassesses tolerances is through its reregistration process. Each pesticide registered prior to 1984 is subject to comprehensive evaluation of its effects on human health and the environment. Such an evaluation includes a determination of whether the tolerances are safe. Since tetrachlorvinphos was registered in 1966, it is subject to reregistration. The Agency issued a reregistration eligibility decision (RED) for tetrachlorvinphos in 1995, prior to the passage of Food Quality and Protection Act of 1996 (FQPA). However, tetrachlorvinphos tolerances are subject to reassessment in accordance with the Federal, Food, Drug, and Cosmetic Act (FFDCA) as amended by FQPA. This Act requires EPA to re-evaluate existing tolerances to ensure that children and other sensitive populations are protected from pesticide risk.

Based on its review, EPA has identified risk mitigation measures that the Agency believes are necessary to address the human health risks associated with the current use of tetrachlorvinphos. EPA is now publishing its interim tolerance reassessment eligibility decision (TRED) which includes addenda to the 1995 reregistration eligibility decision and the risk management decisions for the current uses of tetrachlorvinphos. The tolerance reassessment decisions for tetrachlorvinphos will be finalized once the cumulative risks for all of the organophosphate pesticides are considered. The enclosed "Tolerance Reassessment Eligibility Decision for tetrachlorvinphos," which was approved on July 5, 2002, contains the Agency's

decision on the individual chemical tetrachlorvinphos.

A Notice of Availability for this is being published in the *Federal Register*. To obtain a copy of the TRED document, please contact the OPP Public Regulatory Docket (7502C), US EPA, Ariel Rios Building, 1200 Pennsylvania Avenue NW, Washington, DC 20460, telephone (703) 305-5805. Electronic copies of the interim TRED and all supporting documents are available on the Internet. See <http://www.epa.gov/pesticides/op>.

The TRED is based on the updated technical information found in the tetrachlorvinphos public docket. The docket not only includes background information and comments on the Agency's preliminary risk assessments, it also now includes the Agency's revised risk assessments for tetrachlorvinphos, and a document summarizing the Agency's Response to Comments. The Response to Comments document addresses corrections to the preliminary risk assessments submitted by chemical registrants, as well as responds to comments submitted by the general public and stakeholders during the comment period on the risk assessment. The docket will also include comments on the revised risk assessment, and any risk mitigation proposals submitted during Phase 5. For tetrachlorvinphos, a proposal was submitted by Boehringer Ingelheim, the technical registrant. Comments on mitigation were also submitted by USDA.

This document and the process used to develop it are the result of a pilot process to facilitate greater public involvement and participation in reregistration and/or tolerance reassessment decisions. As part of the Agency's effort to involve the public in the implementation of the Food Quality Protection Act of 1996 (FQPA), the Agency is undertaking a special effort to maintain open public dockets on the organophosphate pesticides and to engage the public in the reregistration and tolerance reassessment processes for these chemicals. This open process follows the guidance developed by the Tolerance Reassessment Advisory Committee (TRAC), a large multi-stakeholder advisory body that advised the Agency on implementing the new provisions of the FQPA. The reregistration and tolerance reassessment reviews for the organophosphate pesticides are following this new process.

Please note that the tetrachlorvinphos risk assessment and the attached interim TRED concern only this particular organophosphate. This TRED presents the Agency's conclusions on the dietary and residential risks posed by exposure to tetrachlorvinphos alone. It also includes an updated assessment of the worker risks associated with the use of tetrachlorvinphos. No assessment for ecological risk was performed since those risks were considered during reregistration in 1995 and no new data were submitted which would warrant a new assessment. Because the FQPA directs the Agency to consider available information on cumulative risk from substances sharing a common mechanism of toxicity, such as the toxicity expressed by the organophosphates through a common biochemical interaction with cholinesterase enzyme, the Agency will evaluate the cumulative risk posed by the entire organophosphate class of chemicals after considering the risks for the individual organophosphates. The Agency has decided to move forward with individual assessments and to identify mitigation measures necessary to address the human health risks associated with the current uses of tetrachlorvinphos. The

Agency will issue the final tolerance reassessment decision for tetrachlorvinphos and finalize decisions on reregistration eligibility once the cumulative risks for all of the organophosphates are considered.

This document contains a generic Data Call-In (DCI) that outlines further data requirements for this chemical. Note that a complete DCI, with all pertinent instructions, is being sent to registrants under separate cover.

The Agency has determined that tetrachlorvinphos will be eligible for reregistration provided that all the conditions identified in this document are satisfied, including implementation of the risk mitigation measures outlined in Section IV of the document. The Agency believes that current uses of tetrachlorvinphos may pose unreasonable adverse effects to human health and the environment, unless the risk mitigation measures identified herein are implemented. Accordingly, the Agency recommends that registrants implement these risk mitigation measures immediately. Sections IV and V of this TRED describe labeling amendments for end-use products and data requirements necessary to implement these mitigation measures. Instructions for registrants on submitting the revised labeling can be found in the set of instructions for product-specific data that accompanies this TRED.

Should a registrant fail to implement any of the risk mitigation measures outlined in this document, the Agency will continue to have concerns about the risks posed by tetrachlorvinphos. Where the Agency has identified any unreasonable adverse effect to human health, the Agency may at any time initiate appropriate regulatory action to address this concern. At that time, any affected person(s) may challenge the Agency's action.

If you have questions on this document or the label changes necessary for reregistration, please contact the Chemical Review Manager, Demson Fuller at (703)308-8062.

Sincerely,

Lois A. Rossi, Director
Special Review and
Reregistration Division

Attachment

**Interim Tolerance Reassessment Eligibility Decision and
Reregistration Eligibility Decision Addenda
for
Tetrachlorvinphos**

Case No. 0321

Tetrachlorvinphos Facts

EPA has assessed the risks of tetrachlorvinphos and completed a Report on FQPA Tolerance Reassessment Progress and Interim Risk Management Decision (or TRED) for this organophosphate (OP) pesticide. Provided that risk mitigation measures are adopted, individual, aggregate risks for tetrachlorvinphos are within acceptable levels.

EPA's next step is to consider the cumulative risks of the OP pesticides, which share a common mechanism of toxicity. The interim tolerance reassessment decision for tetrachlorvinphos will not be final until these cumulative risks also are considered. Further risk mitigation may be warranted at that time.

EPA completed a Reregistration Eligibility Decision (RED) before the Food Quality Protection Act (FQPA) of 1996 was enacted. At present, only food, occupational, and residential uses of tetrachlorvinphos are being reevaluated, and tolerances (legal limits for residues in food) must be reassessed to ensure that they meet the new safety standard effected by the FQPA.

EPA is reviewing the OP pesticides to determine whether they meet current health and safety standards. Older OPs need decisions about their eligibility for reregistration under FIFRA. OPs with food, drinking water, and other non-occupational exposures must be reassessed to make sure they meet the new FFDCSA safety standard, brought about by the FQPA.

The tetrachlorvinphos TRED was developed through the OP public participation process, which increases transparency and maximizes stakeholder involvement in EPA's development of risk assessments and risk management decisions. EPA worked extensively with affected parties to reach the decisions presented in this interim decision

The OP Pilot Public Participation Process

The organophosphates (OPs) are a group of related pesticides that affect the functioning of the nervous system. They are among EPA's highest priority for review in implementing the Food Quality Protection Act (FQPA) of 1996.

EPA encourages the public to participate in the review of the OP pesticides. Through a six-phased pilot public participation process, the Agency has released for review and comment its preliminary and revised scientific risk assessments for individual OPs. (Please contact the OP Docket, telephone 703-305-5805, or see EPA's web site, www.epa.gov/pesticides/op .)

EPA is exchanging information with stakeholders and the public about the OPs, their uses, and risks through Technical Briefings, stakeholder meetings, and other fora. USDA is coordinating input from growers and other OP pesticide users.

Based on current information from interested stakeholders and the public, EPA is making interim risk management decisions for individual OP pesticides. The Agency will make final decisions after considering the cumulative risks of the OPs. (Please see www.epa.gov/pesticides/cumulative.htm .)

document.

Uses

1. An insecticide, tetrachlorvinphos is currently applied dermally to livestock to control flies and mites; used as a feed-through (oral) larvicide in cattle, hogs, goats, and horses; in cattle ear tags to control flies; in poultry dust boxes to control poultry mites; and as paint on and sprays in poultry houses. Tetrachlorvinphos also is used as a dust/powder, aerosol, and pump spray on pets and in pet sleeping areas, and in collars and shampoos for direct treatment of pets. It is used as a spray to control nuisance and public health pests (flies) in and around refuse sites, recreational areas, and for limited outdoor use as premise sprays for fleas, ticks, chiggers, and mites, around kennels, yards, campgrounds, and parks, and along foot paths and roadways leading to such areas. No tetrachlorvinphos end-use products are currently registered for use on any plant commodity.
2. Approximately 900,000 lbs a.i. of tetrachlorvinphos are used annually, according to Agency and registrant estimates.

Health Effects

3. Tetrachlorvinphos can cause cholinesterase inhibition in humans; that is, it can overstimulate the nervous system causing nausea, dizziness, confusion, and at very high exposures (e.g., accidents or major spills), respiratory paralysis and death. Tetrachlorvinphos is classified as a Group C, possible human carcinogen. The cancer potency factor (Q_1^*) is 1.83×10^{-3} .

Risks

4. Dietary risks from eating food items containing residues of tetrachlorvinphos are below the level of concern for the entire U.S. population, including infants and children. Drinking water is not a significant source of exposure.
5. Residential handler and post application risks were also not of concern for all exposure scenarios. However, the Agency has concern over the potential for over-application of powder products. Labels need to be modified to specify how much product to apply to treat pets of different sizes. Additionally, based on discussions with stakeholders, EPA believes that directions for outdoor uses as premise sprays around kennels, yards, campgrounds, and parks, and along foot paths and roadways leading to such areas, must clearly limit use to spot treatments only.
6. Worker risks are of concern with the maximum level of protection for mixers, loaders, and applicators in poultry egg production operations applying wettable powder formulations with a low-pressure handwand and paint-on application of the EC formulation. In addition, worker risks exceeded the Agency's level of concern with baseline PPE for handlers engaging in

backpack, dusting, groundboom, and low pressure handwand activities. Further, the Agency is concerned about workers handling ear tags, mineral blocks, and pellets when these items are put into place. The Agency does not have data for these scenarios, however the Agency has concluded that gloves will mitigate potential concerns which result from dermal contact with these products.

Risk Mitigation

To reduce risks, the following mitigation measures are required:

Worker risks

7. Delete the paint-on use with emulsifiable concentrate (EC) formulations.
1. Restrict the use of low pressure handwands for wettable powder (WP) applications to spot treatment in poultry facilities and require double layer clothing, gloves, and dust/mist respirator for mixers, loaders, and applicators engaging in low pressure handwand activities using the WP formulations in egg and broiler facilities.
 - Double layer clothing, gloves, and dust/mist respirator for mixers, loaders, and applicators using dusting equipment to apply WP formulation as dusts.
 - Double layer clothing, gloves, and dust/mist respirator for mixers, loaders, and applicators engaging in paint-on activities using WP formulations.
 - Double layer clothing and gloves for workers when handling backrubber devices.
 - Single layer and gloves for loaders and others handling dust bags.
- f. Single layer clothing and gloves for mixers, loaders, and applicators engaging in groundboom activities using the EC and WP formulations.
 - Single layer clothing and gloves for mixers, loaders, and applicators engaging in low pressure handwand activities using the EC formulations in poultry facilities.
 - Single layer clothing and gloves for mixers, loaders, and applicators engaging in backpack spraying activities.
 - Single layer clothing and gloves for workers when handling ear tags, mineral blocks, and pellets (oral larvicide feed-through products).

Residential risks

- Modify directions for use to specify 1/3 oz. of powder for every 10 pounds of body weight of

the cat or dog.

- Restrict outdoor premise uses to spot treatments, one time a year, and along woody borders of kennels, yards, campgrounds, recreational parks, and footpaths and roadways leading to such areas.
- Prohibit the use of outdoor premise treatments by homeowners.

Other Concerns

- b. EPA has determined that labels for tetrachlorvinphos feed-through products for horses must state that the product is a cholinesterase inhibitor, describe signs of cholinesterase inhibition in horses, caution against use with other cholinesterase inhibiting compounds, and direct horse owners to consult a veterinarian before using products containing tetrachlorvinphos on debilitated, aged, breeding, pregnant or nursing animals.

Next Steps

- c. Numerous opportunities for public comment were offered as this decision was being developed. The tetrachlorvinphos TRED therefore is issued in final without a formal public comment period. (Please see www.epa.gov/pesticides/reregistration/status.htm or www.epa.gov/pesticides/op). The docket remains open, however, and any comments submitted in the future will be placed in this public docket.
- d. When EPA has considered the cumulative risks of the OP pesticides, the Agency will issue its final tolerance reassessment decision for tetrachlorvinphos and may request further risk mitigation measures. The Agency will revoke 8 tolerances and amend 16 tolerances for tetrachlorvinphos, now. For all OPs, tolerances will not be raised or established until cumulative risks have been considered.

TABLE OF CONTENTS

Executive Summary

I. Introduction

II. Chemical Overview

 A. Regulatory History

 B. Chemical Identification

 C. Use Profile

 D. Estimated Usage of Pesticide

III. Summary of Tetrachlorvinphos Risk Assessment

 A. Human Health Risk Assessment

 1. Dietary Risk from Food

 a. Toxicity

 b. Exposure

 c. FQPA Safety Factor

 d. Exposure Assumptions

 e. Food Risk Characterization

 2. Dietary Risk from Drinking Water

 3. Occupational and Residential Risk

 a. Toxicity

 b. Exposure

 1) Occupational Exposure

 2) Residential Exposure

 c. Occupational & Residential Handler Risk Summary

 1) Occupational Handler Risk

 2) Occupational Post Application Risk

 3) Horses

 d. Residential Risk Summary

 1) Residential Handler Risk

 2) Residential Post-Application Risk

 4. Aggregate Risk

IV. Interim Risk Management & Reregistration Decision

 A. Determination of Interim Reregistration Eligibility

 B. Summary of Phase 5 Comments and Responses

 C. Regulatory Position

 1. FQPA Assessment

 a. "Risk Cup" Determination

 b. Tolerance Summary

 2. Endocrine Disruptor Effects

 3. Label Modification

- D. Regulatory Rationale
 - 1. Dietary Mitigation
 - 2. Drinking Water.....
 - 3. Occupational Mitigation
 - 4. Residential Mitigation
 - 5. Other Concerns.....
- V. What Registrants Need to Do
 - A. Manufacturing Use Products
 - 1. Additional Generic Data Requirements
 - 2. Labeling for Manufacturing Use Products
 - B. End-Use Products
 - 1. Additional Generic Data Requirements
 - 2. Labeling for End-Use Products
 - C. Existing Stocks
 - D. Labeling Changes Summary Table
- VI. Related Documents and How to Access Them

Appendix A

Appendix B

Appendix C

Appendix D

TETRACHLORVINPHOS TEAM

Office of Pesticide Programs:

Health Effects Risk Assessment

**Susan Hanley
Christina Swartz
Jeff Dawson
Virginia Dobozy
Christine Olinger
Mike Metzger**

Use and Usage Analysis

**William Gross
Tim Kiely**

Registration Support

George Larocca

Risk Management

**Demson Fuller
John Leahy**

GLOSSARY OF TERMS AND ABBREVIATIONS

AE	Acid Equivalent
a.i.	Active Ingredient
AGDCI	Agricultural Data Call-In
ai	Active Ingredient
aPAD	Acute Population Adjusted Dose
AR	Anticipated Residue
ARC	Anticipated Residue Contribution
BCF	Bioconcentration Factor
CAS	Chemical Abstracts Service
CI	Cation
CNS	Central Nervous System
cPAD	Chronic Population Adjusted Dose
CSF	Confidential Statement of Formula
CFR	Code of Federal Regulations
CSFII	USDA Continuing Surveys for Food Intake by Individuals
DCI	Data Call-In
DEEM	Dietary Exposure Evaluation Model
DFR	Dislodgeable Foliar Residue
DRES	Dietary Risk Evaluation System
DWEL	Drinking Water Equivalent Level (DWEL) The DWEL represents a medium specific (i.e., drinking water) lifetime exposure at which adverse, noncarcinogenic health effects are not anticipated to occur.
DWLOC	Drinking Water Level of Comparison.
EC	Emulsifiable Concentrate Formulation
EEC	Estimated Environmental Concentration. The estimated pesticide concentration in an environment, such as a terrestrial ecosystem.
EP	End-Use Product
EPA	U.S. Environmental Protection Agency
FAO	Food and Agriculture Organization
FDA	Food and Drug Administration
FIFRA	Federal Insecticide, Fungicide, and Rodenticide Act
FFDCA	Federal Food, Drug, and Cosmetic Act
FQPA	Food Quality Protection Act
FOB	Functional Observation Battery
G	Granular Formulation
GENEEC	Tier I Surface Water Computer Model
GLC	Gas Liquid Chromatography
GLN	Guideline Number
GM	Geometric Mean
GRAS	Generally Recognized as Safe as Designated by FDA
HA	Health Advisory (HA). The HA values are used as informal guidance to municipalities and other organizations when emergency spills or contamination

	situations occur.
HAFT	Highest Average Field Trial
HDT	Highest Dose Tested
IR	Index Reservoir
LC ₅₀	Median Lethal Concentration. A statistically derived concentration of a substance that can be expected to cause death in 50% of test animals. It is usually expressed as the weight of substance per weight or volume of water, air or feed, e.g., mg/l, mg/kg or ppm.
LD ₅₀	Median Lethal Dose. A statistically derived single dose that can be expected to cause death in 50% of the test animals when administered by the route indicated (oral, dermal, inhalation). It is expressed as a weight of substance per unit weight of animal, e.g., mg/kg.
LEL	Lowest Effect Level
LOC	Level of Concern
LOD	Limit of Detection
LOAEL	Lowest Observed Adverse Effect Level
MATC	Maximum Acceptable Toxicant Concentration
MCLG	Maximum Contaminant Level Goal (MCLG) The MCLG is used by the Agency to regulate contaminants in drinking water under the Safe Drinking Water Act.
mg/kg/day	Milligram Per Kilogram Per Day
mg/L	Milligrams Per Liter
MOE	Margin of Exposure
MP	Manufacturing-Use Product
MPI	Maximum Permissible Intake
MRID	Master Record Identification (number). EPA's system of recording and tracking studies submitted.
NA	Not Applicable
N/A	Not Applicable
NAWQA	USGS National Water Quality Assessment
NOEC	No Observable Effect Concentration
NOEL	No Observed Effect Level
NOAEL	No Observed Adverse Effect Level
NPDES	National Pollutant Discharge Elimination System
NR	Not Required
OP	Organophosphate
OPP	EPA Office of Pesticide Programs
OPPTSEPA	Office of Prevention, Pesticides and Toxic Substances
Pa	pascal, the pressure exerted by a force of one newton acting on an area of one square meter.
PAD	Population Adjusted Dose
PADI	Provisional Acceptable Daily Intake
PAG	Pesticide Assessment Guideline
PAM	Pesticide Analytical Method
PCA	Percent Crop Area

PDP	USDA Pesticide Data Program
PHED	Pesticide Handler's Exposure Data
PHI	Preharvest Interval
ppb	Parts Per Billion
PPE	Personal Protective Equipment
ppm	Parts Per Million
PRN	Pesticide Registration Notice
PRZM/ EXAMS	Tier II Surface Water Computer Model
Q ₁ *	The Carcinogenic Potential of a Compound, Quantified by the EPA's Cancer Risk Model
RAC	Raw Agriculture Commodity
RBC	Red Blood Cell
RED	Reregistration Eligibility Decision
REI	Restricted Entry Interval
RfD	Reference Dose
RQ	Risk Quotient
RS	Registration Standard
RUP	Restricted Use Pesticide
SAP	Science Advisory Panel
SCI-GROW	Tier I Ground Water Computer Model
SF	Safety Factor
SLC	Single Layer Clothing
SLN	Special Local Need (Registrations Under Section 24(c) of FIFRA)
TC	Toxic Concentration. The concentration at which a substance produces a toxic effect.
TD	Toxic Dose. The dose at which a substance produces a toxic effect.
TEP	Typical End-Use Product
TGAI	Technical Grade Active Ingredient
TLC	Thin Layer Chromatography
TMRC	Theoretical Maximum Residue Contribution
torr	A unit of pressure needed to support a column of mercury 1 mm high under standard conditions.
TRR	Total Radioactive Residue
UF	Uncertainty Factor
μg/g	Micrograms Per Gram
μg/L	Micrograms Per Liter
USDA	United States Department of Agriculture
USGS	United States Geological Survey
UV	Ultraviolet
WHO	World Health Organization
WP	Wettable Powder
WPS	Worker Protection Standard

Executive Summary

EPA has completed its review of public comments on the revised tetrachlorvinphos risk assessments and is issuing its risk management decision for tetrachlorvinphos. There are currently 11 tolerances for tetrachlorvinphos. The decisions outlined in this document do not include the final tolerance reassessment decision for tetrachlorvinphos; however, some tolerance actions will be undertaken prior to completion of the final tolerance reassessment. The final tolerance reassessment decision for this chemical will be issued once the cumulative risks for all of the organophosphates are considered. The Agency may need to pursue further risk management measures for tetrachlorvinphos once cumulative risks are considered.

The RED for tetrachlorvinphos was completed in 1995. At that time, the Agency assessed the risk for dietary, occupational, ecological, and residential concerns. With the passage of FQPA, the tolerances for tetrachlorvinphos needed to be reassessed according to the FQPA safety standard. In this current assessment, the Agency looked at dietary, occupational, and residential concerns. This assessment was further updated by a change in the toxicological endpoint than that used in the 1995 RED.

The revised risk assessments are based on review of the required target data base supporting the use patterns of currently registered products and new information which has been recently submitted. The Agency invited stakeholders to provide proposals, ideas or suggestions on appropriate mitigation measures before the Agency issued its risk mitigation decision on tetrachlorvinphos. After considering the revised risks, as well as mitigation proposed by Boehringer Ingelheim and Hartz Mountain Corporation, the technical registrants of tetrachlorvinphos, and comments and mitigation suggestions from other interested parties, including USDA, EPA developed its risk management decision for tetrachlorvinphos. This decision is discussed fully in this document.

Tetrachlorvinphos is an organophosphate insecticide. It is currently applied dermally to livestock to control flies and mites; used as a feed-through (oral) larvicide in cattle, hogs, goats, and horses; in cattle ear tags to control flies; in poultry dust boxes to control poultry mites; and as paint on and sprays in poultry houses. Tetrachlorvinphos also is used as a dust/powder, aerosol, and pump spray on pets and in pet sleeping areas, and in collars and shampoos for direct treatment of pets. It is used as a spray to control nuisance and public health pests (flies) in and around refuse sites, recreational areas, and for general outdoor treatment. No tetrachlorvinphos end-use products are currently registered for use on any plant commodity.

Tetrachlorvinphos was first registered in 1966. It is formulated as a wettable powder, dust, granular, emulsifiable concentrate, impregnated material, ready to use spray, and pressurized aerosol. Use rates vary, depending on animal size, from 0.0004 lb ai/animal on poultry to a maximum of 0.0208 lb ai/animal on livestock. The use rate for pets is 0.016 lb ai/animal. An annual estimate of tetrachlorvinphos total domestic usage is 853,000 pounds ai for 480,000,000 animals treated. The largest market in terms of total pounds ai is poultry and poultry premises (728,000 lbs. ai). The uses with a high percentage of their total animals treated include horses (16%) and poultry (6%), and households with dogs and/or cats (10%).

Overall Risk Summary

Food risk, both acute and chronic, is below the Agency's level of concern. No dietary exposure to tetrachlorvinphos is expected through drinking water. There are no concerns for residential handlers or postapplication exposure based on chemical specific data provided by the registrant though some label modifications are necessary. There are no concerns for aggregate risks. There are concerns for mixer, loaders, and applicators using low pressure handwands on poultry and poultry premises. Additionally, there are concerns with occupational cancer risk.

Dietary Risk

Available data indicate that estimated acute, chronic, and cancer dietary risks are below EPA's level of concern. Based on the supported use patterns, no dietary exposure to tetrachlorvinphos is expected through drinking water. Therefore, no mitigation is warranted at this time for dietary exposure through food or drinking water.

Occupational Risk

Worker risks are of concern with the maximum level of protection for mixers, loaders, and applicators in poultry egg production operations applying wettable powder formulations with a low-pressure handwand (MOEs ranged from 14 - 80) and paint-on application of the EC formulation (MOEs ranged from 7 -55). Risk to other handlers can be mitigated with personal protective equipment. The Agency also has cancer risk concerns with some risks higher than 1×10^{-6} after adding PPE. The Agency will need the registrant to limit low-pressure handwand usage to "spot" treatment and delete the use of the paint-on EC formulation.

Residential Risk

Estimated short-term and carcinogenic risk for residential handlers are not of concern for all handler scenarios. Residential post application risks were also not of concern for all exposure scenarios.

Aggregate Risk

Aggregate risks for tetrachlorvinphos include dietary (food only), handler, and dermal post-application exposures for residential handlers (adults); and post-application dermal, oral (hand-to-mouth) and dietary (food only) exposures for toddlers. In addition, an aggregate cancer assessment was done for adults. Since dietary exposure through drinking water is not expected based on the use patterns, drinking water exposure is not included in the aggregate assessment. Aggregate acute, short-term, chronic, and cancer risks are not of concern. Likewise, aggregate risks for residential handlers are not of concern.

Ecological Risk

The Agency has not conducted a new risk assessment for the environmental fate and effects of tetrachlorvinphos for the TRED. The conclusions reached in 1995 remain unchanged.

Other Concerns

The Agency is concerned with tetrachlorvinphos feed-through products for horses. EPA believes that use of these products decrease cholinesterase levels in horses, and that until controlled studies show they pose no unacceptable risks to breeding horses, labels should carry warnings regarding the potential cholinergic effects and that these products have not been tested in breeding horses.

The Agency is issuing this interim TRED for tetrachlorvinphos, as announced in a Notice of Availability published in the *Federal Register*. This interim TRED document includes guidance and time frames for complying with any necessary label changes for products containing tetrachlorvinphos. As part of the process discussed by the TRAC, which sought to open up the process to interested parties, the Agency's risk assessments for tetrachlorvinphos have already been subject to several public comment periods, and a further comment period for tetrachlorvinphos was deemed unnecessary. Neither the tolerance reassessment nor the reregistration eligibility decision for tetrachlorvinphos can be considered final until the cumulative risks for all organophosphate pesticides are considered. The cumulative assessment may result in further risk mitigation measures for tetrachlorvinphos.

I. Introduction

The Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) was amended in 1988 to accelerate the reregistration of products with active ingredients registered prior to November 1, 1984. The amended Act calls for the development and submission of data to support the reregistration of an active ingredient, as well as a review of all submitted data by the U.S. Environmental Protection Agency (referred to as EPA or "the Agency"). Reregistration involves a thorough review of the scientific database underlying a pesticide's registration. The purpose of the Agency's review is to reassess the potential hazards arising from the currently registered uses of the pesticide; to determine the need for additional data on health and environmental effects; and to determine whether the pesticide meets the "no unreasonable adverse effects" criteria of FIFRA.

On August 3, 1996, the Food Quality Protection Act of 1996 (FQPA) was signed into law. This Act amends FIFRA to require tolerance reassessment of all existing tolerances. The Agency had decided that, for those chemicals that have tolerances and are undergoing reregistration, the tolerance reassessment will be initiated through this reregistration process. It also requires that by 2006, EPA must review all tolerances in effect on the day before the date of the enactment of the FQPA, which was August 3, 1996. FQPA also amends the FFDCA to require a safety finding in tolerance reassessment based on factors including an assessment of cumulative effects of chemicals with a common mechanism of toxicity. Tetrachlorvinphos belongs to a group of pesticides called

organophosphates, which share a common mechanism of toxicity - they all affect the nervous system by inhibiting cholinesterase. Although FQPA significantly affects the Agency's reregistration process, it does not amend any of the existing reregistration deadlines. Therefore, the Agency is continuing its reregistration program while it resolves the remaining issues associated with the implementation of FQPA.

The implementation of FQPA has required the Agency to revisit some of its existing policies relating to the determination and regulation of dietary risk, and has also raised a number of new issues for which policies need to be created. These issues were refined and developed through collaboration between the Agency and the Tolerance Reassessment Advisory Committee (TRAC), which was composed of representatives from industry, environmental groups, and other interested parties. The TRAC identified the following science policy issues it believed were key to the implementation of FQPA and tolerance reassessment:

- Applying the FQPA 10-Fold Safety Factor
- Whether and How to Use "Monte Carlo" Analyses in Dietary Exposure Assessments
- How to Interpret "No Detectable Residues" in Dietary Exposure Assessments
- Refining Dietary (Food) Exposure Estimates
- Refining Dietary (Drinking Water) Exposure Estimates
- Assessing Residential Exposure
- Aggregating Exposure from all Non-Occupational Sources
- How to Conduct a Cumulative Risk Assessment for Organophosphate or Other Pesticides with a Common Mechanism of Toxicity
- Selection of Appropriate Toxicity Endpoints for Risk Assessments of Organophosphates
- Whether and How to Use Data Derived from Human Studies

The process developed by the TRAC calls for EPA to provide one or more documents for public comment on each of the policy issues described above. Each of these issues is evolving and in a different stage of refinement. Some issue papers have already been published for comment in the Federal Register and others will be published shortly.

In addition to the policy issues that resulted from the TRAC process, the Agency issued, on Sept. 29, 2000, a Pesticide Registration Notice (PR 2000-9) that presents EPA's approach for managing risks from organophosphate pesticides to occupational users. The Worker PR Notice describes the Agency's baseline approach to managing risks to handlers and workers who may be exposed to organophosphate pesticides, and the Agency expects that other types of chemicals will be handled similarly. Generally, basic protective measures such as closed mixing and loading systems, enclosed cab equipment, or protective clothing, as well as increased reentry intervals will be necessary for most uses where current risk assessments indicate a risk and such protective measures are feasible. The policy also states that the Agency will assess each pesticide individually, and based upon the risk assessment, determine the need for specific measures tailored to the potential risks of the chemical. The measures included in this interim RED are consistent with the Worker Pesticide Registration Notice.

This document consists of six sections. Section I contains the regulatory framework for reregistration/tolerance reassessment as well as descriptions of the process developed by TRAC for public comment on science policy issues for the organophosphate pesticides and the worker risk management PR notice. Section II provides a profile of the use and usage of the chemical. Section III gives an overview of the revised human health risk assessment resulting from public comments and other information. Section IV presents the Agency's interim decision on tolerance reassessment eligibility and risk management decisions. Section V summarizes the label changes necessary to implement the risk mitigation measures outlined in Section IV. Section VI provides information on how to access related documents. Finally, the Appendices lists Data Call-In (DCI) information. The revised risk assessments and related addenda are not included in this document, but are available on the Agency's web page www.epa.gov/pesticides/op, and in the Public Docket.

II. Chemical Overview

A. Regulatory History

Tetrachlorvinphos was initially registered for use in the United States in 1966 by the U.S. Department of Agriculture. The original registrant of technical tetrachlorvinphos was Shell Chemical. The registration was subsequently transferred to E.I. duPont Nemours. In September, 1992, DuPont transferred ownership of technical tetrachlorvinphos data to Boehringer Ingelheim Animal Health Inc. (formerly Fermenta Animal Health Company) and Hartz Mountain Corporation. Boehringer and Hartz each received their own technical grade product registrations in 1992. DuPont voluntarily canceled its registration in December 1993. Boehringer is responsible for supplying generic data supporting livestock uses and Hartz is responsible for supplying generic data supporting pet uses.

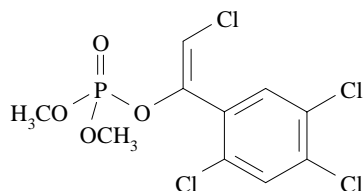
Tetrachlorvinphos was registered for use on various vegetables, feed crops, livestock, pet animals, and in or around buildings. However, the crop uses were voluntarily canceled in 1987. Currently, the primary uses of tetrachlorvinphos are for the control of manure flies in livestock applied as a feed through in the form of feed additives; flies and mites in livestock building premises applied as dusts and sprays; and ticks and fleas on domestic pets applied as dusts, sprays, dips, and collars.

A reregistration eligibility decision (RED) was issued for tetrachlorvinphos in 1995. Based on the reregistration eligibility decision, confirmatory data describing the residues in tissues resulting from dermal and feed-through (oral) larvicide uses in livestock are required. The requirement for the livestock use was deferred in 1995 because the feed additive tolerance was expected to be proposed for revocation; it is however, not going to be revoked. Therefore, these data are now required.

This interim tolerance reassessment review is the Agency's first reevaluation of tetrachlorvinphos since its reregistration in 1995.

E. Chemical Identification

Tetrachlorvinphos:



- **Common Name:** Tetrachlorvinphos
- **Chemical name:** (Z)-2-chloro-1-(2,4,5-trichlorophenyl) vinyl dimethyl phosphate
- **Chemical family:** Organophosphate
- **Case number:** 0321
- **CAS registry number:** 2248-79-9 [(Z) - isomer]
22350-76-1 [(E) - isomer]
961-11-5 [mixed isomers]
- **OPP chemical code:** 083701
- **Empirical formula:** C₁₀H₉Cl₄O₄P
- **Molecular weight:** 366.0
- **Trade and other names:** Rabon , Gardona
- **Basic manufacturers:** Boehringer Ingelheim Animal Health Inc.
Hartz Mountain Corporation

Technical tetrachlorvinphos is a tan to brown crystalline solid with a melting point of 93-98° C and a bulk density of 50-55 lb/ cu ft. The solubility of tetrachlorvinphos in water at 24° C is 15 ppm. Tetrachlorvinphos has limited solubility in most aromatic hydrocarbons (i.e., 40 ppm in chloroform and dichloromethane, 20 ppm in acetone, and 8 ppm in xylene at 0° C).

F. Use Profile

The following information is based on the currently registered uses of tetrachlorvinphos:

Type of Pesticide: Insecticide

Summary of Use Sites:

<u>Feed:</u>	Cattle feedlots
<u>Food:</u>	Agricultural/Farm Structures/Buildings and Equipment, Cattle Feedlots, Beef Cattle, Dairy Cattle, Swine, Livestock, Poultry
<u>Residential:</u>	Cats, Dogs, Domestic Indoor premises
<u>Public Health:</u>	Flies, Ticks
<u>Nonfood:</u>	Horses, Mink, Recreational Areas, Refuse/Solid Waste Sites (Outdoor)
Target Pests:	Fleas, ticks, lice, flies (adult and larvae), chiggers, mites, spiders, wasps, and cattle grubs

Formulation Types Registered:

Technical:	98.7% a.i.
Wettable powder:	50% a.i.
Dust	1% to 3%
Granular:	0.2 % to 7.8% a. i. One product 97.3 % a. i.
Impregnated material:	13.7 % to 14.55 % a. i.
Ready-to Use Spray:	1% to 2% a.i.
Pressurized liquid:	1.1% a.i.
Emulsifiable concentrate	3% to 24% a.i.

Method and Rates of Application:

Application methods include: dip applications to pets, backrubber devices in cattle lots, hand and power sprayers, groundboom applications in poultry facilities, mineral blocks, livestock feed supplements, poultry dust boxes and plungers and shaker cans, pour on treatments to livestock, paint on treatments in poultry facilities, pressurized aerosol cans and pump sprays for pets, pet collars, and cattle ear tags.

Use rates vary from a minimum of 0.0004 lb ai/animal to a maximum of 0.0208 lb ai/animal. The use rate for pets is approximately 0.016 lb ai/animal.

Use Classification: Tetrachlorvinphos is a general use pesticide. Although tetrachlorvinphos is a general use pesticide, there are several products classified as a restricted use due to high acute toxicity.

G. Estimated Usage of Pesticide

This section summarizes the best estimates available for many of the pesticide uses of tetrachlorvinphos based on available pesticide usage information for 1997 and 1998. A full listing of all uses of tetrachlorvinphos, with the corresponding use and usage data for each site, has been completed and is in the “Quantitative Use Assessment” document, which is available in the public docket and the EPA pesticide’s web site. The data, reported on an aggregate and site basis, reflect annual fluctuations in use patterns as well as the variability in using data from various information sources. Approximately 900,000 lbs a.i. of tetrachlorvinphos are used annually, according to Agency and registrant estimates.

Table 1. Tetrachlorvinphos Estimated Usage for Representative Sites

Site	Lbs. Active Ingredient Applied (000)		Percent Treated	
	Wtd Avg	Est Max	Wtd Avg	Est Max
Beef Cattle	219	439	2%	3%
Dairy Cattle	68	136	1%	3%
Horses	3	6	6%	31%
Poultry	466	932	6%	11%
Swine	56	111	2%	3%
Dogs and Cats	97	193	10%	20%

III. Summary of Tetrachlorvinphos Risk Assessment

The following is a summary of EPA’s human health risk findings for the organophosphate pesticide tetrachlorvinphos, as fully presented in the documents listed below:

- “Tetrachlorvinphos: Summary of Revised Residential Handler and Postapplication Toddler Exposure Risk” dated April 1, 2002
- “Further Revisions to Occupational Risk Assessment for Uses in the Poultry and Cattle Production Industries” dated March 28, 2002
- “Tetrachlorvinphos. Addendum to the HED Human Health Risk Assessment” dated April 5, 2002
- “Addendum to the Tetrachlorvinphos Occupational and Residential Exposure Risk Revision for the Reregistration Evaluation Decision” dated February 4, 2001
- “Tetrachlorvinphos: Addendum for Residential Exposures using updated Standard

Operating Procedures for Residential Exposure” dated June 8, 2001

- Addenda to Previous Occupational and Residential Risk Assessment (February 15, 2001)
- “Tetrachlorvinphos: Revised Occupational and Residential Exposure and Risk Assessment,” dated October 25, 1999
- “Tetrachlorvinphos: Revised Human Health Risk Assessment,” dated December 8, 1999
- “Tetrachlorvinphos, The Revised HED Chapter of the Reregistration Eligibility Decision Document” dated April 1, 1998

The purpose of this summary is to assist the reader by identifying the key features and findings of the risk assessments, and to enhance understanding of the conclusions reached in the assessments. The risk assessments presented here form the basis of the Agency's risk management decision for tetrachlorvinphos; the Agency must consider cumulative risks of all the organophosphate pesticides before any final decisions can be made.

A. Human Health Risk Assessment

EPA issued its preliminary human health risk assessment for tetrachlorvinphos in April 1998. This assessment was amended in November 1998 to incorporate toxicological endpoints for short-and intermediate-term risk. Consequently, the occupational/residential assessment was revised to reflect the new endpoints (November 1998).

In response to studies submitted by Hartz and other public comments received during Phase 3 of the public participation process, the occupational and residential risk assessment was further updated and refined on October 25, 1999. During this period, Hartz also committed to providing additional studies to support pet uses. On December 8, 1999, the Human Health Risk Assessment was revised to incorporate changes to the residential assessment and new Quantitative Usage Analysis (QUA) information.

On February 15, 2001, the Occupational Risk Assessment was revised to incorporate new usage information obtained by the Agency from key states that produced poultry including area treated, equipment used, and typical application rates. On June 8, 2001, the Residential Risk Assessment was again refined to reflect recent changes in the Residential Standard Operating Procedures (SOP's), as recommended by the FIFRA Scientific Advisory Panel (SAP). A meeting was held with Hartz in July 2001. Hartz submitted exposure and toxicity studies in November 2001. On February 4, 2002, the residential assessment was refined further to incorporate new applicator and postapplication exposure data submitted by Hartz; the toxicity study did not result in a change in the risk assessment. The residential assessment was again refined on April 1, 2002 to incorporate changes to the toxicological endpoint.

On April 5, 2002, the Human Health Risk assessment was again revised to reflect a recalculation of the short and intermediate term endpoint, new residue data to assess dietary concerns, and the new occupational and residential data mentioned above.

1. Dietary Risk from Food

a. Toxicity

The Agency has reviewed all toxicity studies submitted and determined that the toxicity database is essentially complete and supports a tolerance reassessment determination for all currently registered uses. The interim determination pertains only to tetrachlorvinphos alone and does not consider the cumulative risk from all other organophosphates. Further details on the toxicity of tetrachlorvinphos can be found in the April 5, 2002, Human Health Risk Assessment, and the March 6, 1995, "Health Effects Division Carcinogenicity Peer Review Committee Report." A brief overview of the studies used for the dietary risk assessment and other relevant information is outlined in Table 2.

b. FQPA Safety Factor

An uncertainty factor of 100 (the standard uncertainty factor) to account for both interspecies extrapolation and intraspecies variability was applied to both acute and chronic dietary risk assessments. The FQPA safety factor was reduced to 1X for tetrachlorvinphos due to the completeness of the toxicology database (developmental toxicity study, 2-generation reproduction study, acute and subchronic neurotoxicity studies with no treatment related neuropathology observed), lack of increased susceptibility in pre and post natal studies, and adequacy of the available exposure data. The Agency believes that the assumptions and models used in the assessments do not underestimate the potential risk for infants and children.

Table 2. Summary of Toxicological Endpoints and Other Factors Used in the Human Dietary Risk Assessment of Tetrachlorvinphos

Assessment	Dose	Endpoint	Study	UF	FQPA Safety Factor	aPAD/cPAD
Acute Dietary	NOAEL = 6.7 mg/kg/day	Plasma/RBC ChE Inhibition at 13 weeks	Subchronic Rat MRID 43371201	100	1X	0.067 mg/kg/day
Chronic Dietary	NOAEL = 4.23 mg/kg/day	Histological liver and adrenal changes (LOAEL= 43.2); reduced weight gain/plasma ChE Inhibition in females	Chronic Rat MRID 42980901	100	1X	0.0423 mg/kg/day
Cancer	Q* = 1.83 x 10 ⁻³	Based on adenomas/carcinomas and pheochromocytomas	Mouse carcinogenicity MRID 00126039	N/A	N/A	N/A

c. Population Adjusted Dose (PAD)

The PAD is a relatively new term that characterizes the dietary risk of a chemical, and reflects the Reference Dose, either acute or chronic, that has been adjusted to account for the FQPA safety factor (i.e., RfD/FQPA safety factor). In the case of tetrachlorvinphos, the FQPA safety factor is 1; therefore, the acute or chronic RfD is equal to the acute or chronic PAD. A risk estimate that is less than 100 % of the acute or chronic PAD is not a risk concern.

d. Exposure Assumptions

Acute and chronic dietary exposure and risk analyses for tetrachlorvinphos were conducted with the Dietary Exposure Evaluation Model (DEEM™). DEEM incorporates consumption data generated in USDA's Continuing Surveys of Food Intakes by Individuals (CSFII), 1989-91. For the acute dietary risk assessment, the entire distribution of single day food consumption events was combined with a distribution of residues. This is known as a probabilistic analysis. Risk is reported at the 99.9th percentile of exposure to obtain an exposure estimate in mg/kg/day. For the chronic dietary risk assessment, the three-day average food consumption for each sub-population member was combined with average residues to determine average exposure in mg/kg/day.

In the case of tetrachlorvinphos, a probabilistic acute dietary analysis was conducted using USDA Pesticide Data Program (PDP) monitoring data, metabolism studies, calculated livestock anticipated residues, and percent livestock treated information. Monitoring data from the USDA Food Safety and Inspection Service (FSIS) were also considered for characterization purposes only. FSIS analyzed livestock tissues and milk for tetrachlorvinphos during 1993-2000.

For the acute assessment, a tier 3 probabilistic analysis was completed using the acute anticipated residues, monitoring data, and livestock usage data. For the chronic assessment, a tier 2 analysis was conducted using anticipated residues in livestock commodities. For both the acute and the chronic assessments, use of refined anticipated residues in livestock commodities is still considered to be conservative because of the type of data used (i.e., results of livestock metabolism studies) and because no refinements were made for reduction of residues during cooking/baking.

e. Food Risk Characterization

Generally, a dietary risk estimate that is less than 100% of the acute and chronic PAD is not of concern. The acute dietary risk from residues of tetrachlorvinphos in food alone is not of concern at the 99.9th percentile. The most highly exposed subgroup was children 1-6 years, with 8% of the acute PAD occupied. The chronic dietary risk from food alone is well below the Agency's level of concern. The most highly exposed subgroup is children 1 to 6 years old with < 1% of the chronic PAD occupied.

Using anticipated residues and percent livestock treated data the dietary cancer risk is estimated to be 2×10^{-7} for the general U.S. population, which is below the Agency's level of concern for carcinogenic dietary risk. Results of acute and chronic dietary risk analyses are presented in Table

3 below.

Table 3. Tetrachlorvinphos: Acute and Chronic Dietary Exposure and Risk

Population Subgroup	Acute Dietary Exposure 99.9th Percentile	Chronic Dietary Exposure	
	%aPAD	%cPAD	Cancer
U.S. Population	4	<1	2×10^{-7}
All infants (<1 yr)	<1	<1	N/A ^a
Children (1-6 yrs)	8	<1	
Children (7-12 yrs)	5	<1	
Females (13-50 yrs)	4	<1	
Males (13-19 yrs)	5	<1	
Males (20+ yrs)	4	<1	
Seniors (55+ yrs)	3	<1	

^a The Agency generally does not assess cancer risk for children. Agency policy states that when the low dose linear extrapolation approach (Q*) is used for estimating cancer risk for both children and adults, cancer risk for the “general population” which includes infants and children, should be presented. Therefore, the estimate of 0.000093 mg/kg/day for the general U.S. population corresponds to a lifetime cancer risk of approximately 2.7×10^{-7} , which is below the Agency’s level of concern.

2. Dietary Risk from Drinking Water

The registered uses of tetrachlorvinphos allow use outdoors for the purpose of treating limited areas near kennels, barns, recreational and picnic areas and other outdoor living areas. However, the area of coverage is generally small, less than one acre in most instances. Therefore, potential for tetrachlorvinphos to contaminate drinking water sources is very small and a drinking water assessment was not conducted.

3. Occupational and Residential Risk

Occupational workers may be exposed to a pesticide through tasks such as mixing, loading, and applying a pesticide, or re-entering treated sites. Residents or homeowners can be exposed to a pesticide through mixing, loading, or applying a pesticide, or through entering or contacting treated sites. Occupational handlers of tetrachlorvinphos include individual farmers or ranchers who mix, load, and/or apply pesticides, and professional or custom agricultural applicators. Residential handlers include homeowner applicators treating their dogs and cats. Residential postapplication exposure to adults and children can also occur from contact with treated dogs and cats. Noncancer risk for all of these potentially exposed populations is measured by a Margin of Exposure (MOE) which determines how close the occupational or residential exposure comes to a No Observed Adverse Effect Level (NOAEL), which is the highest dose given in studies at which no significant toxic effects were observed. Generally, MOEs greater than 100 are not of concern. For cancer, risks below 1×10^{-6} , or 1 in 1 million, are not of concern. For workers, if cancer risks are between 1×10^{-6} and 1×10^{-4} EPA will pursue risk mitigation where feasible.

a. Toxicity

The toxicity of tetrachlorvinphos is integral to assessing the occupational and residential risk. All risk calculations are based on the most current toxicity information available for tetrachlorvinphos. The toxicological endpoints and other factors used in the occupational and residential risk assessments for tetrachlorvinphos are listed below.

Table 3a. Summary of Toxicological Endpoints and Other Factors Used in the Human Occupational and Residential Risk Assessment for Tetrachlorvinphos

Assessment	Dose	Endpoint	Study	Absorption Factor
Short-/Intermediate-Term Dermal	NOAEL =6.7 mg/kg/day	Plasma/RBC ChE Inhibition at 13 weeks (LOAEL=142)	Subchronic Rat MRID 43371201	9.6%
Short-/Intermediate-Term Inhalation	NOAEL = 6.7 mg/kg/day	Plasma/RBC ChE Inhibition at 13 weeks (LOAEL=142)	Subchronic Rat MRID 43371201	100%
Cancer	Q* = 1.83 x 10 ⁻³	Based on adenomas/carcinomas and pheochromocytomas	Mouse Carcinogenicity	N/A

Tetrachlorvinphos has relatively low acute toxicity in rats via the oral and inhalation routes, and low acute toxicity via the dermal route in rabbits. Based on studies conducted in guinea pigs, it is considered to be a dermal sensitizer.

Table 3b. Acute Toxicity Profile for Occupational Exposure for Tetrachlorvinphos

Route of Exposure	MRID No.	Results	Toxicity Category
Oral	41222504	LD ₅₀ = 1480 mg/kg (M) 465-965 mg/kg (F)	III
Dermal	41222505	LD ₅₀ >2000 mg/kg	III
Inhalation	00138933	LC50 > 3.61 mg/L	IV
Eye Irritation	41222506	moderate	III
Dermal Irritation	41222507	slight	IV
Dermal Sensitizer	41377902 42981001	sensitizer	--

b. Exposure

1) Occupational Exposure

Based on use patterns summarized above, EPA has identified the following major exposure

scenarios for workers who handle (mix, load, or apply) tetrachlorvinphos:

- mixing/loading emulsifiable concentrates for high pressure handwand applications on livestock or livestock premises,
- mixing/loading emulsifiable concentrates for groundboom applications in broiler facilities,
- mixing/loading emulsifiable concentrates for cattle backrubber applications for livestock,
- mixing/loading wettable powders for high pressure handwand applications on livestock or livestock premises,
- mixing/loading wettable powders for groundboom applications broiler facilities,
- mixing/loading wettable powders for paint-on fly control in poultry premises,
- mixing/loading wettable powders for dusting applications for livestock and poultry,
- applying with high pressure handwand on poultry and poultry premises,
- applying with groundboom in broiler facilities,
- mixing /loading/applying wettable powder with a low pressure handwand on poultry and poultry premises,
- mixing/loading/applying emulsifiable concentrate with a low pressure handwand on poultry and poultry premises,
- mixing/loading/applying with a backpack on poultry and poultry premises,
- mixing/loading/applying for paint-on application, undiluted emulsifiable concentrate for poultry premises,
- mixing/loading/applying for paint-on application, wettable powder for slurry paint-on for poultry premises.
- mixing/loading/ applying backrubbers for cattle.
- applying ear tags, feed-through pellets, and mineral blocks to livestock or livestock premises.

The risk assessment for tetrachlorvinphos addressed all elements of the poultry industry which included egg (also referred to as layer) and broiler production. These entities are very distinct from one another in cultural practices so the risks for each use were assessed separately. The Agency also estimated risks associated with beef cattle and dairy production. The uses for tetrachlorvinphos are similar for beef and dairy cattle; therefore, the two uses were grouped together for risk assessment purposes. Use patterns, application methods, and the range of application rates were derived from current labeling and Agency analysis.

One chemical-specific handler exposure study was submitted in support of the reregistration of tetrachlorvinphos in which separate mixer, loader, and applicator exposures were quantified during application of a wettable powder and liquid formulations in poultry houses (MRID 426223-01). These chemical-specific data were in the same range of exposures as those from the Pesticide Handlers Exposure Database (PHED), the database the Agency routinely uses for handler risk assessments when there is no chemical-specific study data available. In the current risk assessment (J. Dawson, March 28, 2002), only the results based on PHED data are summarized because they are similar to results using the chemical specific study, and PHED is a more robust database. Data were available to identify the typical and maximum application rates in poultry, beef cattle and dairy production. These bounding estimates were used for the cancer risk assessment.

Tetrachlorvinphos Exposures Associated With Egg Production

Tetrachlorvinphos is used predominantly in egg production for control of northern fowl mite and to control flies and darkling beetles with direct treatment of birds and chicken litter and/or premises. There are various methods to apply tetrachlorvinphos in egg production. Liquid applications involve the use of handheld equipment, such as low pressure handwands, backpack sprayers, and high pressure handwands for direct treatment on birds or poultry premises. Dust applications involve power dusters, dust boxes, plungers, and shaker cans on birds and premises. Paint-on techniques are also used for fly control in poultry premises.

Application rates specified on tetrachlorvinphos labels for the different methods in egg production are 0.0218 - 0.0436 lb ai/100 birds (liquid applications), 0.01- 0.24 lb ai/gal (paint-on), 0.078 lb ai/50 birds or 0.078 - 0.030 lb ai/100 ft² (dust application).

Special care should be given when interpreting the results which have been calculated for the paint-on uses because data have been bridged to these scenarios. Preparation of the paint slurry solutions from wettable powders has been addressed using wettable powder mixer/loader data where a bag of material is typically loaded into a nurse tank and mechanically agitated. In slurry prep, material is usually added to a bucket/hopper where the user is in closer proximity and agitation is done by hand. Also, the painting element of this use pattern was assessed with data generated using typical indoor paint products. In fly-control paint-on applications, the viscosity of the slurries applied tends to be thicker and the active ingredient concentrations are typically much higher. When applying the paint-on, the aesthetics of the end result are not important. Therefore, less care is taken during the application process.

Likewise, there are several different application techniques could be used to apply dust materials including shaker cans, rotary dusters, power dusters, and plungers. The only exposure scenario that has been included in this assessment is for mixing/loading operations. No dust application scenarios have been included due to lack of data (e.g., no data are available for power, plunger, or rotary dusters). It is difficult to estimate what the exposures associated with use of these kinds of equipment might be. However, the Agency readily believes that there would be measurable, and likely, substantial exposure.

Tetrachlorvinphos Exposures Associated With Broiler Production

Tetrachlorvinphos is used predominantly in broiler production for control of flies and other pests. Uses associated with broiler production involve direct application to the floors/litter within a broiler house and also as a paint-on for fly control. Applications occur with handheld equipment for spot treatments, with groundboom type equipment for larger areas (100,000 ft²), and paint-on methods to poultry structures.

Rates specified on tetrachlorvinphos labels for use in broiler production are 0.1 lb. ai/1000 ft² - 0.333 ai/1000 ft² for both handheld and groundboom equipment. Risks were calculated using PHED data and one chemical specific study (MRID 426223-01). Again, as mentioned above, only the

results based on PHED data are summarized because they are similar to results of the chemical specific study. Paint-on and dust uses are expected to be similar to those described above for egg production.

Tetrachlorvinphos Exposures Associated With Cattle and Dairy Production

Tetrachlorvinphos is used predominantly for fly control in the cattle industry. The following uses exist for cattle: ear tags, mineral blocks, dust/dust bags, feed-through (oral larvicide) pellets, and backrubbers. The Agency does not have exposure data specific to ear tag, mineral block, and pellet uses, but considers these scenarios to have low potential for significant worker exposure if basic protective measures such as gloves are used.

The Agency quantitatively calculated the risks associated with the use of dust/dust bags and backrubbers in this assessment. Dust exposures are expected to be similar to the loading scenario described above for egg production. The dust scenario for egg production involves loading dusting equipment (power dusters, hand dusters, and plungers), which EPA considered equivalent to loading a dust bag. Therefore, the loader exposure values for egg production adequately represent uses in the cattle industry. The other use that was considered, cattle backrubbers, are charged with a liquid and hung in areas such as feedlots, loafing sheds, corrals, and entries to dairy facilities where cattle can contact the devices. The use of backrubbers involves mixing a solution to charge the device (concentration = 2 lb ai/25 gallons) then placing the device in an appropriate location. Data for mixers and loaders with liquids from PHED were used to calculate risks for mixing the solution and loading into a backrubber. No data were available for quantifying exposures that would be associated with placing the device. In comparison to mixing the solution and loading it into the backrubber, exposures to handlers placing the device could be significant.

Occupational handler exposure assessments are conducted by the Agency using different levels of personal protection. The Agency typically evaluates all exposures with minimal protection and then adds additional protective measures using a tiered approach to obtain an appropriate MOE or cancer risk level (i.e., going from minimal to maximum levels of protection). The lowest tier is represented by the baseline exposure scenario, followed by, if required (i.e., MOEs are less than 100), increasing levels of risk mitigation (personal protective equipment (PPE) and engineering controls). The levels of protection that formed the basis for calculations of dermal and inhalation exposure from tetrachlorvinphos activities include:

Baseline:	Long-sleeved shirt and long pants, shoes and socks.
Minimum PPE:	Baseline + gloves (single layer clothing , gloves and no respirator)
Maximum PPE:	Baseline + double layer clothing + chemical resistant gloves + dust/mist respirator

Post Application Exposure

Supported tetrachlorvinphos uses are not expected to result in significant occupational post application exposures. Therefore, an occupational post-application exposure and risk assessment was not performed.

The Agency has considered the potential post-application exposure arising from re-entering indoor premises, such as poultry houses. Given the nature of activities performed in a poultry house, such as visually checking the condition of caged birds, as well as feeding, and watering, contact of treated surfaces should be minimal. Tetrachlorvinphos can also be used as a feed-through. Given the mechanized systems for feed delivery in most feed-lots and the nature of manure removal, the Agency concludes that post-application exposure is minimal.

All occupational tetrachlorvinphos exposures were considered to be either short-(i.e., 1-30 days) or intermediate-term (i.e., 30 days to several months) in nature. Based on the registered use pattern, no chronic exposures are thought to exist for tetrachlorvinphos.

2) Residential Exposure

For homeowner handler exposure assessments, the Agency does not believe a tiered mitigation approach like that used for assessing occupational handler risk is appropriate. Homeowners often lack access to personal protective equipment (PPE) and also do not possess expertise in the proper use of PPE. As a result, homeowner handler assessments are completed using a single scenario assuming that short-sleeved shirts and short pants are worn (i.e., common homeowner attire during the pesticide application season).

Residential exposure assessments for tetrachlorvinphos were conducted using the Agency's residential SOPs combined with chemical specific data provided by the registrant. Only short-term exposures were assessed, as the Agency does not believe homeowners who apply tetrachlorvinphos will be exposed for more than 30 days, although it should be noted that the same toxicity endpoint was selected for both short and intermediate term exposures. The Agency feels it is unlikely that a homeowner would be exposed to a product for more than 180 days based on the use pattern and the variety of other products on the market. The exposure scenarios included use of pet dips and application of pet collars, powders, aerosol sprays, and pump sprays. No postapplication exposure is calculated for treated indoor surfaces or turf, because tetrachlorvinphos is only registered for pet and pet bedding applications (i.e., not general area or crack and crevice). However, post application exposure for contact with pets was estimated.

The revised residential risk assessment (S. Hanley, October 25, 1999) was updated to include revisions to the residential SOPs (S. Hanley, June 8, 2001). The residential risk assessment was further revised to include handler and post application data submitted by Hartz Mountain Corporation (S. Hanley, February 4, 2002). These new studies incorporated label changes submitted by the registrant, and provided handler data for dips and powders; and dislodgeable fur residue data for aerosol, powder, and pump spray scenarios to assess post- application exposure from contact with treated pets. The studies were sufficient in scientific quality to refine the assessment. Hartz did not provide new data to assess post-application risks for dip and collar scenarios since the previous

assessment indicated these risks were not of concern. The residential risk assessment was again updated (S. Hanley, April 1, 2002) to incorporate the recalculation of the short and intermediate term endpoint.

The pet dip data used in the 1999 assessment were considered to be of low quality due to the methodology used. The new postapplication exposure data for aerosol, powder, and pump sprays are of much higher quality, and show results in the same range as the data used in the 1999 postapplication assessment for the dip use. This indicates that the low quality of the dip data will not result in an underestimate of exposure and risk from this scenario. Accordingly, the 1999 data for pet dips have been used in the current assessment to evaluate post application risks from this use.

Three products registered for use on livestock and poultry also include directions for limited outdoor use as premise sprays for fleas, ticks, chiggers, and mites, around kennels, yards, campgrounds, and parks, and along foot paths and roadways leading to such areas. Two of these are restricted-use products. Labeling directions are intended to limit applications to spot treatments in border areas, potentially frequented by people, as opposed to broadcast use over large areas. As such, EPA believes there is minimal potential for significant residential exposure; therefore, a residential risk assessment for outdoor uses has not been conducted.

c. Occupational & Residential Handler Risk Summary

1) Occupational Handler Risk

Poultry Production

Risks for most exposure scenarios in egg and broiler production were not of concern at baseline clothing or with additional PPE (see table 4 below). There are two scenarios for which risks are above the level of concern, even at the maximum level of protection considered feasible: mixers, loaders, and applicators have MOEs ranging from 14 to 80 for handling wettable powder using a low pressure handwand; and, MOEs range from 7 to 55 for paint-on application of the EC formulation. Cancer risks are above the Agency's level of concern for both paint-on EC and low pressure WP scenarios with estimates ranging from 2.1×10^{-6} to 5.7×10^{-6} . Cancer risks for all other scenarios are in the range of 10^{-9} to 10^{-7} , which is below the Agency's level of concern.

Cattle Production

As mentioned above (part b), no data are available to assess the exposures for ear tag, mineral block, and pellet uses. However, risks from these scenarios are not of concern because handling of these materials are low and likelihood of high exposure is minimal if gloves are used. For dust applications, the risk are expected to be similar to those assessed for poultry, for both mixers, loaders and applicators. Estimated mixer/loader risks for dust are below the level of concern, with MOEs of 197 - 504. But no data are available for applicators who apply dust to cattle. For cattle backrubbers, estimated mixer/loader MOEs range from 421-821 at the baseline clothing scenario; cancer risks are in the 10^{-7} range. EPA does not have data to assess workers hanging backrubber devices in cattle lots but expects exposures to be significant for this activity. Therefore, additional protective equipment such as double layer clothes and gloves will be needed for workers handling backrubber devices.

Table 4. Summary of Occupational Handler Risks in Poultry Production.

Poultry Type	Scenario/Formulation	Application Rate	Non-Cancer		Cancer	
			Minimum Required PPE	MOE	Minimum Required PPE	Risk
Egg Production	MIXER/LOADER					
	High pressure handwand/EC	0.0218 - 0.0436 lb ai/100 birds	Baseline	193-386	Baseline	4.4 - 8.3 x 10 ⁻⁷
	High pressure handwand/WP	0.0417 lb ai/100 birds	Baseline	141	Minimum PPE	1.8 x 10 ⁻⁷
	Paint-On/WP	0.01 to 0.24 lb ai/gal	Baseline	2458-58995	Baseline	2.8 x 10 ⁻⁹ - 6.8 x 10 ⁻⁸
	Dusting/WP ¹	0.078 lb ai/50 bird or 100 ft ²	Minimum PPE	252-504	Minimum PPE	3.3 - 6.7 x 10 ⁻⁷
		0.03 lb ai/100 ft ²	Baseline	197	Baseline	8.5 x 10 ⁻⁷
	MIXER/LOADER/APPLICATOR					
	Low pressure handwand/EC	0.0218-0.0436 lb ai/100 birds	Minimum PPE	756-1512	Minimum PPE	1.1 - 2.2 x 10 ⁻⁷
	Low pressure handwand/WP	0.0417 lb ai/100 birds	Maximum	80	Maximum	2.1 x 10 ⁻⁶
	Backpack	0.0218 - 0.0436 lb ai/100 birds	Minimum PPE	200-400	Minimum PPE esp.	4.2 - 8.4 10 ⁻⁷
	Paint-On/EC (undiluted)	2 lb ai/gal	Maximum	55	Maximum	3.0 x 10 ⁻⁶
	Paint-On/WP (Slurry)	0.01 lb ai/gal	Baseline	1340	Baseline	1.3 x 10 ⁻⁷
		0.24 lb ai/gal	Minimum PPE	382	Minimum PPE	4.4 x 10 ⁻⁷
	APPLICATOR					
	High pressure handwand	0.0218 - 0.0436 lb ai/100 birds	Baseline	214-428	Baseline	3.9 - 7.8 x 10 ⁻⁷
Broiler Production	MIXER/LOADER					
	High pressure handwand/EC	0.333 - 0.696 lb ai/1000ft ² [typical = 0.10 lb ai/1000ft ²]	Baseline	121-841	Baseline	2.0 x 10 ⁻⁷
	High pressure handwand/WP	0.333 lb ai/1000ft ² [typ = 0.10]	Baseline	177-590	Baseline	2.8 x 10 ⁻⁷
	Groundboom/EC	0.333 - 0.696 lb ai/1000ft ² [typical = 0.10 lb ai/1000ft ²]	Minimum PPE	1981-4141	Baseline	1.0 x 10 ⁻⁶
			Baseline	168		
Broiler Production	Groundboom/WP	0.333 lb ai/1000ft ² [typical = 0.10 lb ai/1000ft ²]	Minimum PPE	236	Minimum PPE	2.1 x 10 ⁻⁷
			Baseline	118		
MIXER/LOADER/APPLICATOR						
	Low pressure handwand/EC	0.333 - 0.696 lb ai/1000ft ² [typical = 0.10 lb ai/1000ft ²]	Minimum PPE	474-3296	Minimum PPE	5.1 x 10 ⁻⁸
	Low pressure handwand/WP	0.333 lb ai/1000ft ² [typical = 0.10 lb ai/1000ft ²]	Maximum	100	Minimum PPE	7.5 x 10 ⁻⁷
			Minimum PPE	122		

Table 4. Summary of Occupational Handler Risks in Poultry Production.

Poultry Type	Scenario/Formulation	Application Rate	Non-Cancer		Cancer	
			Minimum Required PPE	MOE	Minimum Required PPE	Risk
	Backpack	0.333 - 0.696 lb ai/1000ft ² [typical = 0.10 lb ai/1000ft ²]	Minimum PPE	125-871	Minimum PPE	1.9 x 10 ⁻⁷
	APPLICATOR					
	High pressure handwand	0.333 - 0.696 lb ai/1000ft ² [typical = 0.10 lb ai/1000ft ²]	Baseline	134-933	Baseline	1.8 x 10 ⁻⁷
	Groundboom	0.333 - 0.696 lb ai/1000ft ² [typical = 0.10 lb ai/1000ft ²]	Baseline	3240-22550	Baseline	7.4 x 10 ⁻⁹
Cattle Production	Backrubbers	2 lb ai/25 gallons	Baseline	421-821	Baseline	2.0 to 4.0 x 10 ⁻⁶

¹No Data are available for dust application scenarios, but EPA expects measurable, substantial exposure.

2) Post application Risk

Supported tetrachlorvinphos uses are not expected to result in significant occupational post application exposures. Therefore, an occupational post application exposure and risk assessment was not performed.

3) Horses

EPA is concerned with tetrachlorvinphos feed-through products used in horses. EPA has data from multiple sources that show tetrachlorvinphos feed-through products decrease cholinesterase levels. EPA is therefore requesting the registrants add label statements to horse oral larvicides which state that the product is a cholinesterase inhibitor, describe signs of cholinesterase inhibition in horses, caution against the use with other cholinesterase inhibiting compounds, and direct horse owners to consult a veterinarian before using products containing tetrachlorvinphos on debilitated, aged, pregnant or nursing animals.

Several comments were submitted during phase 5 associating reproduction problems in pregnant mares with use of tetrachlorvinphos feed-through products. The Agency does not have data from controlled studies to support a conclusion that such use leads to these problems. EPA notes that other organophosphates mostly used as equine anthelmintics (intestinal wormers) are regulated by the Food and Drug Administration (FDA). Generally, FDA requires reproductive toxicity studies for equine anthelmintics. However, in the absence of such data, products carry statements such as, "This product has not been tested in breeding animals." Therefore, EPA is requesting that tetrachlorvinphos feed-through labels state that testing in breeding horses has not been conducted.

d. Residential (Homeowner) Risk Summary

1) Residential Handler Risk

A total of four residential handler scenarios were identified: pet dip (sponge on and pour on); applying powders (dusting); applying ready-to-use pump sprayer and aerosol sprays; and applying a flea collar to pets. The target MOE is 100. The residential handler combined dermal and inhalation MOEs ranged between 240 and 26,000. Therefore, risks for residential handlers are not of concern. Based on the 2001 risk assessment which used high-end conservative assumptions with respect to the frequency of applications, cancer risks calculated for residential handlers were also below the Agency's level of concern for all pet uses (risks were in the range of 2×10^{-7} to 9.3×10^{-9}).

Table 5. Residential Handlers: Risk Concerns

Product	TCVP used ^a (lb)	Dermal + Inhal. Exposure		
		Dose ^b	MOE ^c	Cancer Risk ^d
Dip, Pour-On	0.015	0.0013	5200	9.3×10^{-9}
Dip, Sponge-On	0.0037	0.0025	2700	1.8×10^{-8}
Spray, Aerosol	0.00086	0.00030	22000	2.1×10^{-9}
Spray, Pump	0.00066	0.00026	26000	1.9×10^{-9}

Table 5. Residential Handlers: Risk Concerns

Product	TCVP used ^a (lb)	Dermal + Inhal. Exposure		
		Dose ^b	MOE ^c	Cancer Risk ^d
Powder	0.0018	0.0027	2500	1.9 x 10 ⁻⁸
Collar ^e	0.011	0.028	240	2.0 x 10 ⁻⁷

- a TCVP used (lb); average value from handler study data [Dips and Powder] or Residential SOP's/label.
b Total Absorbed Dose (mg/kg/day) = Dermal Dose (mg/kg/day) + Inhalation Dose (mg/kg/day).
c MOE = NOAEL (6.7 mg/kg/day) ÷ Total Dose (mg/kg/day).
d Cancer risks were calculated as follows: Total dose x (2 days/365 days) x (50 yrs/70 yrs) x 0.00183 (Q₁*)
e Collar weight is 33 g., and 14.55% TCVP (total ai/collar = 4.8 g)

1) Residential Post Application Risk

Since tetrachlorvinphos is used for direct pet and pet premise treatment in a residential environment, post application exposure is expected to occur. Some significant short-term residential exposure scenarios that have been identified include contact with treated pets, toddler dermal contact (such as a child hugging a dog), and toddler exposures resulting from hand-to-mouth activity following contact with treated pets.

Assessments were based on the revised residential SOPs and chemical-specific data from submitted studies. Post application exposure to residues from pet collars is considered to be insignificant when compared with exposure to other products. Because other, higher exposure uses were not of concern, an assessment for collars was not conducted. Toddler post application dermal risks were below the Agency's level of concern with MOEs ranging between 412 - 1804 for dermal exposure to pets following treatment with dips, powders, pump sprays, and aerosols. Risks were below the Agency's level of concern for toddler hand-to-mouth exposures for dips, powders, pump sprays, and aerosols (MOEs ranging between 267 - 809). Combined risks for dermal and hand-to-mouth post-application exposures are below the Agency's level of concern for all scenarios (MOEs ranging between 130 and 560). Although postapplication risks were not determined for adults, toddler exposures represent the worst case due to typical mouthing behaviors and body weight and surface area considerations; therefore, the risk assessment for toddlers is protective of adults.

Table 6. Postapplication Exposure: Risk Concerns

Product	Dermal Exposure and Risk	Hand-to-Mouth Exposure and Risk	Aggregate Exposure and Risk
	MOE	MOE	MOE
Dip	985	447	310
Spray, Pump	595	267	180
Spray, Aerosol	412	267	130
Powder	1804	809	560

4. Aggregate Risk

An aggregate risk assessment combines risk from dietary exposure (food and drinking water routes) and residential exposure to a particular pesticide. For tetrachlorvinphos, three aggregate scenarios were considered: acute, short-term, chronic, and cancer.

Based on the supported use pattern for tetrachlorvinphos, no exposure is expected to occur through consumption of drinking water. Therefore, the acute aggregate assessment only considers dietary (food only) risk.

For short-term aggregate risk exposure to tetrachlorvinphos in food (chronic dietary exposure) and short-term residential exposures (handler and post-application) are combined. All identified residential exposure scenarios were considered to be short-term in nature, and therefore an intermediate-term aggregate assessment was not conducted.

Since there are no chronic residential exposure scenarios and no exposure through drinking water is expected based on tetrachlorvinphos use patterns, the chronic aggregate exposure and risk assessment also includes only food sources of exposure.

Generally, all non-cancer risks from these exposures must have MOEs of greater than 100 to be not of concern to the Agency. Adult aggregate risks for all scenarios were below the Agency's level of concern; the worst case scenario was collars with an MOE of 240. All other scenarios ranged from 2,400 to 19,000 for aerosols, dips, powders, and pump sprays. Aggregate risk for post application (toddlers) exposures were again below the Agency's level of concern for all scenarios. The lowest MOE was for pump sprays (130). The other risk estimates ranged between 180 and 550 for aerosols, dips, and powders.

Aggregate cancer risks for residential handlers were calculated using the chronic dietary food exposure and the cancer risk numbers generated for handlers applying dips, powders, sprays, and collars. Aggregate cancer risks less than 1×10^{-6} or one in 1 million, are not of concern to EPA. Aggregate cancer risks for all scenarios were below the Agency's level of concern. Risk estimates ranged from 1.7×10^{-7} to 3.7×10^{-7} .

IV. Interim Risk Management and Reregistration Decision

A. Determination of Interim Reregistration Eligibility

Section 4(g)(2)(A) of FIFRA calls for the Agency to determine, after submission of relevant data concerning an active ingredient, whether products containing the active ingredient are eligible for reregistration. The Agency has previously identified and required the submission of the generic (i.e., active ingredient specific) data required to support reregistration of products containing tetrachlorvinphos active ingredients.

The Agency has completed its assessment of the occupational and residential risks associated with the use of pesticides containing the active ingredient tetrachlorvinphos, as well as a dietary risk assessment that has not yet considered the cumulative effects of organophosphates as a class. Based on a review of these data and public comments on the Agency's assessments for the active ingredient tetrachlorvinphos, EPA has sufficient information on the human health effects of tetrachlorvinphos to make interim decisions as part of the tolerance reassessment process under FFDCA and reregistration under FIFRA, as amended by FQPA. The Agency has determined that tetrachlorvinphos is eligible for tolerance reassessment provided that: (i) current data gaps and additional data needs are addressed; (ii) the risk mitigation measures outlined in this document are adopted, and label amendments are made to reflect these measures; and (iii) cumulative risks considered for the organophosphates support a final reregistration eligibility decision. Label changes are described in Section IV. Appendix B identifies the generic data requirements that the Agency reviewed and lists the submitted studies that the Agency found acceptable.

Although the Agency has not yet considered cumulative risks for the organophosphates, the Agency is issuing this interim assessment now in order to identify risk reduction measures that are necessary to support the continued use of tetrachlorvinphos. Based on its current evaluation of tetrachlorvinphos alone, the Agency has determined that tetrachlorvinphos products, unless labeled and used as specified in this document, would present risks inconsistent with FIFRA and/or FQPA. Accordingly, should a registrant fail to implement any of the risk mitigation measures identified in this document, the Agency may take regulatory action to address the risk concerns from use of tetrachlorvinphos.

For tetrachlorvinphos, if all changes outlined in this document are incorporated into the labels, then all current risks will be mitigated. Because this is an interim TRED, the Agency may take further actions, if warranted, to finalize the eligibility decision for tetrachlorvinphos after considering the cumulative risk of the organophosphate class. Such an incremental approach is consistent with the Agency's goal of improving the transparency of the reregistration and tolerance reassessment processes. By evaluating each organophosphate in turn and identifying appropriate risk reduction measures, the Agency is addressing the risks from the organophosphates in as timely a manner as possible.

Because the Agency has not yet considered cumulative risks for the organophosphates, this does not fully satisfy the reassessment of the existing tetrachlorvinphos food residue tolerances as called for by FQPA. When the Agency has considered cumulative risks, tetrachlorvinphos tolerances will be reassessed in that light. By publishing this interim decision on tolerance reassessment eligibility and requesting mitigation measures now for the individual chemical tetrachlorvinphos, the Agency is not deferring or postponing FQPA requirements; rather, EPA is taking steps to assure that uses which exceed FIFRA's unreasonable risk standard do not remain on the label indefinitely, pending consideration of cumulative risks. This decision does not preclude the Agency from making further FQPA determinations and tolerance-related rulemakings that may be required on this pesticide or any other in the future.

If the Agency determines, before finalization of the TRED, that any of the determinations described in this interim TRED are no longer appropriate, the Agency will pursue appropriate action,

including but not limited to, reconsideration of any portion of this interim TRED.

B. Summary of Phase 5 Comments and Responses

When making its interim reregistration decision, the Agency took into account all comments received during Phase 5 of the OP Pilot Process. A detailed discussion of these comments received on the Human Health Risk Assessment is in the OPP docket for tetrachlorvinphos (Docket # 34175B). A brief summary of the comments and the Agency response is noted here.

Comment: The registrant Boehringer Ingelheim Vetmedica submitted comments during phase 5 on the Revised Risk Assessments. Boehringer noted a telephone conference call that was held on May 2, 2000, with USDA, EPA, registrants, scientists, and other stakeholders. The call, among other things, highlighted issues regarding the Quantitative Usage Analysis (QUA) report and poultry uses. Boehringer stated that they were concerned with how the Agency assessed backpack sprayers in the risk assessment. They proposed future discussions with the Agency to modify the label to be consistent with current use practices for their products.

Response: The QUA has been updated to include USDA National Agricultural Statistic Survey (NASS) data that gives current estimates of pesticide usage on livestock. For poultry uses, the Agency performed an analysis of use practices in poultry in December 2000. That data was used in the most recent occupational risk assessment (J. Dawson, March 27 2002). For backpack sprayers, due to the recent change in the toxicity endpoint for tetrachlorvinphos (short and intermediate term endpoint is now 6.7 mg/kg/day), risk to backpack sprayers for poultry uses is no longer a concern provided PPE is used.

Comment: The registrant Hartz Mountain submitted comments during phase 5 on the Revised Risk Assessments. Hartz did not agree with the risk assessment and its limited use of exposure data provided by the registrant in June 1999. Consequently, they compiled a listing of the issues that were of concern to the Agency noting those areas that used conservative assumptions to derive estimates.

Response: Since the time that this comment was submitted, the risk assessment has been changed to reflect revisions to the Residential SOPs (1999). In addition, new exposure data were submitted to the Agency which enabled major refinement of the risks. Moreover, the toxicity endpoint was recalculated and this further improved the risk picture.

Comments: Relating to horses: Four citizens submitted comments concerning feed through uses of tetrachlorvinphos products on horses. Most of these comments were anecdotal reports of suspected adverse reactions, particularly those which caused reproductive problems in their horses. However, one commentor provided detailed information concerning the use of a feed through product containing tetrachlorvinphos, and its apparent reproductive effects on his horses.

The registrant Farnam Companies, Inc., submitted comments also. Farnam is a manufacturer and distributor of Equitrol®, which is a pelleted horse feed additive containing tetrachlorvinphos that is designed for fly control. Farnam wanted to address some of the citizens' comments focused on its product that were submitted during phase 5.

Additionally, a comment was submitted by William B. Ley, DVM, MS, Head of the Department of Veterinary Clinical Sciences, College of Veterinary Medicine, Oklahoma State University. Dr. Ley's comment focused on one comment that was submitted by a citizen during phase 5 of the public process. Dr. Ley stated that the data submitted by this citizen was not conclusive in showing a link between the use of Equitrol® and reproductive problems that occurred with exposed animals. He states that these problems could have been associated with an equine herpes virus.

Response: EPA has analyzed the available data regarding potential effects on horses resulting from use of tetrachlorvinphos products and information regarding cholinesterase inhibition from the use of tetrachlorvinphos and other organophosphate feed additives. EPA has data from multiple sources that show tetrachlorvinphos feed-through products decrease cholinesterase levels. EPA notes that other organophosphates mostly used as equine anthelmintics (intestinal wormers) are regulated by the Food and Drug Administration (FDA). Generally, FDA requires reproductive toxicity studies for equine anthelmintics. However, in the absence of such data, products should carry statements such as, "This product has not been tested in breeding horses."

C. Regulatory Position

1. FQPA Assessment

a. "Risk Cup" Determination

As part of the FQPA tolerance reassessment process, EPA assessed the risks associated with this organophosphate. The assessment is for this individual organophosphate, and does not reassess these tolerances as required under FQPA. FQPA requires the Agency to evaluate food tolerances on the basis of cumulative risk from substances sharing a common mechanism of toxicity, such as the toxicity expressed by the organophosphates through a common biochemical interaction with the cholinesterase enzyme. The Agency is in the process of considering the cumulative risk posed by the entire class of organophosphates.

EPA has determined that risk from exposure to tetrachlorvinphos is within its own "risk cup." In other words, if tetrachlorvinphos did not share a common mechanism of toxicity with other chemicals, EPA would be able to conclude today that the tolerances for tetrachlorvinphos meet the FQPA safety standards. In reaching this determination EPA has considered the available information on the special sensitivity of infants and children, as well as the chronic and acute food exposure. An

aggregate assessment was conducted for exposures through food and residential uses. Based on the supported use pattern for tetrachlorvinphos, no exposure is expected to occur through consumption of drinking water. Results of this aggregate assessment indicate that the human health risks from these combined exposures are considered to be within acceptable levels; that is, combined risks from all exposures to “fit” within the individual risk cup. Therefore, the tetrachlorvinphos tolerances remain in effect with modifications as summarized in Table 10 below, until a full reassessment of the cumulative risk from all organophosphates is considered.

b. Tolerance Summary

In the individual assessment, tolerances for residues of tetrachlorvinphos in/on plant commodities [40 CFR §180.252] are presently expressed in terms of 2-Chloro-1-(2,4,5-trichlorophenyl) vinyl dimethyl phosphate. All registered uses of tetrachlorvinphos on food or feed plant commodities, including alfalfa, were canceled in 1987. Therefore, EPA will propose to revoke the alfalfa tolerance. In the 1995 RED, EPA recommended revoking the tolerances for sheep fat because there were no registered uses associated with this commodity. Likewise, for the purposes of this TRED, EPA is recommending that the tolerances for goat fat be revoked because no registered uses are associated with this commodity.

At this time, tetrachlorvinphos tolerances for milk fat and the fat of cattle, hogs, and poultry are codified in 40 CFR 180.252. Due to inadequate studies (not reflecting dosing rates representing the maximum expected combined exposures or lacking other data) concerning residues of tetrachlorvinphos found in eggs, milk, poultry, and meat (excludes horses), EPA currently has insufficient data to reassess existing tolerances for milk fat and the fat of cattle, hogs, and poultry as permanent tolerances or for the Agency to provide recommendations in order to establish permanent tolerances for additional cattle, swine, and poultry commodities. However, based on metabolism studies in cattle, poultry, and swine, EPA has developed estimates of tolerances for tetrachlorvinphos in these commodities. Therefore, except for tolerances recommended for revocation, the additional tolerances that should be established and the existing tolerances in 40 CFR 180.252 should be made time-limited for a period of 18 months (should expire and be revoked on a given date at the end of the 18 month period) to permit sufficient time for the registrant to submit required residue studies.

Also, because current labels prohibit the use of tetrachlorvinphos products for horses destined for slaughter, the tolerance for horse fat in 40 CFR 180.252(a)(1) and the tolerance exemption for horse in 40 CFR 252(a)(2) should be revoked because they are no longer needed.

A feed additive regulation has been established for tetrachlorvinphos for use as an additive in the feed of beef cattle, dairy cattle, horses, and swine at the rates of 0.00015 lb per 100 lb body weight per day for cattle and horses, and 0.00011 lb per 100 lb body weight per day for swine. These exemptions should be deleted when time-limited tolerances for meat and milk are established. In addition, the exemption should be deleted for horses because feed through products are not to be used on horses destined for slaughter.

Table 7. Tolerance Summary for Tetrachlorvinphos.

Commodity	Current Tolerance, ppm	Time-Limited Tolerance ^a Reassessment*, ppm	Comment/ [Correct Commodity Definition]
Tolerances Listed Under 40 CFR §180.252			
Alfalfa	110.0	Revoke	No registered uses exist.
Cattle, fat	1.5	0.2	Additional data are required. New magnitude of residue studies with cattle and poultry are required because submitted studies do not reflect dosing rates representing the maximum expected combined exposures and do not contain data for all residues of concern.
Cattle, kidney	None	1	
Cattle, liver	None	0.5	
Cattle, meat	None	2	
Cattle, meat by-products^b	None	1	
Eggs	0.1	0.2	
Goat, Fat	0.5	Revoke	No registered uses exist.
Hog, Fat	1.5	0.2	Additional data are required. New magnitude of residue studies with hogs are required because submitted studies do not reflect dosing rates representing the maximum expected combined exposures and do not contain data for all residues of concern.
Hog, meat	None	2	
Hog, meat by-products^c	None	1	
Hog, liver	None	0.5	
Hog, kidney	None	1	
Horse, fat	0.5	Revoke	Current labels prohibit treatment of horses destined for slaughter.
Milk, fat	0.5	0.05	Reflecting negligible residues in whole milk.
Poultry, fat	0.75	7	Additional data are required. New magnitude of residue studies with poultry are required because submitted studies do not contain data for all residues of concern.
Poultry, meat	None	3	
Poultry, liver	None	2	
Poultry, meat by-products^d	None	2	
Sheep, fat	0.5	Revoke	No registered uses exist.
Exempted Tolerances (Feed Additive Regulation)			
Beef Cattle	Exempted	Revoke	These exemptions should be revoked when time-limited tolerances for meat and milk are established.
Dairy Cattle	Exempted	Revoke	
Swine	Exempted	Revoke	
Horses	Exempted	Revoke	This exemption should be revoked since current labels prohibit the treatment of horses for slaughter.

^a Permanent tolerance(s) cannot be made at this time because additional data are required .

^b Excludes kidney and liver

^c Excludes kidney and liver

^d Excludes kidney

For Cattle and Swine Commodities

For liver, 0.5 ppm (of which no more than 0.05 is tetrachlorvinphos per se)

For kidney, 1 ppm (of which no more than 0.05 is tetrachlorvinphos per se)

For muscle, 2 ppm (of which no more than 2 is tetrachlorvinphos per se)

For fat, 0.2 ppm (of which no more than 0.1 is tetrachlorvinphos per se)

For milk, 0.05 ppm (of which no more than 0.05 is tetrachlorvinphos per se)

For Poultry Commodities

For liver, 2 ppm (of which no more than 0.05 is tetrachlorvinphos per se)

For muscle, 3 ppm (of which no more than 3 is tetrachlorvinphos per se)

For fat, 7 ppm (of which no more than 7 is tetrachlorvinphos per se)

For eggs, 0.2 ppm (of which no more than 0.05 is tetrachlorvinphos per se)

*** The term “reassessed” here is not meant to imply that the tolerance has been reassessed as required by FQPA, since this tolerance may be reassessed only upon consideration of the cumulative risk assessment of all organophosphates, as required by this law. Rather, it provides a tolerance level for this single chemical, if no cumulative assessment was required, that is supported by all of the submitted residue data.**

2. Endocrine Disruptor Effects

EPA is required under the FFDCA, as amended by FQPA, to develop a screening program to determine whether certain substances (including all pesticide active and other ingredients) "may have an effect in humans that is similar to an effect produced by a naturally occurring estrogen, or other such endocrine effects as the Administrator may designate." Following the recommendations of its Endocrine Disruptor Screening and Testing Advisory Committee (EDSTAC), EPA determined that there were scientific bases for including, as part of the program, the androgen and thyroid hormone systems, in addition to the estrogen hormone system. EPA also adopted EDSTAC's recommendation that the Program include evaluations of potential effects in wildlife. For pesticide chemicals, EPA will use FIFRA and, to the extent that effects in wildlife may help determine whether a substance may have an effect in humans, FFDCA authority to require the wildlife evaluations. As the science develops and resources allow, screening of additional hormone systems may be added to the Endocrine Disruptor Screening Program (EDSP).

When the appropriate screening and/or testing protocols being considered under the Agency's EDSP have been developed, tetrachlorvinphos may be subjected to additional screening and/or testing to better characterize effects related to endocrine disruption.

3. Label Modifications

Currently, worker risks are of concern at the maximum level of protection for mixers, loaders, and applicators in poultry egg production operations applying wettable powder formulations with a low-pressure handwand and paint-on application of the EC formulation. Further, additional Personal Protective Equipment (PPE) is needed for several occupational scenarios. In addition, EPA is concerned with tetrachlorvinphos feed-through products for horses. For residential concerns, risk were below the level of concern for both handler and post-application scenarios. However, EPA has concern over the potential for over-application of powder products by consumers. Therefore, label

changes to address this concern are necessary. The following label modifications are needed:

Workers

- Restrict the use of low pressure handwands for wettable powder (WP) applications to spot treatment in poultry facilities.
- Remove the paint-on use with emulsifiable concentrate (EC) formulations.
- Double layer clothing, gloves, and dust/mist respirator for mixers, loaders, and applicators using dusting equipment to apply WP formulation as dusts; single layer and gloves for loaders and others handling dust bags.
- Single layer clothing and gloves for mixers, loaders, and applicators engaging in groundboom activities using the EC and WP formulations.
- Double layer clothing, gloves, and dust/mist respirator for mixers, loaders, and applicators engaging in low pressure handwand activities using the WP formulations in egg and broiler facilities.
- Single layer clothing and gloves for mixers, loaders, and applicators engaging in low pressure handwand activities using the EC formulations in poultry facilities.
- Single layer clothing and gloves for mixers, loaders, and applicators engaging in backpack spraying activities.
- Double layer clothing, gloves, and dust/mist respirator for mixers, loaders, and applicators engaging in paint-on activities using WP formulations.
- Single layer clothing and gloves for workers when handling ear tags.
- Single layer clothing and gloves for workers when handling mineral blocks.
- Single layer clothing and gloves for workers when handling pellets (oral larvicide feed-through products).
- Double layer clothing and gloves for workers when handling backrubber devices.

Residential

- Use 1/3 oz. of powder per every 10 pounds of body weight of your cat or dog.
- Restrict outdoor premise uses to spot treatments, one time a year, and along woody borders of kennels, yards, campgrounds, recreational parks, and footpaths and roadways leading to such areas.

- Prohibit the use of outdoor premise treatments by homeowners.

Other Concerns

For feed through products used on horses:

- This product contains tetrachlorvinphos, which is a cholinesterase inhibitor. The most frequently reported clinical signs of cholinesterase inhibition in the horse are abdominal pain, lethargy, sweating, tearing and excessive salivation. If these signs are seen in horses, consult your veterinarian immediately. Do not use this product simultaneously or within a week before or after treatment with cholinesterase inhibiting drugs, pesticides or chemicals. Consult a veterinarian before using this product on debilitated, aged, pregnant or nursing animals.
- This product has not been tested in breeding horses.

E. Regulatory Rationale

1. Dietary (Food) Risk Mitigation

Based on analyses of both acute and chronic dietary risk, the Agency has determined that the risk estimates are not of concern; therefore, no mitigation measures are necessary at this time.

2. Drinking Water Mitigation

No drinking water exposure is anticipated from current uses; therefore, no mitigation is necessary at this time.

3. Occupational Risk Mitigation

The Agency is concerned about exposures resulting to handlers using low pressure handwand WP in egg production facilities and paint-on EC scenarios. MOEs at maximum PPE for short and intermediate term exposures for mixers, loaders, and applicators, are 80 for low pressure handwand scenarios; MOEs at maximum PPE for short and intermediate term exposures for mixers, loaders, and applicators are 55 for paint-on scenarios.

To address these concerns, the registrant needs to limit the use of low pressure handwands WP to “spot treatment” only and delete the use of the EC products for paint-on applications. After consultation from USDA and poultry specialists in various states, EPA concluded that low-pressure handwand use is critical for treating the northern fowl mite, darkling beetle, and flies on birds and in poultry premises. Poultry specialists also concurred that low pressure handwands are not used to treat large areas in poultry facilities. Use is confined to areas where pest infestation is the heaviest.

For paint-on scenarios, poultry specialists indicated that WP paint-on methods are preferable to the EC paint-on methods to treat for the darkling beetle that destroys the wood of poultry houses because they have greater residual efficacy. Since EPA believes risks of concern can be mitigated for the paint-on WP scenario, despite the lack of data that are representative of the use, this is a suitable alternative to the EC paint-on use. However, EPA is requiring confirmatory data to estimate the actual exposures to workers using this scenario.

Worker risks exceeded the Agency's level of concern with baseline PPE for handlers engaging in backpack, using dust equipment, groundboom, and low pressure handwand activities. To mitigate these exposures to workers handling tetrachlorvinphos products, the following PPE is needed: single layer clothing, gloves, and no respirator.

In addition, the Agency is concerned about workers handling ear tags, mineral blocks, and pellets when these items are put into place. These scenarios were not assessed because the Agency does not have data for these scenarios, however the Agency has concluded that basic protective gloves will mitigate potential concerns which result from dermal contact.

Although risks were acceptable for dusting and paint-on WP mixing and loading scenarios, the Agency does not have data to assess what the actual exposure would be for applicators. For workers using dusting equipment, because there are no data for the application phase, when the greatest potential for exposure exists, EPA cannot with confidence predict risks. Therefore, a mixer/loader/applicator study is needed to confirm that PPE will adequately protect workers using dusting equipment or paint-on methods. Until those data are available, workers applying dusts need to wear double layers of clothing, gloves, and a dust/mist respirator.

4. Residential Risk Mitigation

The revised exposure and risk estimates are significantly below the level of concern for residential handlers and post application exposure for toddlers based on the new data submitted by Hartz. However, the Agency has concern over the potential for over-application of powder products. Due to vague directions regarding the use rates, labels need to be modified to specify how much product to apply to treat pets of different sizes. Therefore, the pet labels should be modified to include the use rate of 1/3 oz. of powder per every 10 pounds of body weight for a cat or dog. By guiding the user with a recommended rate, the potential for over-application will be reduced.

Three products registered for use on livestock and poultry also include directions for limited outdoor use as premise sprays for fleas, ticks, chiggers, and mites, around kennels, yards, campgrounds, and parks, and along foot paths and roadways leading to such areas. Two of these are restricted-use products. Labeling directions are intended to limit applications to spot treatments in border areas, potentially frequented by people, as opposed to broadcast use over large areas. As such, EPA believes there is minimal potential for contamination of drinking water sources or for significant residential exposure; therefore, drinking water and outdoor residential risk assessments have not been conducted.

Based on discussions with stakeholders, EPA is concerned that some users could broadly interpret directions for use on these labels and has decided that labels must clearly limit applications in these areas to only spot treatments, one time per year, along woody borders of kennels, yards, campgrounds, recreational parks, and footpaths and roadways leading to such areas. Further, while these products are all intended for professional use by certified applicators, to ensure applications are made only by professional handlers, labels must prohibit use by homeowners. If any party in the future is interested in expanding the use of tetrachlorvinphos to include broadcast outdoor uses, EPA will evaluate the potential risks associated with that use and additional data may be required.

5. Other Concerns

EPA is concerned with tetrachlorvinphos feed-through products used in horses. EPA has data from multiple sources that show tetrachlorvinphos feed-through products decrease cholinesterase levels. EPA is therefore requesting the registrants add label statements to horse oral larvicides which state that the product is a cholinesterase inhibitor, describe signs of cholinesterase inhibition in horses, caution users against the use with other cholinesterase inhibiting compounds, and direct horse owners to consult a veterinarian before using products containing tetrachlorvinphos on debilitated, aged, pregnant or nursing animals. Also, since no controlled studies have been conducted with breeding horses, labels must state, "this product has not been tested in breeding horses."

II. What Registrants Need to Do

A. Manufacturing Use Products

1. Additional Generic Data Requirements

The generic data base supporting the reregistration of tetrachlorvinphos for the above eligible uses has been reviewed and determined to be substantially complete. The following data gaps remain:

860.1340	Residue Analytical Method
860.1360	Storage Stability Data
860.1650	Analytical Reference Standards
860.1480	Magnitude of Residue - Meat/Milk/Poultry/Eggs
870.1200	Acute Dermal Toxicity
875.1100	Dermal Exposure (Indoor) for paint-on WP and Dust uses
875.1300	Inhalation Exposure (Indoor) for paint-on WP and Dust uses

Also, a Data Call-In Notice (DCI) was recently sent to registrants of organophosphate pesticides currently registered under FIFRA (August 6, 1999 64FR42945-42947, August 18 64FR44922-44923). DCI requirements included acute, subchronic, and developmental neurotoxicity studies. The technical registrants of tetrachlorvinphos, Boehringer Ingelhiem and Hartz Mountain requested a generic data waiver for to the developmental neurotoxicity study, and the Agency denied the requests in letters dated February 6, 2001, and July 31, 2000, respectively. The registrants intend to support the registration of tetrachlorvinphos and have committed to submit the required developmental neurotoxicity study.

2. Labeling for Manufacturing Use Products

To remain in compliance with FIFRA, manufacturing use product (MUP) labeling should be revised to comply with all current EPA regulations, PR Notices and applicable policies.

All registrants need to submit applications for amended registration. This application should include the following items: EPA application form 8570-1 (filled in), five copies of the draft label with all label amendments outlined in Table 11 of this document incorporated, and a description on the application, such as, “Responding to the Tolerance Reassessment Eligibility Decision” document. All amended labels need to be submitted within 90 days of signature of this document. The Registration Division contact is George Larocca (703) 305-6100.

B. End-Use Products

1. Additional Product-Specific Data Requirements

Section 4(g)(2)(B) of FIFRA calls for the Agency to obtain any needed product-specific data regarding the pesticide after a determination of eligibility has been made. Registrants must review previous data submissions to ensure that they meet current EPA acceptance criteria and if not, commit to conduct new studies. If a registrant believes that previously submitted data meet current testing standards, then the study MRID numbers should be cited according to the instructions in the Requirement Status and Registrants Response Form provided for each product.

A product-specific data call-in, outlining specific data requirements, accompanies this interim TRED.

2. Labeling for End-Use Products

Labeling changes are necessary to implement the mitigation measures outlined in Section IV above. Specific language to incorporate these changes is specified in the Table 8 at the end of this section. Registrants need to submit applications for amended registration. This application should include the following items: EPA application form 8570-1 (filled in), five copies of the draft label with all label amendments outlined in Table 9 of this document incorporated, and a description on the application, such as, “Responding to the Tolerance Reassessment Eligibility Decision” document. All amended labels need to be submitted within 90 days of signature of this document. The Registration Division contact is George Larocca (703) 305-6100.

C. Existing Stocks

Registrants may generally distribute and sell products bearing old labels/labeling for 26 months from the date of the issuance of this interim TRED. Persons other than the registrant may generally distribute or sell such products for 50 months from the date of the issuance of this interim TRED. However, existing stocks time frames will be established case-by-case, depending on the

number of products involved, the number of label changes, and other factors. Refer to “Existing Stocks of Pesticide Products; Statement of Policy”; *Federal Register*, Volume 56, No. 123, June 26, 1991.

The Agency has determined that registrants may distribute and sell tetrachlorvinphos products bearing old labels/labeling for 26 months from the date of issuance of this interim TRED. Persons other than the registrant may distribute or sell such products for 50 months from the date of the issuance of this interim TRED. Registrants and persons other than the registrant remain obligated to meet pre-existing label requirements and existing stocks requirements applicable to products they sell or distribute.

D. Labeling Changes Summary Table

In order to be eligible for reregistration, it is necessary to amend all product labels to incorporate the risk mitigation measures outlined in Section IV. The following table describes how language on the labels should be amended.

E. Required Labeling Changes Summary Table

Table 12: Summary of Required Labeling Changes for Tetrachlorvinphos		
Description	Required Labeling (Addendum to the 1995 RED Labeling Requirements)	Placement on Label
Manufacturing Use Products		
One of these statements may be added to a label to allow reformulation of the product for a specific use or all additional uses supported by a formulator or user group	“Only for formulation into an <i>insecticide</i> for the following use(s)” <i>[fill blank only with those uses that are being supported by MP registrant]</i> .	Directions for Use
	<p>“This product may be used to formulate products for specific use(s) not listed on the MP label if the formulator, user group, or grower has complied with U.S. EPA submission requirements regarding support of such use(s).”</p> <p>“This product may be used to formulate products for any additional use(s) not listed on the MP label if the formulator, user group, or grower has complied with U.S. EPA submission requirements regarding support of such use(s).”</p>	Directions for Use
Environmental Hazards Statements Required by the TRED and Agency Label Policies.	<p>“Environmental Hazards”</p> <p>"Do not discharge effluent containing this product into lakes, streams, ponds, estuaries, oceans, or other waters unless in accordance with the requirements of a National Pollutant Discharge Elimination System (NDPES) permit and the permitting authority has been notified in writing prior to discharge. Do not discharge effluent containing this product to sewer systems without previously notifying the local sewage treatment plant authority. For guidance contact your Water Board or Regional Office of the EPA."</p>	Precautionary Statements

Description	Required Labeling (Addendum to the 1995 RED Labeling Requirements)	Placement on Label
End Use Products Intended for Occupational Use		
<p>Handler PPE requirements (all formulations)</p>	<p>Note the following information when preparing labeling for all end use products:</p> <p>For sole-active-ingredient end-use products that contain tetrachlorvinphos, the product label must be revised to adopt the handler personal protective equipment (PPE)/engineering control requirements set forth in this section. Any conflicting PPE requirements on the current label must be removed.</p> <p>For multiple-active-ingredient end-use products that contain tetrachlorvinphos, the handler PPE/engineering control requirements set forth in this section must be compared with the requirements on the current label, and the more protective language must be retained. For guidance on which requirements are considered to be more protective, see PR Notice 93-7.</p> <p>PPE that was established on the basis of Acute Toxicity testing and currently appears on end-use product labels must be compared with the active ingredient PPE specified below by the TREAD. The more protective PPE must be placed in the product labeling. For guidance on which PPE is considered more protective, see PR Notice 93-7.</p>	<p>Handler PPE Statements</p>

Description	Required Labeling (Addendum to the 1995 RED Labeling Requirements)	Placement on Label
<p>PPE Requirements Established by the TRED for Wettable Powder Formulations applied as Sprays only.</p>	<p>“Personal Protective Equipment (PPE)”</p> <p>“Some materials that are chemical-resistant to this product are” (<i>registrant inserts correct chemical-resistant material</i>). “If you want more options, follow the instructions for category” [<i>registrant inserts A,B,C,D,E,F,G,or H</i>] “on an EPA chemical-resistance category selection chart.”</p> <p>“Mixers, loaders, applicators and other handlers supporting or using low-pressure handwand equipment or applying by paint brush must wear:</p> <ul style="list-style-type: none"> - Coveralls over long-sleeved shirt and long pants - Chemical resistant footwear plus socks - Chemical resistant gloves - A NIOSH-approved dust mist filtering respirator with MSHA/NIOSH approval number prefix TC-21C <i>or</i> a NIOSH-approved respirator with any N, R, P, or HE filter.” <p>All other mixers, loaders, applicators and other handlers must wear:</p> <ul style="list-style-type: none"> - long-sleeved shirt and long pants - socks and shoes - chemical resistant gloves for mixers and loaders supporting ground boom applications and all handlers supporting or using backpack spray equipment. <p><i>Note to Registrant: If the product contains oil or bears instructions that will allow application with an oil-containing material, the “N” filter designation must be dropped from the above respirator statement.</i></p>	<p>Precautionary Statements: Immediately following/below Hazards to Humans and Domestic Animals</p>

Description	Required Labeling (Addendum to the 1995 RED Labeling Requirements)	Placement on Label
<p>PPE Requirements Established by the TRED for Wettable Powder Formulations applied as Dusts only.</p>	<p>“Personal Protective Equipment (PPE)”</p> <p>“Some materials that are chemical-resistant to this product are” (<i>registrant inserts correct chemical-resistant material</i>). “If you want more options, follow the instructions for category [<i>registrant inserts A,B,C,D,E,F,G,or H</i>] on an EPA chemical-resistance category selection chart.”</p> <p>Loaders, applicators and other handlers must wear:</p> <ul style="list-style-type: none"> - Coveralls over long-sleeved shirt and long pants - Chemical resistant footwear plus socks - Chemical resistant gloves - A NIOSH-approved dust mist filtering respirator with MSHA/NIOSH approval number prefix TC-21C <i>or</i> a NIOSH-approved respirator with any N, R, P, or HE filter.” <p>Loaders and others handling dust bags must wear:</p> <ul style="list-style-type: none"> - long-sleeved shirt and long pants - socks and shoes - chemical resistant gloves. <p><i>Note to Registrant: If the product contains oil or bears instructions that will allow application with an oil-containing material, the “N” filter designation must be dropped from the above respirator statement.</i></p>	<p>Precautionary Statements: Immediately following/below Hazards to Humans and Domestic Animals</p>

Description	Required Labeling (Addendum to the 1995 RED Labeling Requirements)	Placement on Label
<p>PPE Requirements Established by the TRED for Wettable Powder Formulations applied as either as a Sprays or as a Dust</p>	<p>“Personal Protective Equipment (PPE)”</p> <p>“Some materials that are chemical-resistant to this product are” (<i>registrant inserts correct chemical-resistant material</i>). “If you want more options, follow the instructions for category” [<i>registrant inserts A,B,C,D,E,F,G,or H</i>] “on an EPA chemical-resistance category selection chart.”</p> <p>“Mixers, loaders, applicators and other handlers supporting dusting applications, low-pressure handwand applications or applications by paint brush must wear:</p> <ul style="list-style-type: none"> - Coveralls over long-sleeved shirt and long pants - Chemical resistant footwear plus socks - Chemical resistant gloves - A NIOSH-approved dust mist filtering respirator with MSHA/NIOSH approval number prefix TC-21C <i>or</i> a NIOSH-approved respirator with any N, R, P, or HE filter.” <p>All other mixers, loaders, applicators and other handlers must wear:</p> <ul style="list-style-type: none"> - long-sleeved shirt and long pants - socks and shoes - chemical resistant gloves for mixers and loaders supporting ground boom applications and all handlers supporting or using backpack spray equipment. <p><i>Note to Registrant: If the product contains oil or bears instructions that will allow application with an oil-containing material, the “N” filter designation must be dropped from the above respirator statement.</i></p>	

Description	Required Labeling (Addendum to the 1995 RED Labeling Requirements)	Placement on Label
PPE Requirements Established by the TRED for EC Formulations	<p>“Personal Protective Equipment (PPE)”</p> <p>“Some materials that are chemical-resistant to this product are” (<i>registrant inserts correct chemical-resistant material</i>). “If you want more options, follow the instructions for category” [<i>registrant inserts A,B,C,D,E,F,G,or H</i>] “on an EPA chemical-resistance category selection chart.”</p> <p>“Mixers loaders, applicators and other handlers must wear:</p> <ul style="list-style-type: none"> - long-sleeved shirt and long pants, - shoes plus socks - chemical resistant gloves for mixers and loaders supporting ground boom applications and all handlers supporting or using backpack or low pressure spray applications. 	Precautionary Statements: Immediately following/below Hazards to Humans and Domestic Animals
PPE Requirements Established by the TRED for Ear Tags, Mineral Blocks or Feed Pellets.	<p>“Personal Protective Equipment (PPE)”</p> <p>“Some materials that are chemical-resistant to this product are” (<i>registrant inserts correct chemical-resistant material</i>). “If you want more options, follow the instructions for category” [<i>registrant inserts A,B,C,D,E,F,G,or H</i>] “on an EPA chemical-resistance category selection chart.”</p> <p>“Loaders, applicators and other handlers must wear:</p> <ul style="list-style-type: none"> - long-sleeved shirt and long pants, - shoes plus socks - chemical resistant gloves” 	Precautionary Statements: Immediately following/below Hazards to Humans and Domestic Animals

Description	Required Labeling (Addendum to the 1995 RED Labeling Requirements)	Placement on Label
User Safety Requirements	<p>“Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables exist, use detergent and hot water. Keep and wash PPE separately from other laundry.</p> <p>Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product’s concentrate. Do not reuse them.”</p> <p><i>(The above phrase “Discard clothing....” is only required for WP formulations applied as sprays or dusts. It is not required for EC formulations.)</i></p>	Precautionary Statements: Immediately following the PPE requirements
User Safety Recommendations	<p>“User Safety Recommendations”</p> <p>“Users should wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet.”</p> <p>“Users should remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.”</p> <p>“Users should remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.”</p>	Precautionary Statements: Immediately following Engineering Controls) Must be placed in a box
Environmental Hazards	<p>“Environmental Hazards”</p> <p>Do not apply directly to water, or to areas where surface water is present or to intertidal areas below the mean high-water mark. Runoff may be hazardous to aquatic organisms in neighboring areas. Do not contaminate water when disposing of equipment wastewater or rinsate.</p>	Precautionary Statements: Immediately following the User Safety Recommendations

Description	Required Labeling (Addendum to the 1995 RED Labeling Requirements)	Placement on Label
Entry Restrictions for products applied as sprays.	“Do not enter or allow others to enter until sprays have dried”	Directions for Use in the Non-Agricultural Use Requirements Box.
Entry Restrictions for products applied as dusts.	“Do not enter or allow others to enter until dusts have settled”	Directions for Use in the Non-Agricultural Use Requirements Box.
General Application Restrictions	“Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application.”	Place in the Directions for Use

Description	Required Labeling (Addendum to the 1995 RED Labeling Requirements)	Placement on Label
Other Risk Mitigation Restrictions	<p>EC Formulations: Remove paint-on use on EC formulations and add the following statement: “This product may not be applied by paint brush”.</p> <p>Wettable Powder Formulations Applied as Sprays: “When using a low-pressure handwand, this product may only be used for spot treatments.”</p> <p>Feed Through Products (Mineral Blocks or Pellets): This product contains tetrachlorvinphos, which is a cholinesterase inhibitor.</p> <p>The most frequently reported clinical signs of cholinesterase inhibition in the horse are abdominal pain, lethargy, sweating, tearing and excessive salivation. If these signs are seen in horses, consult your veterinarian immediately.</p> <p>Do not use this product simultaneously or within a week before or after treatment with cholinesterase inhibiting drugs, pesticides or chemicals.</p> <p>Consult a veterinarian before using this product on debilitated, aged, pregnant or nursing animals.</p> <p>This product has not been tested in breeding horses.</p>	Directions for Use

Description	Required Labeling (Addendum to the 1995 RED Labeling Requirements)	Placement on Label
Other Risk Mitigation Restrictions	<p>For Pet Powder Uses:</p> <p>Use 1/3 oz. of powder per every 10 pounds of body weight of your cat or dog.</p> <p>For Outdoor Premise Uses:</p> <p>Restrict uses to only spot treatments.</p> <p>The product should be applied only one time per year.</p> <p>The product is to be used along woody borders of kennels, yards, campgrounds, recreational parks, and footpaths and roadways leading to such areas.</p>	

¹ PPE that is established on the basis of Acute Toxicity of the end-use product must be compared to the active ingredient PPE in this document. The more protective PPE must be placed in the product labeling. For guidance on which PPE is considered more protective, see PR Notice 93-7.

² If the product contains oil or bears instructions that will allow application with an oil-containing material, the “N” designation must be dropped.

Instructions in the Labeling section appearing in quotations represent the exact language that should appear on the label.

Instructions in the Labeling section not in quotes represents actions that the registrant should take to amend their labels or product registrations.

VI. Related Documents and How to Access Them

This interim Reregistration Eligibility Document is supported by documents that are presently maintained in the OPP docket. The OPP docket is located in Room 119, Crystal Mall #2, 1921 Jefferson Davis Highway, Arlington, VA. It is open Monday through Friday, excluding legal holidays from 8:30 am to 4 pm.

The docket initially contained preliminary risk assessments and related documents as of *[date]*. Sixty days later the first public comment period closed. The EPA then considered comments, revised the risk assessment, and added the formal "Response to Comments" document and the revised risk assessment to the docket on *[date]*.

All documents, in hard copy form, may be viewed in the OPP docket room or downloaded or viewed via the Internet at the following site: "<http://www.epa.gov/pesticides/op>."

Appendix A. Table of Use Patterns Eligible for Reregistration

Site Application Type Application Equipment	Formulation [EPA Reg No.]	Maximum Single Application Rate ¹	Use Limitations
Beef/Range/Feeder Cattle (Meat) & Dairy Cattle (Lactating or Unspecified)			
Animal Treatment (Backrubber)	24% Emulsifiable Concentrate [4691-132]	2 lb ai/ 25 gallons (25 and 50 gallons of charge solution considered).	Double layer clothing and gloves for workers when handling backrubber devices.
Animal Treatment -Dust (Dust Bag)	3% Dust [4691-131]	NS ²	Single layer and gloves for loaders and others handling dust bags.
Animal Treatment - Dust (Hand Held Duster) (Rotary Duster)	3% Dust [4691-131]	0.0375 lb ai/animal	Double layer clothing, gloves, and dust/mist respirator for mixers, loaders, and applicators using dusting equipment.
Animal Treatment (Shaker Can)	3% Dust [4691-131]	0.0375 lb ai/animal	Double layer clothing, gloves, and dust/mist respirator for mixers, loaders, and applicators using dusting equipment.
Animal Treatment (Backpack Sprayer) (Power Sprayer)	24% Emulsifiable Concentrate [4691-132]	0.001295 lb ai/animal	
Enclosed Premise Treatment (Backpack Sprayer) (Power Sprayer)	24% Emulsifiable Concentrate [4691-132]	.2129 lb 1K sq. ft	
Enclosed Premise Treatment (Backpack Sprayer) (Power Sprayer)	50% Wettable Powder [4691-128]	.3333 lb 1K sq. ft	.
Animal Treatment (Feed Through Use)	97.3 % Granular [4691-135]	0.00015 lb per 100 lb body weight per day	Single layer clothing and gloves for workers when handling pellets (oral larvicide feed- through products).
Animal Treatment (Cattle Ear Tag)	13.7% Ear Tag [56493-50]	NS	Single layer clothing and gloves for workers when handling ear tags.
Hog/Pig/Swine (Meat)			
Animal Bedding/Litter Treatment (Hand Held Duster)	3% Dust [4691-131]	.2 lb 1K sq.ft	Double layer clothing, gloves, and dust/mist respirator for mixers, loaders, and applicators using dusting equipment.
Animal Bedding/Litter Treatment (Power Duster)	3% Dust [4691-131]	2 lb 1K sq.ft	Double layer clothing, gloves, and dust/mist respirator for mixers, loaders, and applicators using dusting equipment.
Animal Bedding/Litter Treatment (Rotary Duster)	3% Dust [4691-131]	2 lb 1K sq.ft	Double layer clothing, gloves, and dust/mist respirator for mixers, loaders, and applicators using dusting equipment.

Site Application Type Application Equipment	Formulation [EPA Reg No.]	Maximum Single Application Rate ¹	Use Limitations
Animal Bedding/Litter Treatment (Shaker Can)	3% Dust [4691-131]	2 lb 1K sq.ft	Double layer clothing, gloves, and dust/mist respirator for mixers, loaders, and applicators using dusting equipment.
Animal Treatment (Hand Held Duster)	3% Dust [4691-131]	0.075 lb ai/animal	Double layer clothing, gloves, and dust/mist respirator for mixers, loaders, and applicators using dusting equipment.
Animal Treatment (Power Duster)	3% Dust [4691-131]	0.075 lb ai/animal	Double layer clothing, gloves, and dust/mist respirator for mixers, loaders, and applicators using dusting equipment.
Animal Treatment (Backpack Sprayer) (Power Sprayer)	24% Emulsifiable Concentrate [4691-132]	0.1575 lb ai/animal	
Animal Treatment (Backpack Sprayer) (Power Sprayer)	50% Wettable Powder [4691-128]	.02038 lb ai/animal	
Animal Treatment (Feed Through)	97.3 % Granular [4691-135]	0.00015 lb per 100 lb body weight per day	Single layer clothing and gloves for workers when handling pellets (oral larvicide feed-through products).
Enclosed Premise Treatment (Backpack Sprayer) (Power Sprayer)	24% Emulsifiable Concentrate [4691-132]	.2129 lb 1K sq.ft	
Enclosed Premise Treatment (Backpack Sprayer) (Power Sprayer)	50% Wettable Powder [4691-128]	.3333 lb 1K sq.ft	
Poultry (Egg)			
Animal Bedding/Litter Treatment (Backpack Sprayer) (Power Sprayer)	24% Emulsifiable Concentrate [4691-132]	0.0436 lb ai/100 ft ²	Single layer clothing and gloves for mixers, loaders, and applicators engaging in low pressure handwand and backpack spraying activities.
Animal Bedding/Litter Treatment (Backpack Sprayer) (Power Sprayer)	50% Wettable Powder [4691-128]	0.0417 lb ai/100 ft ²	Restrict the use of low pressure handwands for wettable powder applications to spot treatment in poultry facilities and require double layer clothing, gloves, and dust/mist respirator for mixers, loaders, and applicators engaging in low pressure handwand activities using the WP formulations in egg facilities.
Animal Bedding/Litter Treatment (Rotary Duster)	3% Dust [4691-131]	0.078 lb ai/100 ft ²	Double layer clothing, gloves, and dust/mist respirator for mixers, loaders, and applicators using dusting equipment.

Site Application Type Application Equipment	Formulation [EPA Reg No.]	Maximum Single Application Rate ¹	Use Limitations
Animal Bedding/Litter Treatment (Shaker Can)	3% Dust [4691-131]	0.078 lb ai/100 ft ²	Double layer clothing, gloves, and dust/mist respirator for mixers, loaders, and applicators using dusting equipment.
Animal Treatment (Dust Box)	3% Dust [4691-131]	0.078 lb ai/animal	Double layer clothing, gloves, and dust/mist respirator for mixers, loaders, and applicators using dusting equipment.
Animal Treatment (Rotary Duster)	3% Dust [4691-131]	0.078 lb ai/animal	Double layer clothing, gloves, and dust/mist respirator for mixers, loaders, and applicators using dusting equipment.
Animal Treatment (Shaker Can)	3% Dust [4691-131]	0.078 lb ai/animal	Double layer clothing, gloves, and dust/mist respirator for mixers, loaders, and applicators using dusting equipment.
Animal Treatment (Backpack Sprayer) (Power Sprayer)	24% Emulsifiable Concentrate [4691-132]	0.0436 lb ai/animal	Single layer clothing and gloves for mixers, loaders, and applicators engaging in low pressure handwand and backpack spraying activities.
Animal Treatment (Backpack Sprayer) (Power Sprayer)	50% Wettable Powder [4691-128]	0.0436 lb ai/animal	Restrict the use of low pressure handwands for wettable powder applications to spot treatment in poultry facilities and require double layer clothing, gloves, and dust/mist respirator for mixers, loaders, and applicators engaging in low pressure handwand activities using the WP formulations in egg facilities.
Poultry (Broiler)			
Animal Premise/Litter Treatment (Backpack Sprayer) (Power Sprayer)	24% Emulsifiable Concentrate [4691-132]	0.6996 lb ai/animal	Single layer clothing and gloves for mixers, loaders, and applicators engaging in low pressure handwand and backpack spraying activities.
Animal Premise/Litter Treatment (Backpack Sprayer) (Power Sprayer)	50% Wettable Powder [4691-128]	0.6996 lb ai/animal	Restrict the use of low pressure handwands for wettable powder applications to spot treatment in poultry facilities and require double layer clothing, gloves, and dust/mist respirator for mixers, loaders, and applicators engaging in low pressure handwand activities using the WP formulations in broiler facilities.
Animal Premise/Litter Treatment (Groundboom Sprayer)	24% Emulsifiable Concentrate [4691-132]	0.6996 lb ai/animal	Single layer clothing and gloves for mixers, loaders, and applicators engaging in groundboom activities.
Animal Premise/Litter Treatment (Groundboom Sprayer)	50% Wettable Powder [4691-128]	0.6996 lb ai/animal	Single layer clothing and gloves for mixers, loaders, and applicators engaging in groundboom activities.

Site Application Type Application Equipment	Formulation [EPA Reg No.]	Maximum Single Application Rate ¹	Use Limitations
Animal Bedding/Litter Treatment (Aerosol, Pump Spray)	1.08 % Spray [2596-140]	Repeat once a week.	
Animal Bedding/Litter Treatment	3.3 % Powder [2596-78]	Repeat at weekly intervals if necessary	
Animal Treatment	13.7 % Collar [4691-151]	Replace collar every four months.	
Animal Treatment	3.06 % Dip [2596-119]	Dilute 2 ounces of Dip with 1 gallon of water. Dip animal into solution, or sponge solution on, making sure hair is thoroughly wet to skin. Repeat as necessary for control.	
Animal Treatment	3.3 % Powder [2596-78]	1/3 oz for every 10 lb animal	
Animal Treatment (Aerosol, Pump Spray)	1.08 % Spray [2596-126]	Direct spray towards pet and spray entire coat pressing dispenser with quick short strokes. Move bottle to get even coverage of coat (until tips of hair are moist). Repeat once a week.	
Pets (Dogs)			
Animal Bedding/Litter Treatment (Aerosol, Pump Spray)	1.08 % Spray [2596-140]	Repeat once a week.	
Animal Bedding/Litter Treatment	3.3 % Powder [2596-79]	Repeat at weekly intervals if necessary	
Animal Treatment	13.7% Collar [4691-150]	Replace collar every five months.	
Animal Treatment	3.06 % Dip [2596-119]	Dilute 2 ounces of Dip with 1 gallon of water. Dip animal into solution, or sponge solution on, making sure hair is thoroughly wet to skin. Repeat as necessary for control.	
Animal Treatment	3.3 % Powder [2596-79]	1/3 oz for every 10 lb animal	

Site Application Type Application Equipment	Formulation [EPA Reg No.]	Maximum Single Application Rate ¹	Use Limitations
Animal Treatment (Aerosol, Pump Spray)	1.08 % Spray [2596-125]	Direct spray towards pet and spray entire coat pressing dispenser with quick short strokes. Move bottle to get even coverage of coat (until tips of hair are moist). Repeat once a week.	
Horses			
Feed Through	97.3 % Granular [4691-135]	0.00015 lb per 100 lb body weight per day	This product is a cholinesterase inhibitor. It should not be used with other cholinesterase inhibitors. Horse owners should consult a veterinarian before using products containing tetrachlorvinphos on debilitated, aged, breeding, pregnant or nursing animals
Non-Food Outdoor Residential			
Outdoor Premise Treatment (Kennels, Campgrounds, Picnic Areas)	50% Wettable Powder ³ [4691-128]	Restrict usage to spot treatment only. Usage should not exceed one time a year.	Only use along woody borders of kennels, yards, campgrounds, and recreational parks. Prohibit the use of outdoor premise treatment by homeowners.
Outdoor Premise Treatment (Fence Rows, Hedgerows, Foot Paths)	50% Wettable Powder [4691-128]	Restrict usage to spot treatment only. Usage should not exceed one time a year.	Only use along woody borders of footpaths and roadways leading to such areas. Prohibit the use of outdoor premise treatment by homeowners.

1. Maximum Rates are based on the Label Usage Information System (LUIS) report and the risk management decision
2. Not stated on the label
3. Typically used in conventional power or low pressure backpack sprayers

APPENDIX B

Data Supporting Guideline Requirements for the Reregistration of Tetrachlorvinphos

REQUIREMENT		USE PATTERN	CITATION(S)
<u>PRODUCT CHEMISTRY</u>			
New Guideline Number	Old Guideline Number		
830.1550	61-1	Product Identity and Composition	All 41222501, 41222502, 43160601
830.1600	61-2A	Start. Mat. & Mnfg. Process	All 41222501, 42013001
830.1670	61-2B	Formation of Impurities	All 40491301, 41222501, 42013001
830.1700	62-1	Preliminary Analysis	All 40924701, 41222502, 43160601, 43160602
830.1750	62-2	Certification of limits	All 41222502
830.1800	62-3	Analytical Method	All 41222502, 42013002, 42275201, 42679201, 43160601
830.6302	63-2	Color	All 41222503
830.6303	63-3	Physical State	All 41222503
830.6304	63-4	Odor	All 41222503
830.7200	63-5	Melting Point	All 41222503
830.7220	63-6	Boiling Point	All NOT APPLICABLE
830.7300	63-7	Density	All 41222503
830.7840 830.7860	63-8	Solubility	All 41222503
830.7950	63-9	Vapor Pressure	All 41222503
830.7370	63-10	Dissociation Constant	All NOT APPLICABLE
830.7550	63-11	Octanol/Water Partition Coefficient	All 41222503
830.7000	63-12	pH	All 41222503
830.6313	63-13	Stability	All 41222503
830.6314	63-14	Oxidizing/Reducing Action	All NOT APPLICABLE
830.6315	63-15	Flammability	All NOT APPLICABLE
830.6316	63-16	Explosibility	All NOT APPLICABLE
830.6317	63-17	Storage Stability	All 41222503, 42013003, 4207801
830.7100	63-18	Viscosity	All NOT APPLICABLE
830.6319	63-19	Miscibility	All NOT APPLICABLE
830.6320	63-20	Corrosion characteristics	All 41222503, 42013003
<u>ECOLOGICAL EFFECTS</u>			
850.2100	71-1A	Avian Acute Oral Toxicity	B, C, K 00160000
850.2200	71-2A	Avian Dietary Toxicity - Quail	B, C, K 00022923
850.2200	71-2B	Avian Dietary Toxicity - Duck	B, C, K 00022923
850.1075	72-1A	Fish Toxicity Bluegill	B, C, K 40098001
850.1075	72-1C	Fish Toxicity Rainbow Trout	 40098001

850.1010	72-2A	Invertebrate Toxicity	B, C, K	41257101
None	72-3A	Estuarine/Marine Toxicity - Fish		40228401
850.1025	72-3B	Estuarine/Marine Toxicity - Mollusk		40228401
850.1035	72-3C	Estuarine/Marine Toxicity - Shrimp		40228401
850.3020	141-1	Honey Bee Acute Contact		00036935
850.3030	141-2	Honey Bee Residue on Foliage		05000837

TOXICOLOGY

870.1100	81-1	Acute Oral Toxicity-Rat	ALL	41222504
870.1200	81-2	Acute Dermal Toxicity-Rabbit/Rat	ALL	41222505
870.1300	81-3	Acute Inhalation Toxicity-Rat	ALL	00138933
870.2400	81-4	Primary Eye Irritation-Rabbit	ALL	41222506
870.2500	81-5	Primary Skin Irritation	ALL	41222507
870.2600	81-6	Dermal Sensitization	ALL	41377902, 42981001
870.6100	81-7	Acute Delayed Neurotoxicity - Hen		00079791, 41905901
870.6200	81-8	Acute Neurotoxicity Screen		42912501
870.3100	82-1A	Subchronic Oral Toxicity Test (90-Day Feeding - Rodent)	B, L	43371201
870.3250	82-3	90-day Subchronic Dermal Toxicity Test, Rat		41342001
870.4100	83-1A	Chronic Feeding Toxicity - Rodent	B, L	00112525, 42980901
870.4100	83-1B	Chronic Feeding Toxicity -Non-Rodent	B, L	00077819, 42679401
870.4200	83-2A	Oncogenicity - Rat	B, L	00117443, 42980901
870.4200	83-2B	Oncogenicity - Mouse	B, L	00117443, 00126039
870.3700	83-3A	Developmental Toxicity - Rat	B, L	40152701, 4250101
870.3700	83-3B	Developmental Toxicity - Rabbit	B, L	00127831
870.3800	83-4	2-Generation Reproduction - Rat	B, L	00077802, 42054301
870.5140	84-2A	Gene Mutation (Ames Test)	B, C, K, L, M	41222508
870.5375	84-2B	Structural Chromosomal Aberration	B, C, K, L, M	41312901
None	84-4	Other Genotoxic Effects	B, C, K, L, M	42156401
870.7485	85-1	General Metabolism	B, L	41988401
870.7600	85-2	Dermal Penetration		42111501
870.7200	86-1	Domestic (Companion) Animal Safety		40436601, 41810101, 41810102

OCCUPATIONAL/RESIDENTIAL EXPOSURE

875.1200	233	Estimation of Dermal Exposure, Indoor Sites		45519601, 45528801
----------	-----	---------------------------------------------	--	--------------------

875.1400	234	Estimation of Inhalation Exposure, Indoor Sites		45519601, 45528801
875.2400	133-3	Dermal Passive Dosimetry Exposure		42622301, 45485501
875.2500	133-4	Inhalation Passive Dosimetry Exposure		42622301

ENVIRONMENTAL FATE

None	160-5	Chemical Identity	ALL	41222501, 41222502, 43160601
835.2120	161-1	Hydrolysis	ALL	41929101
835.4100	162-1	Aerobic Soil Metabolism	B, C, K	00077821, 42082401
835.1240	163-1	Leaching/Adsorption/Desorption	B, C, K	41681301
None	164-A-SS	Dissipation of Residues in Excrement		42848501

RESIDUE CHEMISTRY

860.1300	171-4B	Nature of Residue - Livestock	B	00116020, 00117354, 00120147, 00120204, 42828801, 42828802, 42828803
860.1340	171-4C	Residue Analytical Method - Plants	B	00038458, 00077812, 00077814, 00077816, 00115939, 00116020, 00116553, 00117329, 00117340, 00117351, 00117354, 00117389, 00118265, 00120147, 00120200, 00120205, 00120206, 00120229, 00130705, 00133913, 05004211
860.1340	171-4D	Residue Analytical Method - Animals	B	00038458, 00077812, 00077814, 00077816, 00115939, 00116020, 00116553, 00117329, 00117340, 00117351, 00117354, 00117389, 00118265, 00120147, 00120200, 00120205, 00120206, 00120229, 00130705, 00133913, 05004211
860.1380	171-4E	Storage Stability	B	00117329, 00117354, 00117361, 00117389, 00133913

860.1480	171-4J	Magnitude of Residues - Meat/Milk/Poultry/Egg	B	00038458, 00084189, 00115939, 00117298, 00117298, 00117339, 00117340, 00117354, 00117389, 00118265, 00120200, 00120206, 00120225, 00120227, 05006630
----------	--------	--------------------------------------------------	---	---------------------------------------------------------------------------------------------------------------------------------------------------------------------------

Appendix C. Technical Support Documents

Additional documentation in support of this RED is maintained in the OPP docket, located in Room 119, Crystal Mall #2, 1921 Jefferson Davis Highway, Arlington, VA. It is open Monday through Friday, excluding Federal holidays, from 8:30 am to 4 pm.

The docket initially contained preliminary risk assessments and related documents as of January 15, 1999. Sixty days later the first public comment period closed. The EPA then considered comments, revised the risk assessment, and added the formal "Response to Comments" document and the revised risk assessment to the docket on March 27, 2000.

All documents, in hard copy form, may be viewed in the OPP docket room or downloaded or viewed via the Internet at the following site:

www.epa.gov/pesticides/op

These documents include:

HED Documents

Boyle, Kathryn (USEPA/OPPTS/OPP/HED) Tetrachlorvinphos. The Revised HED Chapter of the Reregistration Eligibility Decision (RED) Document. April 1, 1998.

Swartz, Christina (USEPA/OPPTS/OPP/HED) Tetrachlorvinphos. Acute and Chronic Dietary Exposure and Risk Analyses. September 28, 1998.

Swartz, Christina (USEPA/OPPTS/OPP/HED) Tetrachlorvinphos. Addendum to HED Human Health Risk Assessment and RED Chapter dated 4/1/98. November 2, 1998.

Hanley, Susan (USEPA/OPPTS/OPP/HED) Tetrachlorvinphos. Occupational and Residential Exposure and Risk Assessment. November 3, 1998.

Hanley, Susan (USEPA/OPPTS/OPP/HED) Tetrachlorvinphos. Occupational and Residential Exposure and Risk Assessment. January 7, 1999.

Hanley, Susan (USEPA/OPPTS/OPP/HED) Tetrachlorvinphos. HED Response to 30 day comments submitted by Hartz Mountain Corporation: Occupational and Residential Exposure Assessment. January 7, 1999.

Hanley, Susan (USEPA/OPPTS/OPP/HED) Tetrachlorvinphos. Revised Occupational and Residential Exposure and Risk Assessment. June 2, 1999

Hazel, William (USEPA/OPPTS/OPP/HED) Tetrachlorvinphos. Revised HED Human Health Risk Assessment. June 16, 1999.

Olinger, Christine (USEPA/OPPTS/OPP/HED) Tetrachlorvinphos. Revised Anticipated Residue Estimates. June 16, 1999.

Swartz, Christina (USEPA/OPPTS/OPP/HED) Tetrachlorvinphos. Revised Acute and Chronic

Dietary Exposure and Risk Analyses for the HED Human Health Risk Assessment. June 16, 1999.

Hanley, Susan (USEPA/OPPTS/OPP/HED) Tetrachlorvinphos. Revised Occupational and Residential Exposure and Risk Assessment for the Health Effects Division RED. October 25, 1999.

Swartz, Christina (USEPA/OPPTS/OPP/HED) Tetrachlorvinphos. Revised HED Human Health Risk Assessment. December 8, 1999.

Dobozy, Virginia (USEPA/OPPTS/OPP/HED) Tetrachlorvinphos. Incident Report of Equine Reproduction Problems. March 15, 2000.

Dobozy, Virginia (USEPA/OPPTS/OPP/HED) Tetrachlorvinphos. Review of Registrants May 26, 2000 Submission Concerning Equitrol®. October 19, 2000.

Dawson, Jeffery (USEPA/OPPTS/OPP/HED) Tetrachlorvinphos. Addenda to previous occupational and residential risk assessment. February 15, 2001.

Hanley, Susan (USEPA/OPPTS/OPP/HED) Tetrachlorvinphos. Addendum for Residential Exposure using updated Standard Operating Procedures for Residential Exposure. June 8, 2001.

Dobozy, Virginia (USEPA/OPPTS/OPP/HED) Tetrachlorvinphos. Review of Literature References on Organophosphate Toxicity in Pregnant Horses. November 26, 2001.

Hanley, Susan (USEPA/OPPTS/OPP/HED) Addendum to the Tetrachlorvinphos Occupational and Residential Exposure Risk Revision for the Reregistration Evaluation Decision. February 4, 2002.

Dawson, Jeffery (USEPA/OPPTS/OPP/HED) Tetrachlorvinphos. Further revisions to occupational risk assessment for uses in poultry and cattle production industries. March 28, 2002.

Hanley, Susan (USEPA/OPPTS/OPP/HED) Tetrachlorvinphos. Summary of Revised Residential Handler and Postapplication Toddler Exposure Risk. April 1, 2002.

Swartz, Christina (USEPA/OPPTS/OPP/HED) Tetrachlorvinphos. Addendum to the HED Human Health Risk Assessment for the Interim Reregistration Eligibility Decision (IRED). April 5, 2002.

Dobozy, Virginia (USEPA/OPPTS/OPP/HED) Tetrachlorvinphos. Review of Cholinesterase Data in Horses Treated with Equitrol®. July 2, 2002.

Other Related Documents

Fuller, Demson (USEPA/OPPTS/OPP/SRRD) Letter sent to SRA International. Responding to their comments on the Preliminary Human Health Risk Assessment.

Wilhite, Mark (USEPA/OPPTS/OPP/SRRD) Letter sent to SRA International. Transmitting the

Addendum to the Preliminary Human Health Risk Assessment.

Wilhite, Mark (USEPA/OPPTS/OPP/SRRD) Letter sent to SRA International. Transmitting the Occupational and Residential Exposure Risk Assessment.

Wilhite, Mark (USEPA/OPPTS/OPP/SRRD) Letter sent to Hartz Mountain. Transmitting the Addendum to the Preliminary Human Health Risk Assessment.

Wilhite, Mark (USEPA/OPPTS/OPP/SRRD) Letter sent to Hartz Mountain. Transmitting the Occupational and Residential Exposure Risk Assessment.

Bieler, Pat (Hartz Mountain) Letter from Hartz Mountain responding to the Preliminary Human Health Risk Assessment. December 17, 1998.

Smith, Frederick (Boehringer Ingelhiem) Letter from SRA responding to the Preliminary Human Health Risk Assessment. December 18, 1998.

Bieler, Pat (Hartz Mountain) Letter from Hartz Mountain regarding Confidential Business Information in the Preliminary Human Health Risk Assessment. January 8, 1999.

Bieler, Pat (Hartz Mountain Company) Letter to Public Information and Records Integrity Branch entitled "Tetrachlorvinphos HED Human Health Risk Assessment". June 7, 1999.

Kiely, Tim (USEPA/OPPTS/OPP/BEAD) Quantitative Usage Analysis for Tetrachlorvinphos. November 12, 1999.

USEPA/OPPTS/OPP/SRRD Tetrachlorvinphos Overview. December 13, 1999.

USEPA/OPPTS/OPP/SRRD Tetrachlorvinphos. Meeting with the Registrant Hartz Mountain. May 5, 1999.

Fuller, Demson (USEPA/OPPTS/OPP/SRRD) Letter to SRA International. Protocol for combined Oral/Dermal Livestock Studies. June 11, 1999.

USEPA/OPPTS/OPP/SRRD Tetrachlorvinphos. Meeting with the Registrant Hartz Mountain. September 15, 1999.

Fuller, Demson (USEPA/OPPTS/OPP/SRRD) Response to Public Comments on the Preliminary Risk Assessment for the Organophosphate Tetrachlorvinphos. February 29, 2000.

USEPA/OPPTS/OPP/SRRD. Tetrachlorvinphos. Minutes to Conference Call. July 24, 2002

Appendix D. Citations Considered to be Part of the Data Base Supporting the Tolerance Reassessment Decision (Bibliography)

GUIDE TO APPENDIX D

1. **CONTENTS OF BIBLIOGRAPHY.** This bibliography contains citations of all studies considered relevant by EPA in arriving at the positions and conclusions stated elsewhere in the Reregistration Eligibility Document. Primary sources for studies in this bibliography have been the body of data submitted to EPA and its predecessor agencies in support of past regulatory decisions. Selections from other sources including the published literature, in those instances where they have been considered, are included.
2. **UNITS OF ENTRY.** The unit of entry in this bibliography is called a "study". In the case of published materials, this corresponds closely to an article. In the case of unpublished materials submitted to the Agency, the Agency has sought to identify documents at a level parallel to the published article from within the typically larger volumes in which they were submitted. The resulting "studies" generally have a distinct title (or at least a single subject), can stand alone for purposes of review and can be described with a conventional bibliographic citation. The Agency has also attempted to unite basic documents and commentaries upon them, treating them as a single study.
3. **IDENTIFICATION OF ENTRIES.** The entries in this bibliography are sorted numerically by Master Record Identifier, or "MRID" number. This number is unique to the citation, and should be used whenever a specific reference is required. It is not related to the six-digit "Accession Number" which has been used to identify volumes of submitted studies (see paragraph 4(d)(4) below for further explanation). In a few cases, entries added to the bibliography late in the review may be preceded by a nine character temporary identifier. These entries are listed after all MRID entries. This temporary identifying number is also to be used whenever specific reference is needed.
4. **FORM OF ENTRY.** In addition to the Master Record Identifier (MRID), each entry consists of a citation containing standard elements followed, in the case of material submitted to EPA, by a description of the earliest known submission. Bibliographic conventions used reflect the standard of the American National Standards Institute (ANSI), expanded to provide for certain special needs.
 - a. **Author.** Whenever the author could confidently be identified, the Agency has chosen to show a personal author. When no individual was identified, the Agency has shown an identifiable laboratory or testing facility as the author. When no author or laboratory could be identified, the Agency has shown the first submitter as the author.
 - b. **Document date.** The date of the study is taken directly from the document. When the date is followed by a question mark, the bibliographer has deduced the date from the evidence contained in the document. When the date appears as (1999), the Agency was unable to determine or estimate the date of the document.

- c. Title. In some cases, it has been necessary for the Agency bibliographers to create or enhance a document title. Any such editorial insertions are contained between square brackets.
- d. Trailing parentheses. For studies submitted to the Agency in the past, the trailing parentheses include (in addition to any self-explanatory text) the following elements describing the earliest known submission:
 - (1) Submission date. The date of the earliest known submission appears immediately following the word "received."
 - (2) Administrative number. The next element immediately following the word "under" is the registration number, experimental use permit number, petition number, or other administrative number associated with the earliest known submission.
 - (3) Submitter. The third element is the submitter. When authorship is defaulted to the submitter, this element is omitted.
 - (4) Volume Identification (Accession Numbers). The final element in the trailing parentheses identifies the EPA accession number of the volume in which the original submission of the study appears. The six-digit accession number follows the symbol "CDL," which stands for "Company Data Library." This accession number is in turn followed by an alphabetic suffix which shows the relative position of the study within the volume.

BIBLIOGRAPHY

MRID	CITATION
1359	Anderson, L.D.; Atkins, E.L., Jr. (1966) 1965 Research on the Effect of Pesticides on Honey Bees. (Unpublished study including table 2, received Feb 3, 1967 under 7G0566; prepared by Univ. of California--Riverside, Entomology Dept., submitted by American Cyanamid Co., Princeton, N.J.; CDL:090712-Q)
1384	Hill, E.F. (1971) Toxicity of selected mosquito larvicides to some common avian species. <i>Journal of Wildlife Management</i> 35(4): 757-762. (Also~In~unpublished submission received Feb 11, 1976 under 201-225; submitted by Shell Chemical Co., Washington, D.C.; CDL:222966-A)
2066	Stafford, E.M.; AliNiasee, M.T. (1970) Chemical Control of Omnivorous Leafroller on Grapes. (Unpublished study received Aug 3, 1972 under 3F1298; prepared by Univ. of California--Davis, Dept. of Entomology , submitted by Hercules, Inc., Wilmington, Del.; CDL:094715-J)
3639	Landis, W.R. (1971) Project No. and Title: 078-Furadan, 047-Pyrenone Products and 015-Thiodan: MC-584. (Unpublished study received Apr 12, 1973 under 279-1380; prepared by Michigan State Univ., Dept. of Entomology, submitted by FMC Corp., Philadelphia, Pa.; CDL:008901-E)
3854	Howitt, A.J. (1969) Thiodan: Pear--Pear Psylla: MC-364. (Unpublished study received Jul 18, 1972 under 279-1182; prepared in cooperation with Michigan State Univ., Dept. of Entomology, submitted by FMC Corp., Philadelphia, Pa.; CDL:002304-G)
3882	Rammer, I.A. (1969) Project No. and Title: 015--Thiodan: RC-174. (Unpublished study received Jun 9, 1969 under 279-2299; prepared in cooperation with Washington State Univ., Dept. of Entomology, Irrigated Agriculture Research and Extension Center, submitted by FMC Corp., Philadelphia, Pa.; CDL:002453-B)
3883	Klostermeyer, E.C. (1968) 1968 Progress Report: Corn Earworm Control. (Unpublished study received Jun 9, 1969 under 279-2299; prepared by Washington State Univ., Dept. of Entomology, Irrigated Agriculture Research and Extension Center, submitted by FMC Corp., Philadelphia, Pa.; CDL:002453-C)
3893	Mitchell, W.C. (1967) Number of Live Grass Webworm Larvae in Three 2-Sq. Ft. Samples: Honolulu, Hawaii. (Unpublished study received Jan 21, 1969 under 279-2109; prepared by Univ. of Hawaii, Dept. of Entomology, submitted by FMC Corp.,

Philadelphia, Pa.; CDL:002442-B)

- 5018 Lancaster, J.L., Jr. (1970) Fowl Mite and Louse Control: Report No. 26762. (Unpublished study received Oct 29, 1971 under 11556-4; prepared by Univ. of Arkansas, Dept. of Entomology for Chemagro Corp., submitted by Bayvet, Shawnee Mission, Kans. CDL:004548-B)
- 5110 Combs, R.L., Jr. (1971) Evaluation of Eight Insecticides for Control of the Hog Louse, *Haematopinus suis*: Report No. 30208. (Unpublished study received Jun 7, 1974 under 11556-23; prepared by Mississippi State Univ. of Applied Arts and Sciences, Agricultural and Forestry Experiment Station for Chemagro Corp., submitted by Bayvet, Shawnee Mission, Kans.; CDL:026541-B)
- 5168 Combs, R.L., Jr. (1971) Evaluation of Eight Insecticides for Control of the Hog Louse, *Haematopinus suis*: Report No. 30208. (Unpublished study received Jun 7, 1974 under 11556-26; prepared by Mississippi State Univ. of Applied Arts and Sciences, Agricultural and Forestry Experiment Station for Chemagro Corp., submitted by Bayvet, Shawnee Mission, Kans.; CDL:009818-E)
- 5311 Combs, R.L., Jr. (1967) Horn Fly Control Experiments Conducted Near Yazoo City, Mississippi: Report No. 22076. (Unpublished study received Feb 6, 1969 under 11556-16; prepared by Mississippi State Univ. of Applied Arts and Sciences, Agricultural Experiment Station for Chemagro Corp., submitted by Bayvet, Shawnee Mission, Kans.; CDL:007194-I)
- 5843 Seawright, J.A. (1965) Observations on the Face Fly, *Musca autumnalis*: A. Dust Stations for Control; B. Activity in Relation to Physical Variables. Master's thesis, Clemson Univ., Dept. of Entomology and Zoology. (Report no. 18116; unpublished study received Dec 15, 1967 under 11556-17; submitted by Bayvet, Shawnee Mission, Kans.; CDL:007146-K)
- 6118 Wang, D.; Summers, F.M. (1970) Summary Report: District Project No. PAW 70-39. (Unpublished study received Sep 2, 1970 under 0F0983; prepared in cooperation with Univ. of California--Davis, submitted by Rhodia, Inc., New Brunswick, N.J.; CDL:091693-G)
- 6133 Arnold, E.; Howitt, A.J. (1965) Zolone--Grape: Final Report No. C65-18. (Unpublished study received Feb 15, 1974 under 359-620; prepared by Rhodia, Inc. in cooperation with Michigan State Univ., Dept. of Entomology, submitted by Rhone-Poulenc, Inc., Monmouth Junction, N.J.; CDL:009831-E)
- 6175 Rhodia, Incorporated (1973) Introduction: Zolone. Summary of

studies 023337-B through 023337-H and 023337-M through 023337T. (Unpublished study received Mar 8, 1974 under 359-626; submitted by Rhone-Poulenc, Inc., Monmouth Junction, N.J.; CDL: 023337-A)

- 6179 Butts, R.F.; Glass, E.H.; Lienk, S.E. (1969) Zolone--Apple: Final Report No. BB 69-63. (Unpublished study received Mar 8, 1974 under 359-626; prepared by Rhodia, Inc. in cooperation with Cornell Univ., submitted by Rhone-Poulenc, Inc., Monmouth Junction, N.J.; CDL:023337-F)
- 6189 Smyth, E.P.; Westgard, P. (1968) Zolone--Pears: Final Report No. Port 68-33. (Unpublished study received Mar 8, 1974 under 359-626; prepared by Rhodia, Inc. in cooperation with Oregon State Univ., submitted by Rhone-Poulenc, Inc., Monmouth Junction, N.J.; CDL:023337-P)
- 6208 Butts, R.F.; Bobb, M.L. (1971) Final Report: District Project No. BB 71-1. (Unpublished study received Apr 12, 1972 under 1F1155; prepared in cooperation with Piedmont Research Laboratory, submitted by Rhodia, Inc., New Brunswick, N.J.; CDL:096445-B)
- 6211 Rhodia, Incorporated (1969) Phosalone--Tea: Phosalone Efficacy Data for Tea: Part Two. (Unpublished study received Jun 8, 1973 under 3H5038; prepared in cooperation with United Planters' Association of Southern India and Tea Research Association; CDL:221773-E)
- 6245 Howitt, A. (19??) Final Report No. C 65-29. (Unpublished study received Mar 26, 1971 under 1F1155; submitted by Rhodia, Inc., New Brunswick, N.J.; CDL:093474-N)
- 6248 Rhodia, Incorporated (1966) Final Report No. BB 66-127. (Unpublished study received Mar 26, 1971 under 1F1155; CDL:093474-S)
- 6250 Preiser, F.A.; Bobb, M.L. (1968) Final Report No. BB 68-82. (Unpublished study received Mar 26, 1971 under 1F1155; prepared in cooperation with Piedmont Research Laboratory, submitted Rhodia, Inc., New Brunswick, N.J.; CDL:093475-U)
- 6251 Preiser, F.A.; Bobb, M.L. (1968) Final Report No. BB 68-83. (Unpublished study received Mar 26, 1971 under 1F1155; prepared in cooperation with Piedmont Research Laboratory, submitted by Rhodia, Inc., New Brunswick, N.J.; CDL:093474-V)
- 6254 Smyth, E.P.; Anthon, T. (1969) Final Report: District Project No. Port 69-42. (Unpublished study received Mar 26, 1971 under

- 1F1155; prepared in cooperation with Washington State Univ., submitted by Rhodia, Inc., New Brunswick, N.J.; CDL:093474-Z)
- 6255 Smyth, E.P.; Anthon, T. (1969) Final Report: District Project No. Port 69-43. (Unpublished study received Mar 26, 1971 under 1F1155; prepared in cooperation with Washington State Univ., submitted by Rhodia, Inc., New Brunswick, N.J.; CDL:093474-AA)
- 6257 Butts, R.F.; Bobb, M.L. (1970) Final Report: District Project No. BB 70-9. (Unpublished study received Mar 26, 1971 under 1F1155; prepared in cooperation with Piedmont Research Laboratory, submitted by Rhodia, Inc., New Brunswick, N.J.; CDL:093474-AC)
- 6261 Knobel, H.; Smith, C. (1970) Final Report: District Project No. AT 70-27. (Unpublished study received Mar 26, 1971 under 1F1155; prepared in cooperation with North Carolina State Univ., submitted by Rhodia, Inc., New Brunswick, N.J.; CDL:093474-AG)
- 6263 Smyth, E.P.; Anthon, T. (1970) Final Report: District Project No. Port 70-37. (Unpublished study received Mar 26, 1971 under 1F1155; prepared in cooperation with Washington State Univ., submitted by Rhodia, Inc., New Brunswick, N.J.; CDL:093474-AI)
- 6264 Smyth, E.P.; Anthon, T. (1970) Final Report: District Project No. Port 70-38. (Unpublished study received Mar 26, 1971 under 1F1155; prepared in cooperation with Washington State Univ., submitted by Rhodia, Inc., New Brunswick, N.J.; CDL:093474-AJ)
- 6273 Lienk, S.E. (1966) Final Report No. BB 66-137. (Unpublished study received Mar 26, 1971 under 1F1155; prepared by New York State Agricultural Experiment Station, submitted by Rhodia, Inc., New Brunswick, N.J.; CDL:093474-AS)
- 6368 Wang, D.; Summers, F.M. (1970) Zolone EC--Almonds: Final Report No. PAW 70-21. (Unpublished study received May 6, 1970 under 0F0983; prepared in cooperation with Univ. of California--Davis, submitted by Rhodia, Inc., New Brunswick, N.J.; CDL:091692-O)
- 6372 Lillie, D.T.; Dibble, J. (1971) Zolone EC--Almonds: Final Report No. FD 71-104. (Unpublished study received on unknown date under 0F0983; prepared in cooperation with Univ. of California, submitted by Rhodia, Inc., New Brunswick, N.J.; CDL:091692-S)
- 6374 Wang, D.; Summers, F.M.; Rice, R. (1970) Zolone EC--Almonds: Final Report No. PAW 70-31. (Unpublished study received on

- unknown date under 0F0983; prepared in cooperation with Univ. of California--Davis, submitted by Rhodia, Inc., New Brunswick, N.J.; CDL:091692-U)
- 6375 Wang, D.; Summers, F.M. (1970) Zolone EC--Almonds: Final Report No. PAW 70-33. (Unpublished study received May 6, 1970 under 0F0983; prepared in cooperation with Univ. of California--Davis, submitted by Rhodia, Inc., New Brunswick, N.J.; CDL:091692-W)
- 6376 Wang, D.; Summers, F.M. (1970) Zolone EC--Almonds: Final Report No. PAW 70-34. (Unpublished study received on unknown date under 0F0983; prepared in cooperation with Univ. of California--Davis, submitted by Rhodia, Inc., New Brunswick, N.J.; CDL:091692-X)
- 6377 Wang, D.; Summers, F.M. (1970) Zolone EC--Almonds: Final Report No. PAW 70-35. (Unpublished study received on unknown date under 0F0983; prepared in cooperation with Univ. of California--Davis, submitted by Rhodia, Inc., New Brunswick, N.J.; CDL:091692-Y)
- 6416 Lillie, D.T.; Nakakihara, H. (1972) Bactospeine: Final Report No. 180472-099. (Unpublished study received Oct 4, 1973 under 359-674; prepared by Rhodia, Inc. in cooperation with Univ. of California--Riverside, submitted by Rhone-Poulenc, Inc., Monmouth Junction, N.J.; CDL:008916-L)
- 6439 Butts, R.F.; Trammel, K. (1970) Final Report: District Project No. BB 70-3. (Unpublished study received Aug 20, 1971 under 359-620; prepared in cooperation with New York State Agricultural Experiment Station, submitted by Rhone-Poulenc, Inc., Monmouth Junction, N.J.; CDL:003170-B)
- 6440 Butts, R.F.; Waters, L.H. (1970) Final Report: District Project No. BB 70-7. (Unpublished study received Aug 20, 1971 under 359-620; prepared in cooperation with New York State Agricultural Experiment Station and Hudson Valley Laboratory, submitted by Rhone-Poulenc, Inc., Monmouth Junction, N.J.; CDL:003170-C)
- 6441 Butts, R.F.; Moore, R. (1970) Final Report: District Project No. BB 70-11. (Unpublished study received Aug 20, 1971 under 359-620; prepared in cooperation with Connecticut Agricultural Experiment Station, submitted by Rhone-Poulenc, Inc., Monmouth Junction, N.J.; CDL:003170-D)
- 6449 Knobel, H.; Rock, G. (1969) Summary Report: District Project No. AT 69-24. (Unpublished study received Aug 20, 1971 under

- 359-620; prepared in cooperation with North Carolina State Univ., submitted by Rhone-Poulenc, Inc., Monmouth Junction, N.J.; CDL:003170-L)
- 6450 Butts, R.F.; Moore, R.C. (1969) Summary Report: District Project No. BB 69-58. (Unpublished study received Aug 20, 1971 under 359-620; prepared by Connecticut Agricultural Experiment Station, submitted by Rhone-Poulenc, Inc., Monmouth Junction, N.J.; CDL:003170-N)
- 6455 Preiser, F.A.; Dean, R.W. (1968) Report No. BB 68-81. (Unpublished study received Aug 20, 1971 under 359-620; prepared in cooperation with Hudson Valley Laboratory, submitted by Rhone-Poulenc, Inc., Monmouth Junction, N.J.; CDL:003170-T)
- 6456 Smyth, E.P.; Zwick, R. (1968) Report No. Port 68-38. (Unpublished study received Aug 20, 1971 under 359-620; prepared in cooperation with Oregon State Univ., submitted by Rhone-Poulenc, Inc., Monmouth Junction, N.J.; CDL:003170-U)
- 6462 DeLay, D.L.; Stafford, E.M. (1970) Final Report: District Project No. PA 70-52. (Unpublished study received Aug 20, 1971 under 359-620; prepared by Rhodia, Inc. in cooperation with Univ. of California--Davis, submitted by Rhone-Poulenc, Inc., Monmouth Junction, N.J.; CDL:003170-AF)
- 6473 Huckins, R.K.; Howitt, A.J. (1964) Insecticide Evaluation: Grapes--Berry Moth Control Field Test: District Report Code No. C-64-13. (Unpublished study received Aug 20, 1971 under 359-620; prepared in cooperation with Michigan State Univ., Dept. of Entomology, submitted by Rhone-Poulenc, Inc., Monmouth Junction, N.J.; CDL:003170-AS)
- 6489 Rhone-Poulenc, Incorporated (1967) Toxicity to Bees. Summary of studies 120351-G through 120351-I. (Unpublished study received Jun 13, 1974 under 359-620; prepared in cooperation with Washington State Univ. and Univ. of California, Agricultural Extension Service; CDL:120351-F)
- 6504 Arnold, E.; Forsythe, H.J., Jr. (19??) Report No. C 67-37. (Unpublished study received Jul 5, 1968 under 8F0668; submitted by Chipman Chemical Co., Inc., Burlingame, Calif.; CDL:092027-DD)
- 6535 DeLay, D.L.; Barnes, M. (1969) Summary Report: District Project No. PA 69-31. (Unpublished study received Feb 16, 1970 under 0F0948; prepared in cooperation with Univ. of California--Riverside, submitted by Rhodia, Inc., New Brunswick,

N.J.; CDL:092026-R)

- 6611 Arnold, E.; Danielson, D. (1965) Zolone EC--Potatoes: Final Report No. C 65-44. (Unpublished study received Dec 7, 1972 under 3F1337; prepared in cooperation with Univ. of Wisconsin, Dept. of Entomology, submitted by Rhodia, Inc., New Brunswick, N.J.; CDL:094849-AI)
- 6626 Preiser, F.A.; Asquith, D. (1968) Report No. BB 68-66. (Unpublished study received Dec 22, 1969 under 359-626; prepared in cooperation with Fruit Research Laboratory, submitted by Rhone Poulenc, Inc., Monmouth Junction, N.J.; CDL:003174-D)
- 6628 Preiser, F.A.; Glass, E.H. (1968) Report No. BB 68-84. (Unpublished study received Dec 22, 1969 under 359-626; prepared in 1 cooperation with Cornell Univ., submitted by Rhone-Poulenc, Inc., Monmouth Junction, N.J.; CDL:003174-F)Page 6 10/23/02 11:44:17
- 6630 Preiser, F.A.; Glass, E.H. (1968) Report No. BB 68-86. (Unpublished study received Dec 22, 1969 under 359-626; prepared in cooperation with Cornell Univ., submitted by Rhone-Poulenc, Inc., Monmouth Junction, N.J.; CDL:003174-H)
- 6632 Smyth, E.P.; Burkhart, D. (1969) Summary Report: District Project No. Port 69-29. (Unpublished study received Dec 22, 1969 under 359-626; submitted by Rhone-Poulenc, Inc., Monmouth Junction, N.J.; CDL:003174-J)
- 6635 Smyth, E.P.; Hoyt, S. (1969) Summary Report: District Project No. Port 69-35. (Unpublished study received Dec 22, 1969 under 359-626; submitted by Rhone-Poulenc, Inc., Monmouth Junction, N.J.; CDL:003174-M)
- 6636 Smyth, E.P.; Hoyt, S. (1969) Summary Report: District Project No. Port 69-36. (Unpublished study received Dec 22, 1969 under 359-626; submitted by Rhone-Poulenc, Inc., Monmouth Junction, N.J.; CDL:003174-N)
- 6637 Smyth, E.P.; Hoyt, S. (1969) Summary Report: District Project No. Port 69-37. (Unpublished study received Dec 22, 1969 under 359-626; submitted by Rhone-Poulenc, Inc., Monmouth Junction, N.J.; CDL:003174-O)
- 6658 Washington State University, Cooperative Extension Service (19??) Insecticide Toxicity to Honey Bees. (Unpublished study including test no. Port 68-67, received Nov 17, 1975 under 359-620; submitted by Rhone-Poulenc, Inc., Monmouth Junction,

N.J.; CDL:223344-L)

- 6659 Rhodia, Incorporated (19??) Toxicity to Bees|. (pp. 5,8 only; unpublished study received Nov 17, 1975 under 359-620; submitted by Rhone-Poulenc, Inc., Monmouth Junction, N.J.; CDL:223344-M)
- 6671 Preiser, F.; Lienk, S.E.; Glass, E.H. (1967) Report No. BB 67-85. (Unpublished study received Dec 8, 1967 under 8F0668; submitted by Chipman Chemical Co., Inc., Burlingame, Calif.; CDL:092961-F)
- 6751 Howitt, A. (1966) Final Report No. C 66-36. (Unpublished study received Mar 26, 1971 under 1F1155; submitted by Rhodia, Inc., New Brunswick, N.J.; CDL:093474-I)
- 6752 Rhodia, Incorporated (1966) Final Report No. BB 66-125. (Unpublished study received Mar 26, 1971 under 1F1155; CDL:093474-Q)
- 6753 Rhodia, Incorporated (1966) Final Report No. BB 66-126. (Unpublished study received Mar 26, 1971 under 1F1155; CDL:093474-R)
- 6766 Wang, D.; Summers, F.M.; Rice, E.R. (1970) Zolone EC--Almonds: Final Report No. PAW 70-32. (Unpublished study received on unknown date under 0F0983; prepared in cooperation with Univ. of California--Davis, submitted by Rhodia, Inc., New Brunswick, N.J.; CDL:091692-V)
- 6793 Smyth, E.P.; Johansen, C. (19??) Report No. Port 68-67. (Unpublished study received Jun 13, 1974 under 359-620; prepared in cooperation with Washington State Univ., submitted by Rhone-1 Poulenc, Inc., Monmouth Junction, N.J.; CDL:120351-X)
- 6799 Quist,(1966) Report No. PA 66-32. (Unpublished study received Jul 5, 1968 under 8F0668; submitted by Chipman Chemical Co., Inc., Burlingame, Calif.; CDL:092027-A)
- 6800 Quist, (1966) Report No. PA 66-62. (Unpublished study received Jul 5, 1968 under 8F0668; submitted by Chipman Chemical Co., Inc., Burlingame, Calif.; CDL:092027-B)
- 6801 Prokopy, R.J. (1966) Report No. BB 66-163. (Unpublished study received Jul 5, 1968 under 8F0668; prepared by Connecticut Agricultural Experiment Station, submitted by Chipman Chemical Co., Inc., Burlingame, Calif.; CDL:092027-C)

- 6802 Preiser, F.A.; Prokopy, R.J. (1967) Report No. BB 67-105. (Unpublished study received Jul 5, 1968 under 8F0668; prepared by Connecticut Agricultural Experiment Station, submitted by Chipman Chemical Co., Inc., Burlingame, Calif.; CDL:092027-D)
- 6804 Chipman Chemical Company, Incorporated (1966) Report No. BB 66-111. (Unpublished study received Jul 5, 1968 under 8F0668; CDL:092027-G)
- 6808 Chipman Chemical Company, Incorporated (1966) Report No. BB 66-112. (Unpublished study received Jul 5, 1968 under 8F0668; CDL:092027-K)
- 6809 Preiser, F.A.; Boulanger, L.W. (1967) Report No. BB 67-104. (Unpublished study received Jul 5, 1968 under 8F0668; submitted by Chipman Chemical Co., Inc., Burlingame, Calif.; CDL:092027-L)
- 6812 Howitt, A. (1965) Report No. C 65-30. (Unpublished study received Jul 5, 1968 under 8F0668; submitted by Chipman Chemical Co., Inc., Burlingame, Calif.; CDL:092027-O)
- 6814 Howitt, A. (1966) Report No. C 66-34. (Unpublished study received Jul 5, 1968 under 8F0668; submitted by Chipman Chemical Co., Inc., Burlingame, Calif.; CDL:092027-R)
- 6824 Glass, E.H. (1966) Report No. BB 66-132 (Large Plots). (Unpublished study received Jul 5, 1968 under 8F0668; submitted by Chipman Chemical Co., Inc., Burlingame, Calif.; CDL:092027-AE)
- 6829 Preiser, F.A.; Glass, E.H. (1967) Report No. BB 67-84. (Unpublished study received Jul 5, 1968 under 8F0668; submitted by Chipman Chemical Co., Inc., Burlingame, Calif.; CDL:092027-AK)
- 6835 Preiser, F.A.; Asquith, D. (1967) Report No. BB 67-86. (Unpublished study received Jul 5, 1968 under 8F0668; submitted by Chipman Chemical Co., Inc., Burlingame, Calif.; CDL:092027-AR)
- 6839 Arnold, E.; Forsythe, H.Y. (1967) Report No. C 67-39. (Unpublished study received Jul 5, 1968 under 8F0668; submitted by Chipman Chemical Co., Inc., Burlingame, Calif.; CDL:092027-AW)
- 6844 Hill, C. (1966) Report No. BB 66-143. (Unpublished study received Jul 5, 1968 under 8F0668; submitted by Chipman Chemical Co., Inc., Burlingame, Calif.; CDL:092027-BC)1Page 8

- 6860 Lincoln, C. (1966) Report No. PAS 66-79. (Unpublished study received Jul 5, 1968 under 8F0668; submitted by Chipman Chemical Co., Inc., Burlingame, Calif.; CDL:092027-BY)
- 6899 Glass, E. (1965) Report No. BB-65-123. (Unpublished study received on unknown date under 7G0575; submitted by Chipman Chemical Co., Inc., Burlingame, Calif.; CDL:090736-AB)
- 6907 Howitt, A.J. (1965) Report No. C-65-29. (Unpublished study received on unknown date under 7G0575; submitted by Chipman Chemical Co., Inc., Burlingame, Calif.; CDL:090736-AN)
- 6919 Chipman Chemical Company, Incorporated (1966) Report No. BB 66-126. (Unpublished study received on unknown date under 7G0575; CDL:090736-BK)
- 6920 Chipman Chemical Company, Incorporated (1966) Report No. BB 66-127. (Unpublished study received on unknown date under 7G0575; CDL:090736-BL)
- 6925 Howitt, A.J. (1966) Report No. C 66-36. (Unpublished study received on unknown date under 7G0575; submitted by Chipman Chemical Co., Inc., Burlingame, Calif.; CDL:090736-CD)
- 6947 Szabo, J.G.; Howitt, A.J. (1971) Final Report: District Project No.CH 71-105. (Unpublished study received Aug 27, 1973 under 359-620; prepared by Rhodia, Inc. in cooperation with Univ. of Michigan, Dept. of Entomology, submitted by Rhone-Poulenc, Inc., Monmouth Junction, N.J.; CDL:026718-E)
- 6983 Glass, E. (1965) Report No. BB 65-18. (Unpublished study received Jul 5, 1968 under 8F0668; submitted by Chipman Chemical Co., Inc., Burlingame, Calif.; CDL:092027-X)
- 7055 Lienk, S.E.; Chapman, P.J. (1966) Evaluation of Insecticides on Apple against Codling Moth and Other Orchard Pests. (Unpublished study received Mar 5, 1974 under 3F1308; prepared by New York State Agricultural Experiment Station, submitted by E.I. du Pont de Nemours & Co., Inc., Wilmington, Del.; CDL:092222-Z)
- 7062 Wagner, H.W. (1969) Codling Moth Control. (Unpublished study received Mar 5, 1974 under 3F1308; prepared by Canada, Dept. of Agriculture, Research Branch, Research Station, submitted by E.I. du Pont de Nemours & Co., Inc., Wilmington, Del.; CDL:092222-AG)

- 7063 Boulanger, L.W. (1969) Treatments. (Unpublished study received Mar 5, 1974 under 3F1308; prepared by Univ. of Maine, submitted by E.I. du Pont de Nemours & Co., Inc., Wilmington, Del.; CDL:092222-AH)
- 7074 Wagner, H.W. (1968) Control of Codling Moth. (Unpublished study received Mar 5, 1974 under 3F1308; prepared by Canada, Dept. of Agriculture, Research Branch, Research Station, submitted by E.I. du Pont de Nemours & Co., Inc., Wilmington, Del.; CDL:092222-AT)
- 7087 Higgins, H.D.; Bass, M. (1970) Methomyl Evaluation. (Unpublished 1 study received Apr 26, 1971 under 1F1158; prepared by Auburn Univ., submitted by E.I. du Pont de Nemours & Co., Inc., Wilmington, Del.; CDL:090951-N)
- 7097 Hofmaster, R.N.; Waterfield, R.L. (1966) Control of Tomato Fruit Worm on Marion Tomatoes. (Unpublished study received Mar 7, 1969 under 9F0814; prepared by Virginia Truck Experiment Station, Eastern Shore Branch, submitted by E.I. du Pont de Nemours & Co., Inc., Wilmington, Del.; CDL:093132-D)
- 7098 Hofmaster, R.N.; Waterfield, R.L. (1967) Control of Tomato Fruit-worms and Cutworms in Marion Tomatoes with a Regular Foliage Schedule. (Unpublished study received Mar 7, 1969 under 9F0814; prepared by Virginia Truck Experiment Station, Eastern Shore Branch, submitted by E.I. du Pont de Nemours & Co., Inc., Wilmington, Del.; CDL:093132-E)
- 7102 Ralston, L. (1968) Insecticidal Control of Tomato Fruitworm. (Unpublished study received Mar 7, 1969 under 9F0814; prepared by Louisiana State Univ., submitted by E.I. du Pont de Nemours & Co., Inc., Wilmington, Del.; CDL:093132-K)
- 7118 Shutt, V.; Simkover, H.G. (1972) Test on Alfalfa Caterpillar. (Unpublished study received Jun 29, 1976 under 201-347; submitted by Shell Chemical Co., Washington, D.C.; CDL:232403-K)
- 7154 Ruppel, R.F.; Kaiser, D.C.; Montei, M.D. (1973?) Test No. 73-22 (Unpublished study received Jun 29, 1976 under 201-347; submitted by Shell Chemical Co., Washington, D.C.; CDL:232407-V)
- 7601 Higgins, D.; Bass, M.H. (1970) Control of the Beet Armyworm, ~*Spodoptera exigua*~(Hub.) on Peanuts. Unpublished study prepared by E.I. du Pont de Nemours & Co., Inc. 21 p.
- 7645 Taschenberg, E.F. (1970) Grape Leafhopper Control--1970.

- (Unpublished study received on unknown date under 4F1437; prepared by New York Agricultural Experiment Station, submitted by E.I. du Pont de Nemours & Co., Inc., Wilmington, Del.; CDL:093831-M)
- 7660 Keaster, A.J. (1967) Control of Corn Earworm in Sweet Corn. (Unpublished study received Dec 28, 1968 under 8F0677; prepared by Univ. of Missouri, submitted by E.I. du Pont de Nemours & Co., Inc., Wilmington, Del.; CDL:091184-B)
- 7662 Hofmaster, R.N.; Waterfield, R.L. (1966) Control of Corn Earworm in N&K Code 199 Sweet Corn. (Unpublished study including letter dated Sep 29, 1966 from R.N. Hofmaster to Oscar C. Zoebisch, received Dec 28, 1968 under 8F0677; prepared by Virginia Truck Experiment Station, Eastern Shore Branch, Vegetable Research Station, submitted by E.I. du Pont de Nemours & Co., Inc., Wilmington, Del.; CDL:091184-D)
- 7664 Semel, M. (1966) Sweet Corn: Corn Earworm Control: Table 4. (Unpublished study received Dec 28, 1968 under 8F0677; prepared by Cornell Univ., submitted by E.I. du Pont de Nemours & Co., Inc., Wilmington, Del.; CDL:091184-G)
- 7665 Keaster, A.J.; Fairchild, M.L. (1966) Evaluation of Insecticidal Materials for the Control of Corn Earworm in Sweet Corn. (Unpublished study received Dec 28, 1968 under 8F0677; prepared by Univ. of Missouri--Columbia, submitted by E.I. du Pont de Nemours & Co., Inc., Wilmington, Del.; CDL:091184-H)
- 7867 Jonsson, B.G.; Apple, J.W. (1971) Control of Larvae in Pea Fields: 1971 Annual Report: Project 154. (Unpublished study received Oct 31, 1977 under 352-342; prepared by Univ. of Wisconsin--Madison, Dept. of Entomology, submitted by E.I. du Pont de Nemours & Co., Wilmington, Del.; CDL:232151-N)
- 7910 Leigh, T. (1967) Evaluation of Candidate Toxicants for Bollworm Control. (Unpublished study received Apr 16, 1971 under 1G1144; prepared by Univ. of California, submitted by E.I. du Pont de Nemours & Co., Inc., Wilmington, Del.; CDL:090931-X)
- 7921 Reynolds, H.T. (1969) The Potential of Selected Insecticides on the Control of the Cotton Leaf Perforator. (Unpublished study received Apr 16, 1971 under 1G1144; prepared by Univ. of California--Riverside, Citrus Research Center and Agricultural Experiment Station, Dept. of Entomology, submitted by E.I. du Pont de Nemours & Co., Inc., Wilmington, Del.; CDL:090931-AJ)
- 8048 E.I. du Pont de Nemours & Company (1971?) Data Supporting the Use of Lannate^{1/4}(R)μ Methomyl Insecticide on Sugar Beets.

- (Unpublished study received Mar 6, 1972 under 352-342;
CDL:003036-U)
- 8054 Wolfenbarger, D.O. (1969) Tomato Fruitworm and Cabbage Looper Control on Field Grown Tomatoes. (Unpublished study received Jan 29, 1970 under 352-342; prepared by Florida Agricultural Experiment Station, submitted by E.I. du Pont de Nemours & Co., Wilmington, Del.; CDL:003010-C)
- 8108 Girardeau, J.H. (1967) Field Tests with Insecticide for the Control of the Budworm. (Unpublished study received Apr 22, 1969 under 352-342; prepared by Georgia Coastal Plain Experiment Station, Entomology Dept., submitted by E.I. du Pont de Nemours & Co., Wilmington, Del.; CDL:003007-R)
- 8111 Thurston, R. (1967) 1967 Tobacco Insect Control. (Unpublished study received Apr 22, 1969 under 352-342; prepared by Univ. of Kentucky, submitted by E.I. du Pont de Nemours & Co., Wilmington, Del.; CDL:003007-U)
- 8118 Loman, T.D. (1968) Mr. Robertson's Smoking Comments. (Unpublished study including letter dated Feb 5, 1968 from I. Neas to Walter J. Mistic, received Apr 22, 1969 under 352-342; prepared by R.J. Reynolds Tobacco Co. for North Carolina State Univ., submitted by E.I. du Pont de Nemours & Co., Wilmington, Del.; CDL:003007-AG)
- 8130 E.I. du Pont de Nemours and Company (1976) Data Supporting the Use of Lannate^{1/4}(R) μ Methomyl Insecticide and Lannate^{1/4}(R) μ L Methomyl Insecticide for Use on Sweet Corn. Summary of studies 225396-B through 225396-K, 225396-M through 225396-Q and 225396-S through 225396-AA. (Unpublished study received May 28, 1976 under 352-342; CDL:225396-A)
- 8136 Janes, M.J. (1975) Evaluation of Sprays for Control of Corn Earworm and Fall Armyworm (~Lepidoptera: Noctuidae~) on Ears of Sweet Corn: Belle Glade AREC Research Report EV-1975-7. (Unpublished study received May 28, 1976 under 352-342; prepared by Univ. of Florida, Institute of Food and Agricultural Sciences, Agricultural Research and Education Center, submitted by E.I. du Pont de Nemours & Co., Wilmington, Del.; CDL:225396-I)
- 8145 E.I. du Pont de Nemours and Company (1974) Data Supporting the Use of Lannate^{1/4}(R) μ Methomyl Insecticide and Lannate^{1/4}(R) μ L Methomyl Insecticide on Corn. Summary of studies 023294-A through 023294-G and 023294-I through 023294-Q. (Unpublished study received Mar 5, 1974 under 352-342; CDL:023294-A)
- 8147 Yahnke, B.L. (1970) Corn Borer Insecticide Evaluation (1970): Project Report Abstract 900-2J0-055. (Unpublished study received Mar 5, 1974

under 352-342; submitted by E.I. du Pont de Nemours & Co., Wilmington, Del.; CDL:023294-C)

- 8148 Hudon, M. (1971?) Chemical Control of the European Corn Borer on Sweet Corn in Southwestern Quebec. (Unpublished study received Mar 5, 1974 under 352-342; prepared by Canada, Dept. of Agriculture, Research Station, submitted by E.I. du Pont de Nemours & Co., Wilmington, Del.; CDL:023294-E)
- 8149 McClanahan, R.J.; Founk, J. (1971?) Control of European Corn Borer. (Unpublished study received Mar 5, 1974 under 352-342; prepared by Canada, Dept. of Agriculture, Research Station, submitted by E.I. du Pont de Nemours & Co., Wilmington, Del.; CDL:023294-F)
- 8152 Spatcher, D.L.; Rhoads, T.C. (1971) Armyworm--Corn. (Unpublished study received Mar 5, 1974 under 352-342; submitted by E.I. du Pont de Nemours & Co., Wilmington, Del.; CDL:023294-P)
- 8167 Wagner, H.W. (1972) Compatibility Study of Multiple Spray Material Combinations. (Unpublished study received Mar 4, 1974 under 352-362; prepared by Canada, Dept. of Agriculture, Research Station, submitted by E.I. du Pont de Nemours & Co., Wilmington, Del.; CDL:026710-E)
- 8178 Wagner, H.W. (1973) Codling Moth Control. (Unpublished study received Mar 4, 1974 under 352-362; prepared by Canada, Dept. of Agriculture, Research Station, submitted by E.I. du Pont de Nemours & Co., Wilmington, Del.; CDL:026710-U)
- 8271 Hoskins, R.W.; Reed, J. (1969) Control of Cabbage Looper on Lettuce. (Unpublished study received Jun 16, 1971 under 1F1021; prepared in cooperation with Rutgers Univ., New Jersey Agricultural Experiment Station, submitted by E.I. du Pont de Nemours & Co., Inc., Wilmington, Del.; CDL:091071-S)
- 8274 Shipman, H. (1969) 1969 Test of New Materials to Control Alfalfa Loopers & Pea Aphis sic on Peas. (Unpublished study received Jun 16, 1971 under 1F1021; prepared by Del Monte Corp., submitted by E.I. du Pont de Nemours & Co., Inc., Wilmington, Del.; CDL:091071-V)
- 8278 Brett, C.H.; Sullivan, M.J. (1968) Mexican Bean Beetle Insecticide Tests. (Unpublished study received Jun 16, 1971 under 1F1021; prepared by North Carolina State Univ., Entomology Dept., submitted by E.I. du Pont de Nemours & Co., Inc., Wilmington, Del.; CDL:091071-AC)
- 8279 Brett, G.H.; Sullivan, M.J. (1967) Control of Mexican Bean Beetle on Snap Beans: Table 1. (Unpublished study received Jun 16, 1971 under 1F1021; submitted by E.I. du Pont de Nemours & Co., Inc., Wilmington, Del.; CDL:091071-AD)

- 8284 Bass, M.H. (1967) False Cabbage Looper Control. (Unpublished study received Jun 16, 1971 under 1F1021; prepared by Auburn Univ., submitted by E.I. du Pont de Nemours & Co., Inc., Wilmington, Del.; CDL:091071-AJ)
- 8318 Lange, W.H. (1970) Greenbean Experiment. (Unpublished study received Jun 29, 1976 under 201-347; prepared by Univ. of California--Davis, Agricultural Experiment Station, Dept. of Entomology in cooperation with Del Monte Corp., submitted by Shell Chemical Co., Washington, D.C.; CDL:232406-B)
- 8350 E.I. du Pont de Nemours & Company (1969) Control of Blueberry Leafroller. (Unpublished study received Mar 15, 1978 under 352-342; CDL:096959-V)
- 8437 Libby, J. (1970) Foliar Sprays on Pencil Pod Black Wax Beans. (Unpublished study received Mar 4, 1974 under 352-342; prepared by Univ. of Wisconsin, submitted by E.I. du Pont de Nemours & Co., Wilmington, Del.; CDL:009841-C)
- 8467 Meister, H.S. (1971) Lannate and the size of the looper. Imp. Agri. Briefs ? (?/Oct):3-4. (Also~In~unpublished submission received Dec 8, 1976 under 352-362; submitted by E.I. du Pont de Nemours & Co., Wilmington, Del.; CDL:227248-F)
- 8488 Simpson, C.M. (1968?) Evaluation of New Materials for Berry Moth Control. (Unpublished study received Apr 24, 1975 under 352-342; prepared by Canada, Dept. of Agriculture, Research Station, submitted by E.I. du Pont de Nemours & Co., Wilmington, Del.; CDL:119829-W)
- 8492 Simpson, C.M. (1968) Comparison of Old and New Materials for Berry Moth Control. (Unpublished study received Apr 24, 1975 under 352-342; prepared by Canada, Dept. of Agriculture, Research Station, submitted by E.I. du Pont de Nemours & Co., Wilmington, Del.; CDL:119829-AB)
- 8494 McCally ósic, N. (1969) The Effects of Insecticide Dusts and Sprays on Control of Orange Tortrix Larvae Infesting Grape Clusters, Aug 8, 1969--Table 1. (Unpublished study received Apr 24, 1975 under 352-342; prepared by Univ. of California--Salinas, submitted by E.I. du Pont de Nemours & Co., Wilmington, Del.; CDL:119829-AF)
- 8555 Morris, R.C.; Abrahamson, L.P. (1970) Final Report: Control of Forest Defoliators without Damage to Wildlife in Hardwood Bottom lands: (Effect of Aerially Sprayed Insecticides on the Forest Tent Caterpillar in Swamp Tupelo): FS-SO-2202.5314. (Unpublished study received Mar 9, 1977 under 352-EX-95; prepared by U.S. Forest Service, Southern Forest Experiment Station, Southern Hardwoods Laboratory, submitted by E.I. du Pont de Nemours & Co., Inc., Wilmington, Del.; CDL:228633-D)

- 8558 Drouin, J.A.; Kusch, D.S. (1975) Pesticide Field Trials on Shade and Shelterbelt Trees in Alberta and Saskatchewan, 1974. Edmonton, Alberta: Canada, Forestry Service. (pp. 7-9 only; Northern Forest Research Centre, Information report NOR-X-131; also~In~unpublished submission received Mar 9, 1977 under 352-EX-95; submitted by E.I. du Pont de Nemours & Co., Inc., Wilmington, Del.; CDL:228633-I)
- 8632 Girardeau, J.H., Jr. (1970) Insecticide Sprays for Budworm Control: State Project 2-124. (Unpublished study received Nov 16, 1971 under 352-342; prepared by Georgia Coastal Plain Experiment Station, submitted by E.I. du Pont de Nemours & Co., Wilmington, Del.; CDL:003031-C)
- 8634 Tappan, W.B. (1970) Flue Cured Tobacco--Green Peach Aphid. (Unpublished study received Nov 16, 1971 under 352-342; submitted by E.I. du Pont de Nemours & Co., Wilmington, Del.; CDL:003031-H)
- 8635 University of Florida, North Florida Experiment Station (1970) Field Evaluation of Insecticides for Control of Insects Attacking Cigar-Wrapper Tobacco in 1970. (Unpublished study received Nov 16, 1971 under 352-342; submitted by E.I. du Pont de Nemours & Co., Wilmington, Del.; CDL:003031-I)
- 8637 Tappan, W.B. (1970) Shade Tobacco. (Unpublished study received Nov 16, 1971 under 352-342; submitted by E.I. du Pont de Nemours & Co., Wilmington, Del.; CDL:003031-K)
- 8641 Simpson, C.M. (19??) Potato Insect Control. (Unpublished study received Nov 16, 1971 under 352-342; prepared by Canada, Dept. of Agriculture, Research Station, submitted by E.I. du Pont de Nemours & Co., Wilmington, Del.; CDL:003031-W)
- 8694 Meister, H.S.; Mayberry, K.; Bowen, W.R.; et al. (1970) Insect Control on Alfalfa. (Unpublished study received Mar 30, 1972 under 352-342; submitted by E.I. du Pont de Nemours & Co., Wilmington, Del.; CDL:003039-F)
- 8700 Bacon, O. (1970) Lygus Bug Populations in Seed Alfalfa Plots Treated for Lygus Bug Control as Shown by Two Methods of Sampling. (Unpublished study received Mar 30, 1972 under 352-342; prepared by Univ. of California--Davis, submitted by E.I. du Pont de Nemours & Co., Wilmington, Del.; CDL:003039-M)
- 8707 Bowen, W.R.; Hobza, B.; Gruenberg, G. (1971) The Effect of Several Insecticides Applied to Alfalfa for Egyptian Alfalfa Weevil Control. (Unpublished study received Mar 30, 1972 under 352-342; prepared by Univ. of California--Riverside in cooperation with Wilbur Ellis Co., submitted by E.I. du Pont de Nemours & Co., Wilmington, Del.; CDL:003039-T)

- 8724 Founk, J.; McClanahan, R.J. (1970) Control of European Corn Borer in Peppers. (Unpublished study received Apr 13, 1971 under 352-342; prepared by Canada, Dept. of Agriculture, Research Station, submitted by E.I. du Pont de Nemours & Co., Wilmington, Del.; CDL:003023-E)
- 8726 E.I. du Pont de Nemours & Company (1971) Data Supporting the Use of Lannate Methomyl Insecticide on Sugar Beets. Summary of studies 003024-B through 003024-S. (Unpublished study received Apr 13, 1971 under 352-342; CDL:003024-A)
- 8729 Meister, H.S. (1970) Beet Armyworm Control on Sugar Beets. (Unpublished study received Apr 13, 1971 under 352-342; submitted by E.I. du Pont de Nemours & Co., Wilmington, Del.; CDL:003024-E)
- 8738 Ratto, D.B.; Jenkins, F. (1970) Lannate--Sugar Beets. (Unpublished study received Apr 13, 1971 under 352-342; submitted by E.I. du Pont de Nemours & Co., Wilmington, Del.; CDL:003024-N)
- 8745 Lange, W.H. (1968) Yolo Chemical Control Experiment on Tomatoes--1968. (Unpublished study received Jan 29, 1970 under 352-342; prepared by Univ. of California--Davis, Dept. of Entomology in cooperation with Del Monte Corp., submitted by E.I. du Pont de Nemours & Co., Wilmington, Del.; CDL:003025-G)
- 8750 Wells, A.; Downes, J.; Townsend, C. (1969) Cabbage Looper Control on Cabbage: Table 9. (Unpublished study received Apr 13, 1971 under 352-342; submitted by E.I. du Pont de Nemours & Co., Wilmington, Del.; CDL:003023-Q)
- 8768 Wolfenbarger, D.O. (1967) Corn--Fall 1967. (Unpublished study received Nov 16, 1971 under 352-342; prepared by Sub-Tropical Experiment Station, submitted by E.I. du Pont de Nemours & Co., Wilmington, Del.; CDL:003037-F)
- 8773 Hofmaster, R.E.; Waterfield, R.L. (1970) Lannate--Sweet Corn. (Unpublished study received Nov 16, 1971 under 352-342; prepared by Virginia Truck and Ornamentals Research Station, Eastern Shore Branch, submitted by E.I. du Pont de Nemours & Co., Wilmington, Del.; CDL:003037-N)
- 8774 Cetas, R.C. (1970) Control of the Worm Complex Attacking Sweet Corn Ears. (Unpublished study received Nov 16, 1971 under 352-342; prepared by Cornell Univ., New York State Agricultural Experiment Station, Long Island Vegetable Research Farm, submitted by E.I. du Pont de Nemours & Co., Wilmington, Del.; CDL:003037-O)
- 8775 Davis, A.C. (1970) Control of European Corn Borer with Sprays of Insecticides on a Commercial Basis: Table 3. (Unpublished study received Nov 16, 1971 under 352-342; prepared by Cornell Univ.,

- submitted by E.I. du Pont de Nemours & Co., Wilmington, Del.;
CDL:003037-P)
- 8776 Apple, J.W. (1970) Control of Late Season Corn Borers & Corn Ear-worms: 1970 Annual Report: Project 468. (Unpublished study received Nov 16, 1971 under 352-342; prepared by Univ. of Wisconsin submitted by E.I. du Pont de Nemours & Co., Wilmington, Del.; CDL:003037-Q)
- 8780 Stabler, D.; Timmons, C. (1970) Lannate Methyomyl ósic| Insecticide--Evaluation. (Unpublished study received Nov 16, 1971 under 352-342; prepared in cooperation with Joan of Arc Canning Co., submitted by E.I. du Pont de Nemours & Co., Wilmington, Del.; CDL:003037-W)
- 8781 Scott, H.E.; Sorensen, K.A. (1971) Sweet Corn Demonstration. (Unpublished study received Nov 16, 1971 under 352-342; prepared by North Carolina State Univ., submitted by E.I. du Pont de Nemours & Co., Wilmington, Del.; CDL:003037-X)
- 8782 Apple, J.W. (1971) 1971 Annual Report: Project 648: Protecting Late Canning Corn from Second Generation Corn Borer. (Unpublished study received Nov 16, 1971 under 352-342; prepared by Univ. of Wisconsin, submitted by E.I. du Pont de Nemours & Co., Wilmington, Del.; CDL:003037-Y)
- 8783 Spatcher, D.L.; Rhoads, T.C. (1971) Fall Armyworm Control. (Unpublished study received Mar 9, 1972 under 352-342; submitted by E.I. du Pont de Nemours & Co., Wilmington, Del.; CDL:003037-Z)
- 8788 E.I. du Pont de Nemours & Company (1971) Data Supporting the Use of Lannate^{1/4}(R)µ Methomyl Insecticide on Sugar Beets. (Unpublished study received Jul 1, 1971 under 352-342; CDL:023298-A)
- 8842 Greene, G.L. (1967) Control of Corn Earworm on Sweetcorn. (Unpublished study received Dec 28, 1968 under 8F0671; prepared by Univ. of Florida, submitted by E.I. du Pont de Nemours & Co., Inc., Wilmington, Del.; CDL:091179-S)
- 8889 Hale, R. (1970) Control of Tomato Fruitworm and Tomato Pinworm on Tomatoes. (Unpublished study received Dec 20, 1974 under 352-342; prepared by Univ. of California--Riverside, submitted by E.I. du Pont de Nemours & Co., Wilmington, Del.; CDL:022993-H)
- 8891 Fennell, J.J.; Thomas, W.O. (1974) Lannate--Tomato Pinworm--1971. (Unpublished study received Dec 20, 1974 under 352-342; prepared by Mississippi State Univ. of Applied Arts and Sciences, Truck Crops Experiment Station, submitted by E.I. du Pont de Nemours & Co., Wilmington, Del.; CDL:022993-K)

- 8955 Meister, H.S.; Hagemann, R.W. (1970) Insect Control on Alfalfa: Egyptian Alfalfa Weevil Control. (Unpublished study received Apr 12, 1971 under 1F1159; submitted by E.I. du Pont de Nemours & Co., Inc., Wilmington, Del.; CDL:093479-J)
- 9044 Koehler, C.S. (1971) Evaluation of Materials for Control of the Pea Aphid on Alfalfa. (Unpublished study received Oct 12, 1978 under 352-342; prepared by Univ. of California--Berkeley, Div. of Entomology, submitted by E.I. du Pont de Nemours & Co., Wil-mington, Del.; CDL:236883-I)
- 9069 Clemson University (1970) Effectiveness of insecticides against soybean looper, clover worm and velvet bean caterpillar on soybeans (applied September 2, 1970): Table 2. Page C-41,~In~ Research and Demonstration Results: 20th Annual Pesticide Chemicals School. By Dept. of Agronomy and Soils, Dept. of Entomology and Economic Zoology, Dept. of Horticulture and Dept. of Plant Pathology and Plant Physiology. Clemson, S.C.: Clemson Univ. (Also~In~unpublished submission received Jun 29, 1976 under 201-347; submitted by Shell Chemical Co., Washington, D.C.; CDL:232405-AA)
- 9087 Libby, J.L.; Hartberg, T.J. (1970) 1970 Vegetable Crops Entomology Research Report. (Incomplete study; unpublished study received Jun 29, 1976 under 201-347; prepared by Univ. of Wisconsin, Dept. of Entomology, submitted by Shell Chemical Co., Washington, D.C.; CDL:232406-AB)
- 9095 Davis, L.B.; Laster, M.L.; Campbell, G.M. (1969) Control of Insects on Snap Beans and Southern Peas. (Unpublished study received Mar 4, 1974 under 352-342; submitted by E.I. du Pont de Nemours & Co., Wilmington, Del.; CDL:009841-F)
- 9114 E.I. du Pont de Nemours & Company (1973) Confidential Summary: 1973 Groundspray Experiments: Spruce Budworm. (Unpublished study received May 6, 1976 under 352-342; CDL:224073-C)Page 16 10/23/02 11:44:17
- 9117 DeBoo, R.F.; Campbell, L.M. (1972) Plantation Research: V. Mist blower Applications of Dilute Insecticide Solutions for Control of~Choristoneura fumiferana~on White Spruce in Quebec, 1972: In formation Report CC-X-21. (Unpublished study received May 6, 1976 under 352-342; prepared by Canada, Forestry Service, Chemical Control Research Institute, submitted by E.I. du Pont de Nemours & Co., Wilmington, Del.; CDL:224073-F)
- 9181 Atkins, E.L., Jr.; Anderson, L.D.; Greywood, E.A. (1969) Effect of Pesticides on Apiculture: Project No. 1499. (Unpublished study received Jul 29, 1976 under 352-342; prepared by Univ. of California--Riverside, Dept. of Entomology, submitted by E.I. du Pont de Nemours & Co., Wilmington, Del.; CDL:224800-C)

- 9192 Stafford, E.M.; AliNiazee, M.T. (1970) Chemical Control of Omnivorous Leafroller and Grapes. (Unpublished study received Apr 24, 1975 under 352-342; submitted by E.I. du Pont de Nemours & Co., Wilmington, Del.; CDL:220780-H)
- 9198 Stafford, E.M. (1970) Sprays to Control the Grape Leaf Folder 1970. (Unpublished study received Apr 24, 1975 under 352-342; prepared by Univ. of California--Davis, submitted by E.I. du Pont de Nemours & Co., Wilmington, Del.; CDL:220780-O)
- 9199 Simpson, C.M. (1970) Evaluation of Pesticides for Berry Moth Control. (Unpublished study received Apr 24, 1975 under 352-342; prepared by Canada, Dept. of Agriculture, Research Station, submitted by E.I. du Pont de Nemours & Co., Wilmington, Del.; CDL:220780-U)
- 9222 Thomas, W.O. (1971) The Effects of Foliar Applied Fungicide-Insecticide Treatment on Disease and Insect Control on Staked Tomatoes. (Unpublished study received Dec 20, 1974 under 352-342; prepared by Mississippi State Univ. of Applied Arts and Sciences, Truck Crops Experiment Station, submitted by E.I. du Pont de Nemours & Co., Wilmington, Del.; CDL:028447-K)
- 9250 Morishita, F.S. (1970) Phytotoxicity. (Unpublished study received Aug 25, 1976 under 352-342; prepared by Univ. of California-- Riverside, submitted by E.I. du Pont de Nemours & Co., Wilmington, Del.; CDL:227322-P)
- 11289 Lange, W.H. (1968) Artichoke Plot No. 2. (Unpublished study including letter dated Apr 9, 1969 from M.D. Christensen to L.T. Hargett, received Dec 17, 1973 under 4F1450; prepared by Univ. of California--Davis, submitted by Ciba-Geigy Corp., Greensboro, N.C.; CDL:093862-G)
- 11290 Lange, W.H., Jr.; Kishiyama, J.; Fisher, G. (1970) Evaluation of Seven Insecticides Tested on the Artichoke Plume Moth, *Platyptilia carduidactyla*, and the Chrysanthemum Leafminer, *Phytomyza atricornis*, on Artichokes. (Unpublished study including letter dated Mar 13, 1970 from W.H. Lange to M. Dale Christensen, received Dec 17, 1973 under 4F1450; prepared by Univ. of California--Davis, Agricultural Experiment Station, Dept. of Entomology, submitted by Ciba-Geigy Corp., Greensboro, N.C.; CDL:093862-H)
- 11356 Dibble, J.E. (1971) Almonds: Peach Twig Borer Control. (Unpublished study received May 24, 1976 under 6F1782; prepared by Univ. of California, San Joaquin Valley Agricultural Research & Extension Center, submitted by Ciba-Geigy Corp., Greensboro, N.C.; CDL:096527-B)
- 11390 Schulz, J.T.; Kamali, K.; Ehart, R. (1971) Biology, Ecology and Control of Sunflower Insects. (Unpublished study received Jun 4, 1974 under 100-501; prepared by North Dakota State Univ., Agricultural Experiment

Station, submitted by Ciba-Geigy Corp., Greensboro, N.C.;
CDL:094016-G)

- 11634 Summers, F.M.; Rice, R.E. (1970) Sprays for Almond Mites on Almonds. (Unpublished study received Jun 26, 1974 under 100-501; prepared by Univ. of California--Davis, Agricultural Experiment Station in cooperation with L.D. Properties, Inc., submitted by Ciba-Geigy Corp., Greensboro, N.C.; CDL:094034-H)
- 11863 Dominick, C.B. (1965) Insect Control in Tobacco. (Unpublished study received Dec 28, 1971 under 100-501; prepared by Virginia Polytechnic Institute and State Univ., Bright Tobacco Research Station, submitted by Ciba-Geigy Corp., Greensboro, N.C.; CDL:000539-B)
- 11864 Dominick, C.B. (1966) Insect Control in Tobacco. (Unpublished study received Dec 28, 1971 under 100-501; prepared by Virginia Polytechnic Institute and State Univ., Bright Tobacco Research Station, submitted by Ciba-Geigy Corp., Greensboro, N.C.; CDL:000539-C)
- 11865 Dominick, C.B. (1967) Insect Control in Tobacco. (Unpublished study received Dec 28, 1971 under 100-501; prepared by Virginia Polytechnic Institute and State Univ., Bright Tobacco Research Station, submitted by Ciba-Geigy Corp., Greensboro, N.C.; CDL:000539-D)
- 11869 Girardeau, J.H. (1967) Annual Progress Report on Tobacco Insects and Apiculture. (Unpublished study received Dec 28, 1971 under 100-501; prepared by Georgia Coastal Plain Experiment Station, Entomology Dept., submitted by Ciba-Geigy Corp., Greensboro, N.C.; CDL:000539-H)
- 11872 Mistic, W.J., Jr. (1965) Summary of Research on Control of Tobacco Insects. (Unpublished study received Dec 28, 1971 under 100-501; prepared by North Carolina State Univ., Agricultural Experiment Station, Dept. of Entomology, submitted by Ciba-Geigy Corp., Greensboro, N.C.; CDL:000539-K)
- 11878 Moseley, J.M. (1966) Flue-Cured Tobacco Insecticide Tests--1966 Crop. (Unpublished study including letter dated May 31, 1967 from J.M. Moseley to C.B. Dominick, received Dec 28, 1971 under 100-501; prepared by American Tobacco Co., submitted by Ciba-Geigy Corp., Greensboro, N.C.; CDL:000539-R)
- 11887 Dominick, C.B. (1966) The Effectiveness of Insecticides Applied to the Foliage in Controlling Second Broad Flea Beetles on Flue-Cured Tobacco, Chatham, Virginia, 1966. (Unpublished study received Mar 30, 1973 under 100-501; submitted by Ciba-Geigy Corp., Greensboro, N.C.; CDL:000540-E)
- 12458 Chapman, R.K. (1965) Potato Leafhopper Control Using a Foliar Spray on Potatoes. (Unpublished study received Nov 10, 1972 under 3F1323;

submitted by Ciba-Geigy Corp., Greensboro, N.C.; CDL:093552-AR)

- 12460 Libby, J.L.; Hartberg, T.J. (1970) 1970 Vegetable Crops Entomology Research Report. (Unpublished study received Nov 10, 1972 under 3F1323; prepared by Univ. of Wisconsin, Dept. of Entomology, submitted by Ciba-Geigy Corp., Greensboro, N.C.; CDL:093552-AT)
- 12462 Kouskolekas, C.A.; Harper, J.D. (1970) Vegetable Insects. (Unpublished study received Nov 10, 1972 under 3F1323; submitted by Ciba-Geigy Corp., Greensboro, N.C.; CDL:093552-AW)
- 12465 Hale, R.; Shorey, H.H. (1969) Control of Tomato Fruitworm and Tomato Pinworm on Tomatoes. (Unpublished study received Nov 10, 1972 under 3F1323; submitted by Ciba-Geigy Corp., Greensboro, N.C.; CDL:093552-AZ)
- 12478 Wolfenbarger, D.O. (1969) Report of Progress: Chemical Control of Insects and Other Pests Attacking Vegetable Crops: Number of Project: 1184. (Unpublished study received Nov 10, 1972 under 3F1323; prepared by Univ. of Florida, Sub-Tropical Experiment Station, submitted by Ciba-Geigy Corp., Greensboro, N.C.; CDL:093552-BM)
- 12483 Walker, J.R. (1965) Tomato Insecticide Test--1965. (Unpublished study received Nov 10, 1972 under 3F1323; prepared by Louisiana State Univ. and Agricultural and Mechanical College, Dept. of Entomology, Agricultural Center, submitted by Ciba-Geigy Corp., Greensboro, N.C.; CDL:093552-BR)
- 12490 Stier, E.F. (1965) Flavor Evaluation Report on Tomatoes. (Unpublished study received Nov 10, 1972 under 3F1323; prepared by Rutgers Univ., submitted by Ciba-Geigy Corp., Greensboro, N.C.; CDL:093552-BY)
- 12491 Reed, J.P. (1965) Tomato Insect Control--1965. (Unpublished study received Nov 10, 1972 under 3F1323; prepared by Rutgers Univ., submitted by Ciba-Geigy Corp., Greensboro, N.C.; CDL:093552-BZ)
- 12494 Reed, J. (1964) Tomato Plots--1964. (Unpublished study received Nov 10, 1972 under 3F1323; prepared by Rutgers Univ., submitted by Ciba-Geigy Corp., Greensboro, N.C.; CDL:093552-CH)
- 12608 Bowen, W.R. (1972) Egyptian Alfalfa Weevil Control in Southern California. (Unpublished study received May 29, 1975 under 100-501; prepared by Univ. of California--Riverside, submitted by Ciba-Geigy Corp., Greensboro, N.C.; CDL:115271-D)
- 12628 Nielsen, D.G. (1973) Chemical Control of Pine Tortoise Scale, *Toumeyella numismaticum*. (Unpublished study received May 29, 1975 under 100-501; submitted by Ciba-Geigy Corp., Greensboro, N.C.; CDL:115271-AM)

- 13934 Adlerz, W.C. (1964) Chemical Control of Insects on Watermelon. (Unpublished study including letter dated Oct 23, 1964 from L.G. Smith to Manager, New York, Agricultural Chemicals Div., Sales Development, received Jan 28, 1966 under 201-142; prepared by Watermelon and Grape Investigations Laboratory, submitted by Shell Chemical Co., Washington, D.C.; CDL:000833-AX)Page 19 10/23/02 11:44:17
- 14395 Stier, E.F. (1965) Flavor Evaluation Report on Tomatoes. (Unpublished study received Nov 10, 1972 under 3F1323; submitted by Ciba-Geigy Corp., Greensboro, N.C.; CDL:093552-CG)
- 14399 Lancaster, J.L., Jr. (1969) Turkey Chigger Control: Small Plot Tests. (Unpublished study received Oct 28, 1971 under 100-EX-29; prepared by Univ. of Arkansas, Dept. of Entomology, submitted by Ciba-Geigy Corp., Greensboro, N.C.; CDL:122602-E)
- 14842 Lancaster, J.L. (1971) Product Performance Report. (Unpublished study received Aug 7, 1972 under 239-2406; prepared by Univ. of Arkansas, Dept. of Entomology, submitted by Chevron Chemical Co., Richmond, Calif.; CDL:001569-H)
- 14949 Sleesman, J.P. (1972) Vegetable Insect Control Experiments. Wooster: Ohio Agricultural Research and Development Center, Dept. of Entomology. (Ent. misc. publication 73-1; report no. 36258; pp. 1-6,11-17 only; also~In~unpublished submission received Jul 24, 1973 under 4F1424; submitted by Mobay Chemical Corp., Agricultural Div., Kansas City, Mo.; CDL:094861-I)
- 14962 Henning, R.C.; Hale, R.; Bowen, B.; et al. (1971) Use of Orthene 75 S on Various Crops|. (Unpublished study received Feb 23, 1972 under 2G1248; prepared in cooperation with Univ. of California--Riverside, Virginia Truck and Ornamentals Research Station and New York State Agricultural Experiment Station, submitted by Chevron Chemical Co., Richmond, Calif.; CDL:095074-P)
- 14965 Sakamoto, S.S.; Moherek, E.A.; Witherspoon, B., Jr.; et al. (1971) Orthene 75 S: Tomatoes/VF-99. (Unpublished study received Feb 23, 1972 under 2G1248; prepared in cooperation with Auburn Univ., Entomology Dept. and Virginia Truck and Ornamentals Research Station, submitted by Chevron Chemical Co., Richmond, Calif.; CDL:095074-S)
- 15009 Sakamoto, S.S.; Thompson, J.P.; McCalley, N.; et al. (1972) Orthene 75 S: Cauliflower. (Unpublished study received Mar 27, 1973 under 3F1375; prepared in cooperation with Washington State Univ., Western Washington Research and Extension Center and Cornell Univ., Long Island Vegetable Research Farm, Dept. of Entomology, submitted by Chevron Chemical Co., Richmond, Calif.;CDL:093673-L)
- 16023 Jonsson, B.; Apple, J.W. (1971) 1971 Annual Report: Control of Larvae in

- Pea Fields: Project 154. (Unpublished study received Jun 29, 1976 under 201-347; prepared by Univ. of Wisconsin, submitted by Shell Chemical Co., Washington, D.C.; CDL:232410-AG)
- 16028 Houser, E.C. (1972) Evaluation of Insecticidal Materials for the Control of Insects in Corn and Sorghum in Southeastern Missouri. (Unpublished study received Jun 29, 1976 under 201-347; submitted by Shell Chemical Co., Washington, D.C.; CDL:232410-AL)
- 16036 Stafford, E.M.; AliNiasee, M.T. (1970) Chemical Control of Omnivorous Leafroller on Grapes. (Unpublished study received Jun 29, 1976 under 201-347; submitted by Shell Chemical Co., Washington, D.C.; CDL:232411-F):1
- 16043 Simpson, C.M. (1968) Grape Berry Moth Control. (Unpublished study received Jun 29, 1976 under 201-347; prepared by Canada, Dept. of Agriculture, Research Station, submitted by Shell Chemical Co., Washington, D.C.; CDL:232411-N)
- 19997 Green, G. (1970) Fall Armyworm, ~Spodoptera frugiperda~ Control in Pasture Grass, Quincy, Florida, 1970. (Unpublished study received Aug 1, 1978 under 352-342; prepared by Univ. of Florida, Agricultural Experiment Station, submitted by E.I. du Pont de Nemours & Co., Wilmington, Del.; CDL:234573-D)
- 21710 Knapp, F.W. (1968) Progress Report to Chemagro Corporation: Dust Bag Evaluation Tests: Report No. 22211. (Unpublished study received Mar 20, 1969 under 3125-209; prepared by Univ. of Kentucky, Agricultural Experiment Station, submitted by Mobay Chemical Corp., Kansas City, Mo.; CDL:007148-I)
- 21725 Stockdale, H.J. (1970) Livestock--Insect Control Studies: Report No. 30226. (Unpublished study received Jul 19, 1971 under 3125-209; prepared by Iowa State Univ., Cooperative Extension Service, submitted by Mobay Chemical Co., Kansas City, Mo.; CDL:007149-H)
- 24127 Baker, N.F.; Dougherty, R.B. (1979) Temephos: Efficacy of the 40.7% Temephos Flea Collar against Experimental Flea (Ctenocephalides felis) Infestation on Dogs Weighing Greater Than 9 Kg over an Experimental Period of Nine Months: Experiment C-77-5. (Unpublished study received Aug 29, 1979 under 241-251; prepared in cooperation with Univ. of California--Davis, Agricultural Experiment Station, Dept. of Veterinary Microbiology, submitted by American Cyanamid Co., Princeton, N.J.; CDL:240881-A)
- 25669 Mount, G.A. (1979) Report: Control of Nymphs and Adults of the Lone Star Tick in Oklahoma. (Unpublished study received Dec 19, 1979 under 464-343; prepared by U.S. Dept. of Agriculture, Lone Star Tick Laboratory, submitted by Dow Chemical U.S.A., Midland, Mich.;

CDL:241592-A)

- 25899 Pearson, R.G.; Loomis, E.C.; O'Rourke, M.J.; et al. (1978) Efficacy of Antroban as a Pesticide for Animals. (Unpublished study received Feb 20, 1980 under 59-194; prepared in cooperation with Univ. of California--Davis and others, submitted by Burroughs Wellcome Co., Research Triangle Park, N.C.; CDL:099262-A)
- 26011 Beck, J.D. (1966) 1966 Experimental Forest Tent Caterpillar Control Project: Report No. 19073. (Unpublished study including letter dated Sep 27, 1966 from J.D. Beck to Michell Wrich, received Oct 30, 1970 under 3125-210; prepared by Boise Cascade Papers, submitted by Mobay Chemical Corp., Kansas City, Mo.; CDL:007151-B)
- 26013 Morris, R.C.; Abrahamson, L.P. (1969) Establishment and Final Report: Effects of Aerially Applied Ultra Low Volume Insecticides on Forest Tent Caterpillars in Coastal Gum Forests: FS-SO-2202.5313; Report No. 25954. (Unpublished study received Oct 30, 1970 under 3125-210; prepared by U.S. Forest Service, Southern Forest Experiment Station, Southern Hardwoods Laboratory, submitted by Mobay Chemical Corp., Kansas City, Mo.; CDL:007151-D)
- 26014 Morris, R.C.; Abrahamson, L.P. (1970) Final Report: Control of Forest Defoliators without Damage to Wildlife in Hardwood Bottomlands. (Effects of Aerially Sprayed Insecticides on the Forest Tent Caterpillar in Swamp Tupelo): FS-SO-2202.5314; Report No. 28070. (Unpublished study received Oct 30, 1970 under 3125-210; prepared by U.S. Forest Service, Hardwood Insect Research Project, submitted by Mobay Chemical Corp., Kansas City, Mo.; CDL:007151-E)
- 26015 Ciesla, W.M.; Drake, L.E.; Wilmore, D.H. (1970) Aerial Photographic Evaluation of the 1970 Forest Tent Caterpillar Spray Test in Southwestern Alabama: Report No. 28070. (Unpublished study received Oct 30, 1970 under 3125-210; prepared by U.S. Forest Service, Southeastern Area Div. of Forest Pest Control, submitted by Mobay Chemical Corp., Kansas City, Mo.; CDL:007151-F)
- 28930 D'Ver, A.S.; Derstine, W.; Ehrhart, W.; et al. (1980) Efficacy Testing of an Experimental Flea and Tick Collar for Dogs: White Eagle Study No. 105. (Unpublished study received Feb 26, 1980 under 2596-83; prepared in cooperation with White Eagle Laboratories, Inc., submitted by Hartz Mountain Corp., Harrison, N.J.; CDL:242072-A)
- 29364 Shell Chemical Company (19??) Determination of the Impurities in Technical SD 8447. (Unpublished study received 1966 under unknown admin. no.; CDL:126307-A)
- 29365 Shell Development Company (1966) Assay of Technical SD-8447: Tentative Infrared Spectrophotometric Method. Method MMS-74/66

- dated Jan 26, 1966. (Unpublished study received 1966 under unknown admin. no.; CDL:126307-B)
- 30088 Price, M.A.; Kunz, S.E.; Everett, R.E. (1972) Chig-Out^{1/4}(TM) μ (Supracide^{1/4}(R) μ , GS-13005) 1970 Test. (Unpublished study including published data, received Feb 26, 1973 under 100-EX-29; prepared in cooperation with Texas A & M Univ., Dept. of Entomology, submitted by Ciba-Geigy Corp., Greensboro, N.C.; CDL:122603-E)
- 30091 Rider, J.A.; Moeller, H.C.; Puletti, E.J.; et al. (1968) Studies on the anticholinesterase effects of Methyl parathion, Guthion, Dichlorvos, and Gardona in human subjects. *Federation Proceedings* 27(2):597. (Abstract; also in unpublished submission received May 3, 1971 under 1F1166; submitted by Chemagro Corp. Kansas City, Mo.; CDL:090961-E)
- 30094 Rider, J.A.; Puletti, E.J. (1969) Studies on the anticholinesterase effects of Gardona, Methyl parathion, and Guthion in human subjects. *Federation Proceedings* 28(2):479. (Abstract; also in unpublished submission received May 3, 1971 under 1F1166; submitted by Chemagro Corp., Kansas City, Mo.; CDL:090961-N)
- 31269 Forsythe, H.Y., Jr. (1971) Insect and Mite Control Experiments on Apples and Blueberries in Maine. (Unpublished study received May 25, 1973 under 100-426; prepared by Univ. of Maine, Dept. of Entomology, submitted by Ciba-Geigy Corp., Greensboro, N.C., CDL:000194-B)
- 31270 Bonlanger, L. (1966) Control of Blueberry Thrips. (Unpublished study received May 25, 1973 under 100-426; prepared by Univ. of Maine, submitted by Ciba-Geigy Corp., Greensboro, N.C.; CDL:000194-C)
- 31295 Benigni, R.; Bignami, M.; Camoni, I.; et al. (1979) A new~in vitro~method for testing plant metabolism in mutagenicity studies. *Journal of Toxicology and Environmental Health* 5(?):809-819. (Also~In~unpublished submission received Apr 23, 1980 under 400-41; submitted by Uniroyal Chemical, Bethany, Conn.; CDL:242307-A)
- 32133 Braithwaite, G. (1979) (Ectiban Insecticide: Efficacy in Livestock Premises). (Unpublished study received May 1, 1980 under NM 80/8; submitted by state of New Mexico for ICI Americas, Inc., Wilmington, Del.; CDL:242377-A)
- 32660 Vidyarthi, A.D.; Sheehan, T.D.; Blazquez, C.H.; et al. (1969) Efficacy Study on Tomato Plants. (Unpublished study received Apr 1, 1970 under 72-454; prepared in cooperation with Virginia Truck Experiment Station, submitted by Miller Chemical and Fertilizer Corp., Hanover, Pa.; CDL:000160-A)
- 32730 Strong, R.G. (1966) Susceptibility of Stored Product Insects to

- Insecticides: Report No. 20691. (Unpublished study received Nov 14, 1967 under 52-197; prepared by Univ. of California--Riverside, Dept. of Entomology, submitted by West Chemical Products, Inc., Lynbrook, N.Y.; CDL:000084-A)
- 32831 Paullus, J.H. (1966) Transmittal of European Corn Borer and Corn Earworm Control Data; Transmittal of Cabbage Insect Control Data; Transmittal of Pea Aphid Control Data. (Unpublished study received Mar 1, 1966 under 116-30; submitted by Salsbury Laboratories, Charles City, Iowa; CDL:000597-A)
- 32832 Thornburg, W.W. (1966) Summary of Residue Analysis Data for SD-8447 on Sweet Corn. (Unpublished study received Mar 1, 1966 under 116-30; submitted by Salsbury Laboratories, Charles City, Iowa; CDL:000597-B)
- 33446 Dean, R.W. (1966) Summary: Delnav Apple Maggot Tests. (Unpublished study received May 31, 1966 under 239-1946; prepared in cooperation with Cornell Univ., New York State Agricultural Experiment Station, Hudson Valley Laboratory, submitted by Chevron Chemical Co., Richmond, Calif.; CDL:001404-A)
- 33491 Sanford, J.W.; Hensley, S.D.; Newsom, L.D.; et al. (1966) Performance Data. (Unpublished study received Mar 25, 1966 under 201-157; prepared in cooperation with U.S. Agricultural Research Service, Entomology Research Div., Grain and Forage Insects Research Branch and others, submitted by Shell Chemical Co., Washington, D.C.; CDL:000864-A)
- 33871 Butler, J.F.; Loomis, E.C.; Seawright, J.A.; et al. (1971) Efficacy of Insecticides on Cattle Parasites. (Unpublished study including published data received Apr 18, 1972 under 241-33; prepared by Univ. of Florida, Institute of Food and Agricultural Sciences, Dept. of Entomology and Nematology and others, submitted by American Cyanamid Co., Princeton, N.J.; CDL:001658-A)
- 34288 Sanford, J.W.; Hensley, S.D. (1965) Pest Control in Sugarcane with SD-9129. (Unpublished study received Feb 4, 1966 under 201-156; prepared by U.S. Agricultural Research Service, Entomology Research Div., Grain and Forage Insects Research Branch and Louisiana State Univ., Dept. of Entomology, submitted by Shell Chemical Co., Washington, D.C.; CDL:000856-A)
- 34312 Boulanger, L.W.; Forsythe, H.Y. (1969) Efficacy Data for Ethion on Blueberries. (Unpublished study received Nov 23, 1970 under 279-1255; prepared in cooperation with Univ. of Maine, Dept. of Entomology, submitted by FMC Corp., Philadelphia, Pa.; CDL:002335-A)
- 34624 Livingston, J.M.; Yearian, W.C.; Young, S.Y., III (1972) Evaluation of new insecticides for control of the loblolly pine saw-fly. Arkansas Farm Research XXI(3):4. (Also~In~unpublished submission received May 6,

- 1976 under 352-342; submitted by E.I. du Pont de Nemours & Co.,
Wilmington, Del.; CDL:224073-X)
- 36614 Shell Chemical Company (1972) Summary: Gardona. (Unpublished study received Feb 6, 1973 under 2F1281; CDL:092176-A)
- 37490 Young, R., Jr.; Schmidtman, E.T. (1977) File Trial Efficacy of SD8447 Horse Oral Larvicide and SD 4294 Pyrethrin/Repellent Horse Spray: Project Nos. 61751.00 & 61754.00. (Unpublished study received Jun 27, 1980 under 0H5269; prepared by Cornell Univ., Dept. of Entomology, submitted by Diamond Shamrock Agricultural Chemicals, Cleveland, Ohio; CDL:242705-B)
- 37491 Diamond Shamrock Agricultural Chemicals (19??) Safety of the Food Additive. (Unpublished study received Jun 27, 1980 under 0H5269; CDL:242780-C)
- 37492 Young, R.; Sharp, M.L. (1972) Tolerance of Horses to Grain Containing Rabon^{1/4}(R) μ Insecticide: Report No. 70-61754.00. (Unpublished study received Jun 27, 1980 under 0H5269; prepared by Shell Development Co., submitted by Diamond Shamrock Agricultural Chemicals, Cleveland, Ohio; CDL:242780-D)
- 37493 DeKay, D.E.; Brown, L.J.; Durnbaugh, G.B.; et al. (1974) Effects of Stirofos (SD 8447) on Growing Swine: TIR-75-013-74. (Unpublished study received Jun 27, 1980 under 0H5269; prepared by Shell Chemical Co., submitted by Diamond Shamrock Agricultural Chemicals, Cleveland, Ohio; CDL:242780-E)
- 37494 Sharp, J.E.; Young, R., Jr.; Brown, L.J.; et al. (1971) Effect of Feeding Rabon^{1/4}(R) μ Insecticide to Pigs for 31 Days: TIR-70-054-71. (Unpublished study received Jun 27, 1980 under 0H5269; prepared by Shell Chemical Co., submitted by Diamond Shamrock Agricultural Chemicals, Cleveland, Ohio; CDL:242780-F)
- 37850 Simkover, H.G.; Min, P.F.; Hall, D.H. (1972) Additional Performance Data--Gardona^{1/4}(R) μ Insecticide/Alfalfa. (Unpublished study received Feb 6, 1973 under 2F1281; prepared in cooperation with Chemonics Industries and Progressive Farming, Inc., submitted by Shell Chemical Co., Washington, D.C.; CDL:092176-B)
- 38457 Sharp, J.E.; Young, R.; Olson, W.M.; et al. (1975) The Larvicidal Efficacy and Degradation Rate of Rabon in Manure from Horses Fed Rabon^{1/4}(R) μ Oral Larvicide: Project No. 61754.00. (Unpublished study received Jun 27, 1980 under 0H5269; submitted by Diamond Shamrock Agricultural Chemicals, Cleveland, Ohio; CDL:242780-A)
- 38458 Schultz, D.R.; Rawn, D.T.; DeKay, D.E. (1973) Residues of SD 8447 in Biopsy Fat Samples from Pigs Fed 400 and 800 PPM Stirofos in the

Ration: TIR-26-005-73. (Unpublished study received Jun 27, 1980 under OH5269; prepared by Shell Development Co., submitted by Diamond Shamrock Agricultural Chemicals, Cleveland, Ohio; CDL:242780-G)

- 42451 Levenstein, I. (1980) Acute Dermal in Rabbits: Assay No. 04788. (Unpublished study received Aug 29, 1980 under 2596-89; prepared by Hartz Mountain Corp., Harrison, N.J.; CDL:243158-A)
- 42469 Perlberg, W. (1980) Evaluation of a Flea and Tick Spray for Cats. (Unpublished study received Aug 21, 1980 under 2596-87; prepared in cooperation with Stanford Research Institute, submitted by Hartz Mountain Corp., Harrison, N.J.; CDL:243115-A)
- 42716 Shell Development Company (1966) Assay of Technical SD 8447: Tentative Infrared Spectrophotometric Method. Method MMS-74/66 dated Jan 26, 1966. (Unpublished study received Jul 21, 1966 under unknown admin. no.; CDL:107957-A)
- 43482 Shell Chemical Company (19??) Toxicology. (Unpublished study received Feb 25, 1966 under unknown admin. no.; CDL:107943-A)
- 43483 Shellenberger, T.E. (1966) Subacute Toxicity Studies of Shell Compound SD 8447: Report No. 35. (Unpublished study received Feb 25, 1966 under unknown admin. no.; prepared by Stanford Research Institute, submitted by Shell Chemical Co., Washington, D.C.; CDL:107943-F)
- 43484 U.S. Agricultural Research Service (19??) Summary of Toxicologic Studies of Shell Compound 8447 in Cattle and Sheep. (Animal Disease and Parasite Research Div., Toxicological Investigations Laboratory, unpublished study; CDL:107943-G)
- 43485 Shell Chemical Company (1964) Stability of SD 8447 in Rat Chow. (Unpublished study received Feb 25, 1966 under unknown admin. no.; CDL:107943-H)
- 43486 Shell Chemical Company (19??) Compound SD 8447 Reproduction Study. (Unpublished study received Feb 25, 1966 under unknown admin. no.; CDL:107943-I)
- 43487 Stevenson, D.E.; Ferrigan, L.W. (1965) The Sub-acute Toxicity of the Halophenyl vinyl phosphate Insecticide SD 8447 to Rats: Report No. R(T)-1-65. (Unpublished study received Feb 25, 1966 under unknown admin. no.; prepared by Shell Research, Ltd., England, submitted by Shell Chemical Co., Washington, D.C.; CDL:107943-K)
- 43488 Walker, A.I.T.; Hunter, C. (1965) The Sub-acute Oral Toxicity of the Halophenyl vinyl phosphate Insecticide SE 8447 to Dogs: Report No. R(T)-6-65. (Unpublished study received Feb 25, 1966 under unknown

admin. no.; prepared by Shell Research, Ltd., England, submitted by Shell Chemical Co., Washington, D.C.; CDL:107943-L)

- 43489 Brown, V.K.; Ferrigan, L.W.; Hunter, C.G. (1964) Toxicity Data for SD 8447 on Fowl|. (Unpublished study received Feb 25, 1966 under unknown admin. no.; prepared by Shell Research, Ltd., England, submitted by Shell Chemical Co., Washington, D.C.; CDL:107943-N)
- 43490 Whetstone, R.R.; Phillips, D.D.; Sun, Y.P.; et al. (1965) 2-Chloro-1-(2,4,5-trichlorophenyl)vinyl dimethyl phosphate: A New Safe Insecticide: Paper MP-57. (Unpublished study received Feb 25, 1966 under unknown admin. no.; prepared in cooperation with Stanford Research Institute, submitted by Shell Chemical Co., Washington, D.C.; CDL:107943-O)
- 43491 Shell Chemical Company (19??) Cattle Feeding Studies with SD 8447. (Unpublished study received Feb 25, 1966 under unknown admin. no.; CDL:107943-P)
- 44286 Levenstein, I. (1980) Toxicity Test on Rats|: Assay No. 04791. (Unpublished study received Aug 29, 1980 under 2596-89; prepared by Leberco Laboratories, submitted by Hartz Mountain Corp., Harrison, N.J.; CDL:243160-A)
- 44287 Levenstein, I. (1980) To Determine If the Test Material Produces Any Irritation When Instilled into Rabbits' Eyes: Assay No. 04792. (Unpublished study received Aug 29, 1980 under 2596-89; prepared by Leberco Laboratories, submitted by Hartz Mountain Corp., Harrison, N.J.; CDL:243159-A)
- 44288 Levenstein, I. (1980) To Determine the Degree of Irritation the Material May Produce When Applied to the Clipped Intact and Abraded Skin of Rabbits, Employing the Reference Method Described: Assay No. 04794. (Unpublished study received Aug 29, 1980 under 2596-89; prepared by Leberco Laboratories, submitted by Hartz Mountain Corp., Harrison, N.J.; CDL:243161-A)
- 44289 Levenstein, I. (1980) To Determine the Oral LD₅₀ in Fasted Rats of the Test Material As Submitted: Assay No. 04787. (Unpublished study received Aug 29, 1980 under 2596-89; prepared by Leberco Laboratories, submitted by Hartz Mountain Corp., Harrison, N.J.; CDL:243162-A)
- 44290 Perlberg, W. (1980) Evaluation of a Flea and Tick Spray for Dogs. (Unpublished study received Aug 29, 1980 under 2596-89; submitted by Hartz Mountain Corp., Harrison, N.J.; CDL:243163-A)
- 45058 Rader, W.E.; Love, J.W.; Chai, E.Y. (1978) Impact of Commercial Shell Pesticides on Microorganisms in the Soil: Part III--Effect of Compounds on the Populations of Microorganisms and the O₂/CO₂ Exchange

- in Treated Soil: TIR-22-112-77, Part III. (Unpublished study received Aug 21, 1980 under 201-401; submitted by Shell Chemical Co., Washington, D.C.; CDL:243109-D)
- 45060 Rader, W.E. (1972?) The Effects of Shell Pesticides on Protein Decomposition: TIR-51-108-79. (Unpublished study received Aug 21, 1980 under 201-401; prepared in cooperation with A & L Mid West Agricultural Laboratories, Inc., submitted by Shell Chemical Co., Washington, D.C.; CDL:243109-F)
- 45061 Rader, W.E. (1978) The Effect of Shell Pesticides on Soil Phosphatase Activity: TIR-51-110-79. (Unpublished study received Aug 21, 1980 under 201-401; submitted by Shell Chemical Co., Washington, D.C.; CDL:243109-G)
- 45062 Rader, W.E.; Blake, I.G. (1979?) The Effects of Shell Pesticides on Cellulose Decomposition: TIR-51-111-79. (Unpublished study received Aug 21, 1980 under 201-401; submitted by Shell Chemical Co., Washington, D.C.; CDL:243109-H)
- 45707 Levenstein, I. (1980) To Determine the Degree of Irritation the Material May Produce When Applied to the Clipped Intact and Abraded Skin of Rabbits, Employing the Reference Method Descibed: Assay No. 04795. (Unpublished study received Aug 21,1980 under 2596-88; prepared by Leberco Laboratories, submitted by Hartz Mountain Corp., Harrison, N.J.; CDL:243124-A)
- 45708 Levenstein, I. (1980) To Determine If the Test Material Produce Any Irritation When Instilled into Rabbits' Eyes: Assay No. 04793. (Unpublished study received Aug 21, 1980 under 2596-88; prepared by Leberco Laboratories, submitted by Hartz Mountain Corp., Harrison, N.J.; CDL;243123-A)
- 45709 Levenstein, I. (1980) Toxicity to Rats: Assay No. 04790. (Unpublished study received Aug 21, 1980 under 2596-88; prepared by Leberco Laboratories, submitted by Hartz Mountain Corp., Harrison, N.J.; CDL:243122-A)
- 45710 Levenstein, I. (1980) Acute Dermal in Rabbits CFR 16:1500.40 (a)(b)(c): Fourteen Day Observation: 2 Ml. per Kilo Rabbit: Assay No. 04789. (Unpublished study received Aug 21, 1980 under 2596-88; prepared by Leberco Laboratories, submitted by Hartz Mountain Corp., Harrison, N.J.; CDL:243122-B)
- 45711 Levenstein, I. (1980) Acute Dermal in Rabbits CFR 16:1500.40 (a)(b)(c): Fourteen Day Observation: 2Ml. per Kilo Rabbit: Assay No. 04788. (Unpublished study received Aug 21, 1980 under 2596-87; prepared by Leberco Laboratories, submitted by Hartz Mountain Corp., Harrison, N.J.; CDL:243119-A)

- 45712 Levenstein, I. (1980) To Determine the Oral LD₅₀ in Fasted Rats of the Test Material As Submitted: Assay No. 04786. (Unpublished study received Aug 21, 1980 under 2596-88; prepared by Leberco Laboratories, submitted by Hartz Mountain Corp., Harrison, N.J.; CDL:243121-A)
- 46404 Shell Chemical Company (19??) SD 8447 Insecticide. (Unpublished study received on unknown date under unknown admin. no.; CDL:107964-A)
- 46778 ICI Americas, Ag. Chem. Div. (19??) Toxicity and Activity against Resistant Houseflies of Permethrin (Ectiban Insecticide) Compared with Other Commonly Recommended Housefly Control Products. (Unpublished study received May 5, 1980 under MO 80/8; CDL:242418-A)
- 46801 Levenstein, I. (1980) Toxicity Data--Rabbits: Assay No. 04789. (Unpublished study received Aug 29, 1980 under 2596-90; prepared by Leberco Laboratories, submitted by Hartz Mountain Corp., Harrison, N.J.; CDL:243282-C)
- 49323 Palmer, J.S.; McCarty, R.T. (1967) Preliminary Toxicological Data: Report No. 20824. (U.S. Agricultural Research Service, Animal Disease and Parasite Research Div., Toxicological Investigations Laboratory, unpublished study; CDL:226486-P)
- 50537 Perlberg, W. (1980) Evaluation of a Flea and Tick Spray for Cats. (Unpublished study received Aug 21, 1980 under 2596-88; prepared in cooperation with Stanford Research Institute, submitted by Hartz Mountain Corp., Harrison, N.J.; CDL:243125-A)
- 50598 Newell, G.W. (1962) Letter sent to R.R. Whetstone dated Feb 16, 1962 Approximate oral LD₅₀ values of various compounds in mice and rats: Report No. 80. (Unpublished study received Feb 25, 1966 under unknown admin. no.; prepared by Stanford Research Institute, submitted by Shell Chemical Co., Washington, D.C.; CDL:107943-B)
- 50599 Shellenberger, T.E. (1962) Letter sent to R.R. Whetstone dated May 2, 1962 Approximate oral LD₅₀ values of various compounds in mice and rats: Report No. 82. (Unpublished study received Feb 25, 1966 under unknown admin. no.; prepared by Stanford Research Institute, submitted by Shell Chemical Co., Washington, D.C.; CDL:107943-C)
- 50600 Shellenberger, T.E. (1965) Letter sent to Rene Blondeau dated Nov 8, 1965 Toxicity data for SD 8447 on various animals: Report No. 29. (Unpublished study received Feb 25, 1966 under unknown admin. no.; prepared by Stanford Research Institute, submitted by Shell Chemical Co., Washington, D.C.; CDL:107943-D)
- 50601 Shellenberger, T.E. (1965) Letter sent to E.F. Feichtmeir dated Jun 1,

- 1965 SD 8211 and SD 8447 as skin and eye irritants in rabbits: Report No. 26. (Unpublished study received Feb 25, 1966 under unknown admin. no.; prepared by Stanford Research Institute, submitted by Shell Chemical Co., Washington, D.C.; CDL:107943-E)
- 50602 Shellenberger, T.E.; Newell, G.W. (1962) Letter sent to R.R. Whetstone dated Oct 29, 1962 Toxicity and cholinesterase study of SD 8436 and SD 8447. (Unpublished study received Feb 25, 1966 under unknown admin. no.; prepared by Stanford Research Institute, submitted by Shell Chemical Co., Washington, D.C.; CDL:107943-J)
- 50603 Shellenberger, T.E. (1966) Letter sent to Rene Blondeau dated Feb 4, 1966 Summary of a potentiation study with SD 8447 and other cholinesterase-inhibiting chemicals: Letter Report No. 1. (Unpublished study received Feb 25, 1966 under unknown admin. no.; prepared by Stanford Research Institute, submitted by Shell Chemical Co., Washington, D.C.; CDL:107943-N)
- 50604 Shellenberger, T.E. (1965) Letter sent to Rene Blondeau dated Nov 9, 1965 Whole blood cholinesterase studies on rabbits. (Unpublished study received Nov 9, 1965 under unknown admin. no.; prepared by Stanford Research Institute, submitted by Shell Chemical Co., Washington, D.C.; CDL:107941-A)
- 50608 Shell Chemical Company (19??) Metabolic Studies in Animals with SD 8447. (Unpublished study received Feb 25, 1966 under unknown admin. no.; CDL:107963-A)
- 50609 Howell, D.E. (1966) Letter sent to Charles Moye dated Mar 24, 1966 Results of barn treatments with Shell 8447. (Unpublished study received Mar 28, 1966 under 1622-66; prepared by Oklahoma State Univ., Dept. of Entomology, submitted by Klix Chemical Co., South San Francisco, Calif.; CDL:107959-A)
- 51313 Shellenberger, T.E. (1966) Letter sent to Rene Blondeau dated Feb 7, 1966 (Summary of two-week subacute percutaneous toxicity study and cholinesterase evaluation of SD 8447): Letter Report No. 1. (Unpublished study received May 19, 1966 under unknown admin. no.; prepared by Stanford Research Institute, submitted by Shell Chemical Co., Washington, D.C.; CDL:107965-A)
- 53969 Perlberg, W. (1980) Laboratory Report: Evaluation of a Flea & Tick Collar for Cats. (Unpublished study received Aug 29, 1980 under 2596-83; prepared in cooperation with Kearley & Young Research, submitted by Hartz Mountain Corp., Harrison, N.J.; CDL:243174-A)
- 54374 ICI Americas, Incorporated (1979) Efficacy Study of Ambush^{1/4}(R)μ and Ectiban^{1/4}(R)μ|. (Compilation; unpublished study received Nov 3, 1980 under CO 80/19; submitted by Colorado, Dept. of Agriculture, Pesticide

- 56944 Mulla, M.S. (1964) Letter sent to Charles Moye dated Oct 20, 1964 Toxicity of various compounds to the mosquito fish~Gambusia~
~affinis~. (Unpublished study received Dec 15, 1964 under 201-157; prepared by Univ. of California--Riverside, Citrus Research Center and Agricultural Experiment Station, Dept. of Entomology, submitted by Shell Chemical Co., Washington, D.C.; CDL:100375-V)
- 57249 Shell Chemical Company (1973) Toxicology Section: Summary. Summary of studies 001048-B through 001048-K. (Unpublished study received Apr 9, 1973 under 201-345; CDL:001048-A)
- 57250 Jorgenson, T.A. (1971) Skin and Eye Irritancy Studies of Gardona Pet Collars in Dogs: SRI Project LSC 868-20; Report No. 4. Rev. (Unpublished study received Apr 9, 1973 under 201-345; prepared by Stanford Research Institute, submitted by Shell Chemical Co., Washington, D.C.; CDL:001048-B)
- 57251 Stearns, S.M.; Albert, J.R. (19??) Determination of the Effects in the Dog following a Forced Feeding of a 10% Stirofos Flea Collar: TLR-72-023-73. (Unpublished study received Apr 9, 1973 under 201-345; submitted by Shell Chemical Co., Washington, D.C.; CDL:001048-C)
- 57252 Olson, W.M.; Young, R., Jr. (19??) The Effects of Moisture and Rabon^{1/4}(R) μ Insecticide Pet Collars on the Skin Reaction of Dogs: TIR-70-007-73. (Unpublished study received Apr 9, 1973 under 201-345; submitted by Shell Chemical Co., Washington, D.C.; CDL:001048-D)
- 57253 Albert, J.R. (1972) Long-Term Repeat Exposure of Dogs to 10% Stirofos Flea Collars: TIR-72-012-73. (Unpublished study received Apr 9, 1973 under 201-345; submitted by Shell Chemical Co., Washington, D.C.; CDL:001048-E)
- 57254 Stearns, S.M.; Albert, J.R. (1972?) Drug Interaction Potential of Several Drugs and Treatments in Dogs Fitted with the 10% Stirofos Flea Collar: TIR-72-013-73. (Unpublished study received Apr 9, 1973 under 201-345; submitted by Shell Chemical Co., Washington, D.C.; CDL:001048-F)
- 57255 Albert, J.R. (1973) Evaluation of Liver Function in Dogs at the Termination of a Long-Term Repeat Exposure Study of Dogs to the 10% Stirofos Flea Collar: TIR-72-014-73. (Unpublished study including letter dated Jan 15, 1973 from V.R. Augst to James Albert, received Apr 9, 1973 under 201-345; prepared by Laboratory Research Enterprises, Inc., submitted by Shell ChemicalCo., Washington, D.C.; CDL:001048-G)
- 57256 Albert, J. (1972?) Evaluation of Kidney Function in Dogs at the

Termination of a Long-Term Exposure Study of Dogs to the 10% Stirofos Flea Collar: TIR-72-015-73. (Unpublished study including letter dated May 19, 1972 from V. Augst to Dr. Alberts received Apr 9, 1973 under 201-345; prepared by Laboratory Research Enterprises, Inc., submitted by Shell Chemical Co., Washington, D.C.; CDL:001048-H)

- 57257 Albert, J.R. (19??) Effect of Repeated Exposure of Cats (Including Persians) to the 10% Stirofos Flea Collar: TIR-72-016-73. (Unpublished study received Apr 9, 1973 under 201-345; submitted by Shell Chemical Co., Washington, D.C.; CDL:001048-I)
- 57258 Albert, J.R. (19??) Evaluation of the Potential for Interaction of the 10% Stirofos Flea Collar with an Ultrashort-Acting Barbiturate Anesthetic (Thiamylal Na, Surital) with and without Premedication with a Phenothiazine Tranquilizer (Acetylpromazine, Acepromazine): TIR-72-018-73. (Unpublished study received Apr 9, 1973 under 201-345; prepared by Shell Chemical Co., Washington, D.C.; CDL:001048-J)
- 57259 Albert, J.R. (1972) Effect of the 10% Stirofos Flea Collar on Reproductive Capacity of the Bitch Dog: TIR-72-022-73. (Unpublished study received Apr 9, 1973 under 201-345; submitted by Shell Chemical Co., Washington, D.C.; CDL:001048-K)
- 59608 Stockdale, H.J. (1970) Livestock-Insect Control Studies: Project No. 3480. (Unpublished study received Sep 8, 1971 under 410-48; prepared by Iowa State Univ., Cooperative Extension, submitted by Franklin Laboratories, Inc., Denver, Colo.; CDL:225072-A)
- 59736 Miller, R.W.; Gordon, C.H. (1972) Encapsulated Rabon for larval house fly control in cow manure. *Journal of Economic Entomology* 65(2):455-458. (Also~In~unpublished submission received Jan 22, 1975 under 11312-7; submitted by U.S. Dept. of Agriculture, Washington, D.C.; CDL:228392-C)
- 63589 U.S. Department of Health, Education, and Welfare (1978) Bioassay of Tetrachlorvinphos for Possible Carcinogenicity. HEW. (CAS no. 961-11-5; NCI-CG-TR-33; National Cancer Institute carcinogenesis technical report series no. 33; DHEW publication no. (NIH) 78-833; Public Health Service, National Cancer Institute, Div. of Cancer Cause and Prevention, Carcinogenesis Program, Carcinogen Bioassay and Program Resources Branch; published study; CDL:233821-A)
- 63606 Sommer, K.R. (1977) A Critique of: Bioassay of Tetrachlorvinphos for Possible Carcinogenicity (a Draft Report Issued for National Cancer Institute by Gulf South Research Institute). (Unpublished study received Apr 28, 1978 under unknown admin. no.; submitted by Shell Chemical Co., Washington, D.C.; CDL:233812-A)
- 63626 Piccirillo, V.J. (1978) 26-Week Progress Report: 104-Week Chronic

- Feeding Study in Mice: Project No. 776-118. (Unpublished study received Apr 28, 1978 under unknown admin. no.; prepared by Hazleton Laboratories America, Inc., submitted by Shell Chemical Co., Washington, D.C.; CDL:233819-A; 233820)
- 67142 Hartz Mountain Corporation (1975) Efficacy of Rabon 2 for Tick and Flea Collars. (Compilation; unpublished study received Mar 11, 1977 under 2596-62; CDL:230755-A)
- 67463 Shell Chemical Company (1973) Revised Data To Support the Use of Rabon as a Wipe-on or Spray Solution on Horses for Insect Control. (Unpublished study received May 14, 1973 under 201-339; CDL:001040-A)
- 68708 Shell Chemical Company (1969) Information in Support of Rabon for Controlling Pests. (Reports by various sources; unpublished study received Sep 13, 1972 under 201-336; CDL:001039-A)
- 68720 Stearns, S.M.; Albert, J.R. (1952?) Oral LD₅₀ Determination for Ravap^{1/4}(TM)_μ Insecticide in the Rat: TIR-72-083-72. (Unpublished study received Sep 13, 1972 under 201-336; submitted by Shell Chemical Co., Washington, D.C.; CDL:001039-B)
- 68721 Stearns, S.M.; Albert, J.R. (19??) Acute Dermal Toxicity of Ravap^{1/4}(TM)_μ Insecticide in the Rabbit: TIR-72-082-72. (Unpublished study received Sep 13, 1972 under 201-336; submitted by Shell Chemical Co., Washington, D.C.; CDL:001039-C)
- 69314 Farnam Companies, Incorporated (19??) Flea and Tick Pet Collars. (Unpublished study received Sep 15, 1978 under 270-EX-1; CDL:235685-B)
- 70260 Shell Chemical Company (1973) Performance Section: Summary: Rabon. (Compilation; unpublished study received Apr 9, 1973 under 201-345; CDL:001045-A)
- 70856 Sharp, M.L. (1971) Tolerance of Horses to Grain Containing Rabon^{1/4}(R)_μ Insecticide: Project No. 70-61754.00. (Unpublished study received Apr 15, 1980 under 677-418; prepared by Shell Development Co., submitted by Diamond Shamrock Agricultural Chemicals, Cleveland, Ohio; CDL:242548-A)
- 70857 Diamond Shamrock Agricultural Chemicals (1977) Efficacy of Rabon. (Compilation; unpublished study received Apr 15, 1980 under 677-418; CDL:242548-B)
- 70858 Diamond Shamrock Agricultural Chemicals (1976) Fly Control by Feeding Rabon^{1/4}(R)_μ Oral Larvicide to Horses. (Compilation; unpublished study received Mar 16, 1981 under 677-418; CDL:244579-A)

- 72154 Serota, D.G.; Mossburg, P.A. (1978) 78-week Progress Report: 104-week Chronic Feeding Study in Mice: Project No. 776-118. Rev. (Unpublished study received Apr 5, 1979 under 776-118; prepared by Hazleton Laboratories America, Inc., submitted by Janitor Supplies, Inc., Champaign, Ill.; CDL:237959-A)
- 72169 Shell Chemical Company (1979) Toxicology of Rabon^{1/4}(R) μ . Summary of studies 237921-B through 237921-D. (Unpublished study received Mar 30, 1979 under 201-407; CDL:237921-A)
- 72171 Cripps, R.E.; Doak, S.; Whitebread, C.; et al. (1974) Toxicity Studies with Gardona: Effect of Gardona on Micro-organisms in the Host-mediated Assay and~in vitro~: Group Research Report TLGR.0066.74. (Unpublished study received Mar 30, 1979 under 201-407; prepared by Shell Research, Ltd., England, submitted by Shell Chemical Co., Washington, D.C.; CDL:237921-C)
- 72172 Dean, B.J.; Van der Pauw, C.L.; Stevenson, D.E. (1976) Toxicity Studies with Gardona: Dominant Lethal Assay in Male Mice after Single Oral Doses or 5 Daily Oral Doses of Gardona: Group Research Report TLGR.0069.76. (Unpublished study received Mar 30, 1979 under 201-407; prepared by Shell Research, Ltd., England, submitted by Shell Chemical Co., Washington, D.C.; CDL:237921-D)
- 72173 Shell Oil Company (1977) A Critique of Bioassay of Tetrachlorvinphos for Possible Carcinogenicity. (Compilation; unpublished study received Mar 30, 1979 under 201-407; CDL:237922-A; 237921)
- 72911 Perlberg, W. (1980) Evaluation of a Flea and Tick Spray for Dogs. (Unpublished study received Aug 29, 1980 under 2596-90; prepared in cooperation with White Eagle Laboratories, submitted by Hartz Mountain Corp., Harrison, N.J.; CDL:243283-A)
- 73492 Shell Chemical Company (1968?) Summary of Toxicology for Gardona^{1/4}(R) μ Insecticide (Formerly SD 8447). (Unpublished study received Jul 5, 1972 under 201-EX-44; CDL:122727-B)
- 73493 Shell Chemical Company (1971) Testing the Activity of Various Insecticide Devices against Fleas and Ticks. (Compilation; unpublished study received Jul 5, 1972 under 201-EX-44; CDL:122727-D)
- 74039 Shell Chemical Company (1965?) Information Relative to the Toxicity of SD 8447 to Fish and Wildlife. Summary of studies 128498-B through 128498-L. (Unpublished study received Feb 8, 1966 under unknown admin. no.; CDL:128498-A)
- 74040 Bond, C.E. (1965) Letter sent to Stanley T. Ichikawa dated Aug 5, 1965 Results of tests with SD 11831 and SD 8447. (Unpublished study received Feb 8, 1966 under unknown admin. no.; prepared by Oregon

State Univ., Agricultural Experiment Station, Dept. of Fisheries and Wildlife, submitted by Shell Chemical Co., Washington, D.C.; CDL:128498-B)

- 74041 Cope, O.B. (1965) Letter sent to Stanley T. Ichikawa dated Aug 20, 1965 Results of tests with SD 8447 on small rainbow trout and bluegills. (U.S. Fish and Wildlife Service, Fish-Pesticide Research Laboratory; unpublished study; CDL:128498-C)
- 74044 Atkins, E.L., Jr. (1965) Letter sent to E.F. Feichtmeir dated Aug 11, 1965 Laboratory tests regarding SD-8447. (Unpublished study received Feb 8, 1966 under unknown admin. no.; prepared by Univ. of California--Riverside, Agricultural Experiment Station, Dept. of Entomology, submitted by Shell Chemical Co., Washington, D.C.; CDL:128498-G)
- 74045 Crabtree, D.G. (1965) Letter sent to S.T. Ichikawa dated Oct 6, 1965 Acute toxicity trial data. (U.S. Fish and Wildlife Service, Section of Chemical, Physiological and Pesticide-Wildlife Studies; unpublished study; CDL:128498-H)
- 74046 Shell Chemical Company (1964) Results of Tests on Birds with Various Chemical Compounds. (Compilation of studies by U.S. Fish and Wildlife Service, Denver Wildlife Research Center; unpublished study; CDL:128498-J)
- 74047 Sherman, M. (1965) Letter sent to Rene Blondeau dated Oct 10, 1965 Confidential report on work with SD 844|. (Unpublished study received Feb 8, 1966 under unknown admin. no.; prepared by Univ. of Hawaii, Dept. of Entomology, submitted by Shell Chemical Co., Washington, D.C.; CDL:128498-K)
- 74048 Hood, G.A. (1964) Letter sent to Stan T. Ichikawa dated Sep 11, 1964 Tests involving Shell compounds. (U.S. Fish and Wildlife Service, Denver Wildlife Research Center; unpublished study; CDL:128498-L)
- 74049 Shell Chemical Company (1965) Summary: SD 8447|. Summary of study 128498-I. (Unpublished study received Feb 8, 1966 under unknown admin. no.; CDL:128498-M)
- 74050 Shell Chemical Company (19??) Determination of the Impurities in Technical SD 8447. (Unpublished study received Feb 8, 1966 under unknown admin. no.; CDL:128498-O)
- 74051 Shell Development Company (1966) Assay of Technical SD 8447: Tentative Infrared Spectrophotometric Method. Method MMS-74/66 dated Jan 26, 1966. (Unpublished study received Feb 8, 1966 under unknown admin. no.; CDL:128498-P)

- 76433 Crabtree, D.G. (1965) Letter sent to S.T. Ichikawa dated Oct 6, 1965 Acute toxicity trial data on SD-8447. (U.S. Fish and Wildlife Service, Section of Chemical, Physiological and Pesticide-Wildlife Studies; unpublished study; CDL:090706-P)
- 77206 Diamond Shamrock Agricultural Chemicals (1980) Background Information and Summary of Safety and Efficacy--Mink Oral Larvicide Containing Rabon¹/₄(R) μ . Summary of studies 245370-B and 245370-C. (Unpublished study received Jul 1, 1981 under 677-422; CDL:245370-A)
- 77207 Howell, R.E. (1981) Letter sent to Bob Pennington dated Apr 6, 1981 Report on mink feeding trial incorporating Rabon oral insecticide. (Unpublished study received Jul 1, 1981 under 677-422; prepared by Fur Breeders Agricultural Cooperative, submitted by Diamond Shamrock Agricultural Chemicals, Cleveland, Ohio; CDL:245370-B)
- 77208 Williams, R.E. (1981) Letter sent to Richard J. Aulerich dated Jun 12, 1981 Bioassay results of feces from Rabon oral larvicide fed to mink. (Unpublished study received Jul 1, 1981 under 677-422; prepared by Purdue Univ., Dept. of Entomology, submitted by Diamond Shamrock Agricultural Chemicals, Cleveland, Ohio; CDL:245370-C)
- 77795 Shell Chemical Company (1966) Summary of Toxicology for Gardona¹/₄(R) μ Insecticide. Summary of studies 091166-B through 091166-D and 091166-F through 091166-R. (Unpublished study received May 23, 1967 under 8G0665; CDL:091166-A)
- 77796 Newell, G.W. (1962) Letter sent to R.R. Whetstone dated Feb 16, 1962 Acute oral toxicity of SD 8447 to rats and mice: Project PB-1008, Report No. 80. (Unpublished study received May 23, 1967 under 8G0665; prepared by Stanford Research Institute, submitted by Shell Chemical Co., Washington, D.C.; CDL:091166-B)
- 77797 Shellenberger, T.E. (1965) Letter sent to Rene Blondeau dated Nov 9, 1965 Rabbit blood cholinesterase following percutaneous application of SD 8447: Project B 868-1, Report No. 30. (Unpublished study received May 23, 1967 under 8G0665; prepared by Stanford Research Institute, submitted by Shell Chemical Co., Washington, D.C.; CDL:091166-F)
- 77798 Shellenberger, T.E. (1966) Subacute Toxicity Studies of Shell Compound SD 8447: SRI Project B-868-1, Report No. 35. (Unpublished study received May 23, 1967 under 8G0665; prepared by Stanford Research Institute, submitted by Shell Chemical Co., Washington, D.C.; CDL:091166-G)
- 77799 Stevenson, D.E.; Ferrigan, L.W.; Hunter, C.G. (1965) The Sub-acute Toxicity of the Halophenyl Vinyl Phosphate Insecticide SD 844 to Rats: Report M(T)-3-65. (Unpublished study received May 23, 1967 under 8G0665; prepared by Shell Research Ltd., England, submitted by Shell

Chemical Co., Washington, D.C.; CDL:091166-H)

- 77800 Walker, A.I.T.; Hunter, C.G. (1965) The Sub-acute Oral Toxicity of the Halophenyl Vinyl Phosphate Insecticide SD 8447 to Dogs: Report R(T)-6-65. (Unpublished study received May 23, 1967 under 8G0665; prepared by Shell Research Ltd., England, submitted by Shell Chemical Co., Washington, D.C.; CDL:091166-J)
- 77801 Brown, V.K.; Ferrigan, L.W.; Hunter, C.G. (1965) Demyelination Studies with the Insecticide SD 8447: Tox 8/65. (Unpublished study received May 23, 1967 under 8G0665; prepared by Shell Research Ltd., England, submitted by Shell Chemical Co., Washington, D.C.; CDL:091166-L)
- 77802 Eisenlord, G.; Loquvam, G.S.; Nemenzo, J.; et al. (1966) Results of Reproduction Study of Rats Fed Diets Containing SD 8447 Insecticide over Three Generations: Report No. 28. (Unpublished study received May 23, 1967 under 8G0665; prepared by Hine Laboratories, Inc., submitted by Shell Chemical Co., Washington, D.C.; CDL:091166-M)
- 77803 Walker, A.I.T.; Hunter, C.G. (1966) The Two Year Oral Toxicity of the Halophenyl Vinyl Phosphate Insecticide SD 8447 to Rats. 2) Results of the Twenty Sixth to Fifty Second Weeks of Exposure: Interim Research Report IRR TL/33/66. (Unpublished study received May 23, 1967 under 8G0665; prepared by Shell Research Ltd., England, submitted by Shell Chemical Co., Washington, D.C.; CDL:091166-N)
- 77804 Whetstone, R.R.; Phillips, D.D.; Sun, Y.P.; et al. (1966) 2-Chloro-1-(2,4,5-trichlorophenyl)vinyl dimethyl phosphate, a new insecticide with low toxicity to mammals. *Journal of Agricultural and Food Chemistry* 14(4):352-356. (Also~In~unpublished submission received May 23, 1967 under 8G0665; submitted by Shell Chemical Co., Washington, D.C.; CDL:091166-O)
- 77805 Hutson, D.H.; Akintonwa, D.A.A.; Griffiths, M.H.; et al. (1966) The Metabolism of 2-Chloro-1-(2',4',5'-trichlorophenyl)vinyl Dimethyl Phosphate (SD 8447) in the Dog and Rat: Research Report R(T)-9-66. (Unpublished study received May 23, 1967 under 8G0665; prepared by Shell Research Ltd., England, submitted by Shell Chemical Co., Washington, D.C.; CDL:091166-P)
- 77806 Brown, V.K.H.; Hunter, C.G. (1966) The Toxicology of the Chlorovinyl Phosphate Insecticides SD 7859 and SD 8447: The Acute Toxicities of 2,4-Dichloromandelic Acid and 2,4,5-Trichloromandelic Acid: Interim Research Report TL/4/66. (Unpublished study received May 23, 1967 under 8G0665; prepared by Shell Research Ltd., England, submitted by Shell Chemical Co., Washington, D.C.; CDL:091166-Q)

- 77807 Shell Development Company (19??) Metabolic Fate of SD 8447 in Plants. (Unpublished study received May 23, 1967 under 8G0665;CDL:091166-R)
- 77809 Shell Chemical Company (1964) Toxicity and Repellency of SD8447 to Blackbirds and Starlings. (Compilation of reports by U.S. Fish and Wildlife Service, Denver Wildlife Research Center; unpublished study; CDL:091166-AA)
- 77810 Sherman, M. (1965) Letter sent to Rene Blondeau dated Oct 1, 1965 Toxicity of SD8447 to chickens. (Unpublished study received May 23, 1967 under 8G0665; prepared by Univ. of Hawaii, Dept. of Entomology, submitted by Shell Chemical Co., Washington, D.C.; CDL:091166-AB)
- 77811 Shell Chemical Company (1966) Summary of Residue Data: Gardona. (Compilation; unpublished study received May 23, 1967 under 8G0665; CDL:091166-AD)
- 77812 Shell Development Company (1966) Residue Determination of SD 8447 and Its Low-melting Isomer SD 13462 in Agricultural Crops: GLC Electron Capture Method. Analytical method MMS-71/66 dated Jan 21, 1966. (Unpublished study received May 23, 1967 under 8G0665; CDL:091166-AE)
- 77813 Shell Development Company (1966) Residue Determination of SD 8447 and Its Low-melting Isomer SD 13462 in Corn and Corn Foliage: A Tentative Method Involving TLC Cleanup and Electron-capture GLC. Analytical method MMS-76/66 dated May 1966. (Unpublished study received May 23, 1967 under 8G0665; CDL:091166-AF)
- 77814 Shell Development Company (1966) Residue Determination of SD 8447 and Its Low-melting Isomer SD 13462 in Agricultural Crops: GLC Phosphorus Detector Method. Analytical method MMS-80/66 dated Dec 1966. (Unpublished study received May 23, 1967 under 8G0665; CDL:091166-AG)
- 77815 Shell Development Company (1967) Residue Determination of Four Gardona $\frac{1}{4}$ (R) μ Insecticide Metabolites in Apples, Corn Husk and Corn Ear. Analytical method MMS-83/67 dated Jan 1967. (Unpublished study received May 23, 1967 under 8G0665; CDL:091166-AH)
- 77816 Shell Development Company (1967) Residue Determination of Acid Hydrolizable Conjugate Metabolites from SD 8447 Treated Crops: GLC Electron-capture method. Analytical method MMS-85/67 dated Apr 1967. (Unpublished study received May 23, 1967 under 8G0665; CDL:091166-AI)
- 77817 Shell Development Company (1967) Determination of Two Carboxylic Acids from SD 8447-treated Crops: GLC Electron Capture Method.

- Analytical method MMS-86/67 dated Apr 1967. (Unpublished study received May 23, 1967 under 8G0665; CDL:091166-AJ)
- 77818 Shell Development Company (1967) Determination of SD 13521 Residues in Crops: GLC-electron Capture Method. Analytical method MMS-87/67 dated Apr 1967. (Unpublished study received May 23, 1967 under 8G0665; CDL:091166-AK)
- 77819 Doyle, R.L.; Teske, R.H.; Elsea, J.R. (1968) Two-year Dietary Administration of SD 8447 to Dogs: P-99A. (Unpublished study received Aug 17, 1968 under 9F0739; prepared by Hill Top Research, Inc., submitted by Shell Chemical Co., Washington, D.C.; CDL: 091273-A)
- 77820 Potter, J.C.; Schultz, D.R. (1968) Metabolic Fate of SD 8447 on Corn and Apples. II. (Unpublished study received Aug 17, 1968 under 9F0739; submitted by Shell Chemical Co., Washington, D.C.; CDL:091273-E)
- 77821 Beynon, K.I.; Wright, A.N. (1968) The Breakdown of the Insecticide Gardona 8447,2-Chloro-1-(2',4',5'-trichlorophenyl)-vinyl Dimethyl Phosphate) on Plants and in Soils: WP-193-68. (Unpublished study received Aug 17, 1968 under 9F0739; submitted by Shell Chemical Co., Washington, D.C.; CDL:091273-F)
- 77822 Potter, J.C.; Page, A.C. (1966) Metabolic Fate of SD 8447 in Corn: Technical Progress Report No. M-4-67. (Unpublished study received Aug 17, 1968 under 9F0739; submitted by Shell Chemical Co., Washington, D.C.; CDL:091273-G)
- 79791 El-sebae, A.H.; Soliman, S.A.; Elamayem, M.A.; et al. (1977) Neurotoxicity of organophosphorus insecticides leptophos and EPN. *Journal of Environmental Science and Health B12(4):269-288.* (Also~In~unpublished submission received on unknown date under 352-338; submitted by E.I. du Pont de Nemours & Co., Wilmington, Del.; CDL:236741-G)
- 79808 Piccirillo, V.J.; Mossburg, P.A.; Serota, D.G. (1978) 104-week Chronic Feeding Study in Mice, SD-8447 and Original SD-8447: Project No. 776-118. 53-week progress rept. (Unpublished study, including letter dated Dec 4, 1978 from E.L. Hobson to Timothy Gardner, received Dec 12, 1978 under unknown admin. no.;prepared by Hazleton Laboratories America, Inc., submitted by Shell Chemical Co., Washington, D.C.; CDL:236604-A)
- 81219 Serota, D.G.; Mossburg, P.A. (1978) 78-week Progress Report: 104-week Feeding Study in Mice: Project No. 776-118. (Unpublished study received Mar 30, 1979 under 201-407; prepared by Hazleton Laboratories America, Inc., submitted by Shell Chemical Co., Washington, D.C.; CDL:237923-A)

- 81227 Jorgenson, T.A. (1971) Skin and Eye Irritancy Studies of Gardona Pet Collars in Dogs: Project LSC 868-20, Report No. 4. Rev. (Unpublished study received Apr 9, 1973 under 201-345; prepared by Stanford Research Institute, submitted by Shell Chemical Co., Washington, D.C.; CDI:008408-A)
- 81228 Stearns, S.M.; Albert, J.R. (19??) Determination of the Effects in the Dog following a Forced Feeding of a 10% Stirofos Flea Collar: TIR-72-023-73. (Unpublished study received Apr 9, 1973 under 201-345; submitted by Shell Chemical Co., Washington, D.C.; CDL:008408-B)
- 81229 Young, R., Jr.; Olson, W.M. (1973) The Effects of Moisture and Rabon^{1/4}(R)_μ Insecticide Pet Collars on the Skin Reaction of Dogs: TIR-70-007-73. (Unpublished study received Apr 9, 1973 under 201-345; submitted by Shell Chemical Co., Washington, D.C.; CDL:008408-C)
- 82158 Stearns, S.M.; Albert, J.R. (1973?) Determination of the Rabbit Eye Irritant Effects of Powder Bloomed from the 10% Stirofos Collar with a Comparison of the Irritant Effects of a Similar Bulk of Talc (U.S.P.): TIR 73-026-74. (Unpublished study received Feb 6, 1976 under 201-225; submitted by Shell Chemical Co., Washington, D.C.; CDL:223348-A)
- 82159 Albert, J.R.; Summitt, L.M. (19??) Determination of the Skin Irritation and Sensitization Potential of Five Pest Collars in the Guinea Pig: TIR-73-001-75. (Unpublished study received Feb 6, 1976 under 201-225; submitted by Shell Chemical Co., Washington, D.C.; CDL:223348-B)
- 82160 Dean, B.J.; Senner, K.R. (1974) Toxicity Studies with Gardona: Chromosome Studies on Bone Marrow Cells of Chinese Hamsters Two Daily Oral Doses of Gardona: Group Research Report TLGR.0062.74. (Unpublished study received Feb 6, 1976 under 201-225; prepared by Shell Research, Ltd., England, submitted by Shell Chemical Co., Washington, D.C.; CDL:223348-D)
- 83136 Shell Chemical Company (1972) Summary of Basic Data for Technical Rabon^{1/4}(R)_μ Insecticide. Rev. San Ramon, Calif.: Shell. (Technical data bulletin ACD:67-111; also~In~unpublished submission received Jul 5, 1972 under 201-EX-44; CDL:122727-A)
- 83743 Shell Chemical Company (19??) SD 8447 Insecticide. (Unpublished study received Feb 8, 1966 under unknown admin. no.; CDL: 128498-N)
- 83744 Shell Chemical Company (1965) Performance Data: Summary. (Compilation; unpublished study received Feb 8, 1966 under unknown admin. no.; CDL:128498-Q)

- 84180 Sherman, M. (1968) Letter sent to Ralph Glasser dated Jul 8, 1968
Chronic toxicity studies: The effect of SD 8447 on hen eggs and tissues.
(Unpublished study received Sep 4, 1981 under 43688-1; prepared by
Univ. of Hawaii, Dept. of Entomology, submitted by Shu-Fly Industries,
Inc., Reno, Nev.; CDL:245998-B)
- 84181 Dean, W.F. (1971) Letter sent to J.G. Matthysee dated Jul 7, 1971 Rabon
toxicity test on ducklings. (Unpublished study received Sep 4, 1981 under
43688-1; prepared by Cornell Univ., Dept. of Poultry Science, Duck
Research Laboratory, submitted by Shu-Fly Industries, Inc., Reno, Nev.;;
CDL:245998-D)
- 84189 Ivey, M.C.; DeVaney, J.A.; Ivie, G.W. (1981) Residues of Stirofos
(Rabon $\frac{1}{4}$ (R) μ) in Eggs of Laying Hens Treated for Northern Fowl Mite
Control by Dipping. (U.S. Dept. of Agriculture, Science and Education
Administration, Agricultural Research, Veterinary Toxicology and
Entomology Research Laboratory; unpublished study; CDL:245949-A)
- 87632 Shell Chemical Company (19??) Ingredient Statement: Gardona $\frac{1}{4}$ (R) μ
Insecticide 50: Wettable Powder. (Unpublished study received Feb 12,
1970 under 201-270; CDL:008409-A)
- 87633 Shell Chemical Company (1969) Summary: Gardona Insecticide:
Efficacy. (Compilation; unpublished study, including published data,
received Feb 12, 1970 under 201-270; CDL:008409-B)
- 88216 Sharp, A.J. (1981) Efficacy of Swine Oral Larvicide $\frac{1}{4}$ (R) μ Formulated
into Cubes: AJS 80-05-17. Final rept. (Unpublished study received Nov
30, 1981 under 677-416; submitted by Diamond Shamrock Agricultural
Chemicals, Cleveland, Ohio; CDL:246280-A)
- 88217 Diamond Shamrock Agricultural Chemicals (19??) Final Report to
Protocol AJS 800518: Safety of Sol in Market Swine. (Unpublished study
received Nov 30, 1981 under 677-416; CDL:246280-B)
- 88218 Diamond Shamrock Agricultural Chemicals (1981) Clinical Evaluation of
the Safety of Horse Oral Larvicide in Gestating Mares, Their Offspring
and Breeding Stallions. (Unpublished study received Nov 30, 1981 under
677-416; CDL:246280-C)
- 88598 Ladd, R. (1972) Report to ...: Teratogenic Study with Gardona Insecticide
Technical in Albino Rabbits: IBT No. J239. (Unpublished study received
Feb 6, 1976 under 201-225; prepared by Industrial Bio-Test Laboratories,
Inc., submitted by Shell Chemical Co., Washington, D.C.;;
CDL:223348-C)
- 91183 Farnam Companies, Incorporated (19??) Flea and Tick Pet
Collars. (Unpublished study received Feb 13, 1978 under
270-EX-1; CDL:232933-B)

- 91657 Anderson, L.D.; Atkins, E.L., Jr. (1966) 1965 Research on the Effect of Pesticides on Honey Bees: Submitter 17923. (Unpublished study received Jan 18, 1968 under 3125-143; prepared by Univ. of California--Riverside, Entomology Dept., submitted by Mobay Chemical Corp., Kansas City, Mo.; CDL:005635-T)
- 93362 Johnston, C.D. (1967) Gardona Insecticide: Acute Dermal Toxicity for the Rabbit. (Unpublished study received Dec 8, 1967 under 201-238; prepared by Woodard Research Corp., submitted by Shell Chemical Co., Washington, D.C.; CDL:000941-A)
- 93363 Duerden, B.; Bleiberg, M. (1967) Gardona(R) Insecticide: Acute Inhalation Toxicity to Guinea Pigs. (Unpublished study received Dec 8, 1967 under 201-238; prepared by Woodard Research Corp., submitted by Shell Chemical Co., Washington, D.C.; CDL: 000941-B)
- 93364 Duerden, B.; Bleiberg, M.J. (1967) Gardona¹/₄(R)_μ Insecticide: Acute Oral Toxicity to Rats. (Unpublished study received Dec 8, 1967 under 201-238; prepared by Woodard Research Corp., submitted by Shell Chemical Co., Washington, D.C.; CDL:000941-C)
- 93365 Duerden, B.; Bleiberg, M.J. (1967) Gardona¹/₄(R)_μ Insecticide: Intracutaneous Sensitization in Guinea Pigs. (Unpublished study received Dec 8, 1967 under 201-238; prepared by Woodard Research Corp., submitted by Shell Chemical Co., Washington, D.C.; CDL:000941-D)
- 93973 Environmental Consultants, Incorporated (1981) Bench-top Efficacy Trials of Shu-fly 3% Rabon Pesticidal Powders against Two Available Species of Ants (Formicidae), German Cockroaches (~Blatella germanica~), and American Cockroaches, (~Periplaneta americana~): File #597. Final rept. (Unpublished study received Sep 4, 1981 under 43688-2; submitted by Shu-Fly Industries, Inc., Reno, Nev.; CDL:245978-A)
- 94407 Bond, C.E. (1965) Letter sent to Stanley T. Ichikawa dated Aug 5, 1965 Toxicity of SD 11831--fish. (Unpublished study received Sep 30, 1971 under 0F0981; prepared by Oregon State Univ., Agricultural Experiment Station, submitted by Shell Chemical Co., Washington, D.C.; CDL:091685-Z)
- 95745 Bond, C.E. (1965) Letter sent to Stanley T. Ichikawa dated Aug 5, 1965 Toxicity of SD 11831 and SD 8447 to fish. (Unpublished study received Jul 1, 1966 under 201-167; prepared by Oregon State Univ., Agricultural Experiment Station, Dept. of Fisheries and Wildlife, submitted by Shell Chemical Co., Washington, D.C.; CDL:000892-N)
- 95915 Cope, O.B. (1967) Letter sent to William J. Hughes dated Nov 21, 1967 Results of toxicity tests with Shell compounds SD 7727, SD 8447, and SD

8530 against fish. (U.S. Fish and Wildlife Service, Fish-Pesticide Research Laboratory; unpublished study; CDL:093138-L)

- 96304 Potter, D.; Linnett, S.L.; Lee, S.A.; et al. (1981) Toxicity Studies with SD 8447 (Gardona): Biochemical and Morphological Studies of the Effects of Short Term Dietary Exposure on Mouse Liver: Group Research Report TLGR.80.125. (Unpublished study received Feb 12, 1982 under unknown admin. no.; prepared by Shell Research Ltd., England, submitted by Shell Oil Co., Washington, D.C.; CDL:246800-A)
- 96682 Diamond Shamrock Agricultural Chemicals (1981) Cattle Grub Control Rabon^{1/4}(R)_μ Insecticide Formulation. (Compilation; unpublished study received Sep 11, 1981 under 677-391; CDL:245980-A)
- 102466 McGill, L. (1970) Flavor Evaluation Report: Fresh Tomatoes|. (Unpublished study received Jun 5, 1974 under 4F1515; prepared by Oregon State Univ., Dept. of Food Science and Technology, Sensory Evaluation Section, submitted by Shell Chemical Co., Washington, DC; CDL:094027-B)
- 107197 Sommer, K. (1977) A Critique of Bioassay of Tetrachlorvinphos for Possible Carcinogenicity: (A Draft Report Issued for the National Cancer Institute by Gulf South Research Institute). (Unpublished study received Aug 13, 1979 under unknown admin. no.; submitted by Shell Chemical Co., Washington, DC; CDL:238933-A)
- 107576 Shell Chemical Co. (1974) Shell Horse Fly Free Gel. (Compilation; unpublished study received Mar 13, 1974 under 201-340; CDL: 023151-A)
- 107577 Wagoner, S.; Young, R.; Olson, W. (1974) Rabon Insecticide Horse Wipe-on and Gel Dermal Irritation Study: TIR-74-016-73. (Unpublished study received Feb 22, 1974 under 201-339; submitted by Shell Chemical Co., Washington, DC; CDL:023154-A)
- 107578 Young, R. (19??) Effects of Whole Body Application of the Rabon Insecticide Horse Wipe-on Solution: TIR-74-008-74. (Unpublished study received Jun 7, 1974 under 201-339; submitted by Shell Chemical Co., Washington, DC; CDL:023155-A)
- 107633 Goble, G.; Eisenlord, G. (1972) Acute Toxicity Studies of Horse Gel Insecticide/Repellent in Experimental Animals: Report No. 22. (Unpublished study received Feb 26, 1973 under 201-340; prepared by Hine Laboratories, Inc., submitted by Shell Chemical Co., Washington, DC; CDL:051021-A)

- 107634 Goble, G.; Eisenlord, G. (1972) Acute Toxicity Studies of Horse Wipe-on or Spray in Experimental Animals: Report No. 15. (Unpublished study received Nov 15, 1972 under 201-339; prepared by Hine Laboratories, Inc., submitted by Shell Chemical Co., Washington, DC; CDL:051022-A)
- 108645 Shell Chemical Co. (1966) Efficacy of SD8447 and Other Insecticides on Cattle|. (Compilation; unpublished study received Sep 15, 1966 under unknown admin. no.; CDL:122673-A)
- 108646 Ivey, M.; Hoffman, R.; Claborn, H. (19??) Residues of SD-8447 in the Body Tissues of Sprayed Cattle. (U.S. Agricultural Research Service, Entomology Research Div.; unpublished study; CDL: 122673-B)
- 108675 Shell Chemical Co. (1968) Efficacy of Gardona 75 Insecticide: Tests on Apples. (Compilation; unpublished study received Oct 30, 1968 under 201-EX-31; CDL:122707-A)
- 112519 Skahen, R. (1965) Pathology Summary; Gross Examination: SRI Project 5434-3. (Unpublished study received Aug 17, 1968 under 9F0739; submitted by Shell Chemical Co., Washington, DC; CDL:091274-A)
- 112520 Stevenson, D.; Ferrigan, L.; Hunter, C. (1965) The Sub-acute Toxicity of the Halophenyl Vinyl Phosphate Insecticide SD 8447 to Rats: Report M(T)-3-65. (Unpublished study received Aug 17, 1968 under 9F0739; prepared by Shell Research Ltd., Eng., submitted by Shell Chemical Co., Washington, DC; CDL:091274-C)
- 112521 Stanford Research Institute (1966) Letter sent to R. Blondeau dated Feb 7, 1966 Subacute percutaneous toxicity study and cholinesterase evaluation of SD 8447: Ref. B 5692-3, Letter Report No. 1. (Unpublished study received Aug 17, 1968 under 9F0739; submitted by Shell Chemical Co., Washington, DC; CDL:091274-E)
- 112522 Eisenlord, G.; Loquvam, G.; Nemenzo, J. (1966) Results of Reproduction Study of Rats Fed Diets Containing SD 8447 Insecticide over Three Generations: Report No. 28. (Unpublished study received Aug 17, 1968 under 9F0739; prepared by Hine Laboratories, Inc., submitted by Shell Chemical Co., Washington, DC; CDL:091274-G)
- 112523 Shell Chemical Co. (1968) Toxicology Section: Gardona Insecticide. Summary of studies 091274-B through 091274-G and 091274-I through 091274-O. (Unpublished study received Aug

17, 1968 under 9F0739; CDL:091274-H)

- 112524 Shellenberger, T. (1966) Subacute Toxicity Studies of Shell Compound SD 8447: SRI Project B-868-1, Report No. 35. (Unpublished study received Aug 17, 1968 under 9F0739; prepared by Stanford Research Institute, submitted by Shell Chemical Co., Washington, DC; CDL:091274-M)
- 112525 Walker, A.; Hunter, C. (1967) The Oral Toxicity of the Halophenyl Vinyl Phosphate Insecticide Gardona (SD 8447): Two Year Oral Experiment in Rats: Research Report R(T)-9-67. (Unpublished study received Aug 17, 1968 under 9F0739; prepared by Shell Research Ltd., Eng., submitted by Shell Chemical Co., Washington, DC; CDL:091274-O)
- 113941 Duerden, B.; Bleiberg, M. (1967) Gardona Insecticide: Acute Inhalation Toxicity to Guinea Pigs. (Unpublished study received Aug 17, 1968 under 9F0739; prepared by Woodard Research Corp., submitted by Shell Chemical Co., Washington, DC; CDL:091274-B)
- 114690 Diamond Shamrock Agricultural Chemicals (1977) 90% Dimethyl T. (Unpublished study received Sep 13, 1977 under 677-388; CDL: 231597-A)
- 115939 Shell Chemical Co. (1972) Residue Data in Reply to EPA's July 10, 1972 Letter of Special Review for Ciovap EC Insecticide. (Compilation; unpublished study received Sep 20, 1972 under 201-244; CDL:000948-A)
- 116019 Shell Chemical Co. (1970) Efficacy of Rabon on Livestock|. (Compilation; unpublished study received Jan 19, 1970 under 1F1090;CDL:090850-A)
- 116020 Shell Chemical Co. (1970) Residue Data Developed from the Use of Dairy Cattle: Rabon. (Compilation; unpublished study received Jan 19, 1970 under 1F1090; CDL:090850-B)
- 116031 Shell Chemical Co. (1972) Data in Support of Label Registration for Use of Gardona 75 WP Insecticide on Pears, Cherries, Plums, Cranberries and Tomatoes. (Compilation; unpublished study received Aug 18, 1972 under 1F1023; CDL:090874-A)
- 116137 Shell Chemical Co. (1970) Performance Data in Support of the Use of Gardona 75 WP Insecticide To Control Certain Insect Pests of

- Pears, Cherries, Plums, Prunes, Peaches, Cranberries and Tomatoes. (Compilation; unpublished study received Nov 9, 1970 under 1F1023; CDL:091075-A)
- 116552 Shell Chemical Co. (1971) Summary: Gardona on Alfalfa in California: Performance Data|. (Compilation; unpublished study received Oct 12, 1972 under 2F1281; CDL:091818-A)
- 116553 Shell Chemical Co. (1971) The Results of Tests on the Amount of Residues Remaining, Including a Description of the Analytical Methods Used: Gardona. (Compilation; unpublished study received Oct 12, 1972 under 2F1281; CDL:091818-B)
- 116789 Shell Chemical Co. (1972) Additional Data: Gardona Insecticide. (Compilation; unpublished study received on unknown date under 2F1187; CDL:090999-A)
- 116790 Shell Chemical Co. (1971) The Results of Tests on the Amount of Gardona Residues Remaining, Including a Description of the Analytical Methods Used. (Compilation; unpublished study received May 1, 1972 under 2F1187; CDL:090999-B)
- 116873 Shell Chemical Co. (1968) Performance Data To Support a Label Application for the Use of Shell Gardona Insecticide on Apples: Addendum II Analysis of Phytotoxicity Data, 1963-1967. (Compilation; unpublished study received Sep 20, 1968 under 9F0739; CDL:091931-A)
- 116876 Shell Chemical Co. (1968) Performance Data To Support the Use of Rabon Insecticide for the Control of Certain Ectoparasites on Livestock. (Compilation; unpublished study received Feb 7, 1969 under 9F0805; CDL:092153-A)
- 116886 Shell Chemical Co. (1971) Performance Data in Support of the Use of Gardona Insecticide To Control Certain Insect Pests of Forage and Pasture Grasses, Cotton, Green, Field and Snap Beans. (Compilation; unpublished study received Aug 6, 1971 under 2F1187; CDL:092059-A)
- 116957 Shell Chemical Co. (1969) Performance Data To Support the Use of Rabon Insecticide for the Control of Certain Ectoparasites of Poultry. (Compilation; unpublished study received May 14, 1969 under 9F0835; CDL:092283-A)
- 117277 Shell Chemical Co. (1964) 6SD-8447: Toxicity to Birds|. (Compilation; unpublished study received Feb 8, 1966 under 201-195; CDL:000915-A)

- 117278 Hood, G. (1964) Bioassay Record: SD-8447|: Test No. H-187. (Unpublished study received Feb 8, 1966 under 201-195; prepared by U.S. Fish and Wildlife Service, Denver Wildlife Research Center, submitted by Shell Chemical Co., Washington, DC; CDL:000915-C)
- 117279 Shell Chemical Co. (1965) Residue: SD 8447--Corn|. (Compilation; unpublished study received Feb 8, 1966 under 201-195; CDL:000915-E)
- 117280 Shell Chemical Co. (1965) Performance Data: δSD 8447--Corn|. (Compilation; unpublished study received Feb 8, 1966 under 201-195; CDL:000915-F)
- 117281 Shell Chemical Co. (1966) δSD 8447: Chemical Study|. (Compilation; unpublished study received Feb 25, 1966 under 201-195; CDL:000926-A)
- 117282 Shell Chemical Co. (1964) SD 8447 and Other Pesticides: Toxicity to Aquatic Life|. (Compilation; unpublished study received Feb 25, 1966 under 201-195; CDL:000926-E)
- 117283 Johansen, C.; Hutt, R. (1963) Bee Poisoning Investigations, 1963. (Unpublished study received Feb 25, 1966 under 201-195; prepared by Washington State Univ., submitted by Shell Chemical Co., Washington, DC; CDL:000926-G)
- 117284 U.S. Fish and Wildlife Service, Section of Chemical, Physiological and Pesticide-Wildlife Studies (19??) SD-8447 and 11831: Acute Oral Toxicity Trials--Mallard Duck and Chukar Partridge|. (Unpublished study received Feb 25, 1966 under 201-195; submitted by Shell Chemical Co., Washington, DC; CDL:000926-I)
- 117285 Shell Chemical Co. (1966) Performance Data: SD 8447|. (Compilation; unpublished study received Feb 25, 1966 under 201-195; CDL:000926-M)
- 117286 Stearns, S.; Albert, J. (1952?) Oral LD50 Determination for Ravap Insecticide in the Rat: TIR-72-083-72. (Unpublished study received Jul 17, 1972 under 201-303; submitted by Shell Chemical Co., Washington, DC; CDL:001003-A)
- 117287 Stearns, S.; Albert, J. (19??) Acute Dermal Toxicity of Ravap Insecticide in the Rabbit: TIR-72-082-72. (Unpublished study received Jul 17, 1972 under 201-303; submitted by Shell Chemical Co., Washington, DC; CDL:001003-B)
- 117288 U.S. Agricultural Research Service (1970) δEfficacy of Various Micronized Dust and Aerosol Pesticides. (Compilation;

- unpublished study received Dec 2, 1970 under 11312-5;
CDL:004829-A)
- 117289 Shell Chemical Co. (1973) Rabon Collars for Cats and Dogs: Efficacy. (Compilation; unpublished study received Sep 7, 1973 under 201-346; CDL:008791-A)
- 117290 Shell Chemical Co. (1974) Data on Rabon Oral Larvicide on Cattle|. (Compilation; unpublished study received Dec 20, 1974 under 201-359; CDL:009655-A)
- 117291 Hartz Mountain Corp. (1975) Reports Concerning Rabon Tick and Flea Collar for Dogs and Cats and the Hartz 2 in 1 Collar|. (Compilation; unpublished study received Jan 15, 1975 under 2596-49; CDL:009733-A)
- 117292 Hartz Mountain Corp. (1975) Hartz 2 in 1 Collar for Dogs and Cats: Data in Support of Application for Amended Registration. (Compilation; unpublished study received Jan 15, 1975 under 2596-49; CDL:028590-A)
- 117293 Shell Chemical Co. (1973) Safety in Cattle: Summary of Toxicity Data on Rabon. (Unpublished study received Oct 17, 1973 under 201-359; CDL:050006-A)
- 117294 Sharp, J.; Young, R. (19??) Preliminary Observations on Determining the No Effect Level of SD 8447 in Rations Consumed by Steers: TIR-70-014-72. (Unpublished study received Oct 17, 1973 under 201-359; submitted by Shell Chemical Co., Washington, DC; CDL:050006-B)
- 117295 Sharp, J.; Young, R. (19??) The Determination of the Effect of Feeding High Levels of SD 8447 to Young Dairy Calves: TIR-70-012-72. (Unpublished study received Oct 17, 1973 under 201-359; submitted by Shell Chemical Co., Washington, DC; CDL:050006-C)
- 117296 Young, R. (19??) Effect of Feeding Steers 30 Miligrams Rabon Insecticide per Kilogram of Body Weight for 90 Days: TIR-70-056-71. (Unpublished study received Oct 17, 1973 under 201-359; submitted by Shell Chemical Co., Washington, DC; CDL:050006-D)
- 117297 Young, R.; Sharp, J.; Brown, L. (19??) The Influence of SD 8447 on Steer Growth, Steer Parasitism and Development of Fly Larvae in Treated Steer Manure: TIR-70-006-72. (Unpublished study received Oct 17, 1973 under 201-359; submitted by Shell Chemical Co., Washington, DC; CDL:050006-F)

- 117298 Miller, R.; Gordon, C. (19??) Effect of feeding Rabon to dairy cows over extended periods. *Journal of Economic Entomology* 66(1): 135-138. (Also In unpublished submission received Oct 17, 1973 under 201-359; submitted by Shell Chemical Co., Washington, DC; CDL:050006-G)
- 117299 Wagoner, S.; Young, R.; Olson, W. (19??) The Effect of Stirofos on Milk Production and Reproduction of Dairy Cows--III: Interim Estrus, Length of Gestation, Breeding, and Calving Data: TIR-74-005-73. (Unpublished study received Oct 17, 1973 under 201-359; submitted by Shell Chemical Co., Washington, DC; CDL:050006-H)
- 117300 Seidel, G. (1973) Evaluation of the Effects of Rabon on Reproductive Characteristics of Beef Bulls. Final rept. (Unpublished study received Oct 17, 1973 under 201-359; prepared by Colorado State Univ., submitted by Shell Chemical Co., Washington, DC; CDL:050006-I)
- 117301 Sharp, J.; Young, R.; Olson, W. (19??) A Cattle Study of the Interaction of SD 8447 (Stirofos) with Veterinary Drugs Normally Used under Feed Lot Conditions: TIR-70-021-72. (Unpublished study received Oct 17, 1973 under 201-359; submitted by Shell Chemical Co., Washington, DC; CDL:050006-J)
- 117302 Young, R.; Page, A.; Potter, J.; et al. (1965) Cattle Tolerance and Acceptance of SD 8447: Technical Report No. M-10-65. (Unpublished study received Oct 17, 1973 under 201-359; submitted by Shell Chemical Co., Washington, DC; CDL:050006-K)
- 117303 Shell Chemical Co. (1970?) Safety to Wildlife: Stirofos: Toxicity Data Summary. (Unpublished study received Oct 17, 1973 under 201-359; CDL:050007-A)
- 117304 DeCino, T.; Cunningham, D.; Schafer, E.; et al. (1964) Bird Repellency and Toxicity of SD 8447. (Unpublished study received Oct 17, 1973 under 201-359; prepared by U.S. Fish and Wildlife Service, Denver Wildlife Research Center, submitted by Shell Chemical Co., Washington, DC; CDL:050074-B)
- 117305 Shellenberger, T. (1965) Acute and Subacute Toxicity Studies with SD 8447 in Rats, Rabbits, and Japanese Quail: Project B 868-1, Report No. 29. (Unpublished study received Oct 17, 1973 under 201-359; prepared by Stanford Research Institute, submitted by Shell Chemical Co., Washington, DC; CDL:050007-C)
- 117306 Alabaster, J. (1969) Survival of fish in 164 herbicides, insecticides, fungicides, wetting agents and miscellaneous substances.

- International Pest Control (Mar-Apr). (Also In unpublished submission received Oct 17, 1973 under 201-359; submitted by Shell Chemical Co., Washington, DC; CDL:050007-D)
- 117307 Bond, C. (1965) Preliminary Results of Contamination of Salmon and Guppies by SD 11831 and SD 8447. (Unpublished study received Oct 17, 1973 under 201-359; prepared by Oregon State Univ., Agricultural Experiment Station, Dept. of Fisheries and Wildlife, submitted by Shell Chemical Co., Washington, DC; CDL: 050007-E)
- 117308 Cope, O. (1965) Quarterly Progress Report, April-June 1965. (Unpublished study received Oct 17, 1973 under 201-359; prepared by U.S. Fish and Wildlife Service, Fish-Pesticide Research Laboratory, submitted by Shell Chemical Co., Washington, DC; CDL: 050007-F)
- 117309 Rider, J. (1968) Toxicity Evaluation of Gardona in Humans. (Unpublished study received Oct 17, 1973 under 201-359; prepared by Franklin Hospital, Gastrointestinal Research Laboratory, submitted by Shell Chemical Co., Washington, DC; CDL:050007-H)
- 117310 Rider, J.; Puletti, E. (1969) Studies on the Anticholinesterase Effects of Gardona, Methyl Parathion, and Guthion in Human Subjects. Taken from: Fed. Proc. 28(2):479. (Abstract; also In unpublished submission received Oct 17, 1973 under 201-359; submitted by Shell Chemical Co., Washington, DC; CDL:050007-J)
- 117311 Shell Chemical Co. (1971) Safety in Domestic Animals: Summary: Toxicity of Stirofos. (Unpublished study received Oct 17, 1973 under 201-359; CDL:050007-K)
- 117312 Young, R. (19??) Effect of Feeding Rabon Insecticide to Pigs for 31 Days: TIR-70-054-71. (Unpublished study received Oct 17, 1973 under 201-359; submitted by Shell Chemical Co., Washington, DC; CDL:050007-L)
- 117313 Sharp, J.; Young, R.; Brown, J.; et al. (1971) Response of Growing Lambs Fed a Steer Ration Containing Rabon Insecticide for 31 Days: TIR-70-055-71. (Unpublished study received Oct 17, 1973 under 201-359; submitted by Shell Chemical Co., Washington, DC; CDL:050007-M)
- 117314 Sharp, M. (1971) Tolerance of Horses to Grain Containing Rabon Insecticide. (Unpublished study received Oct 17, 1973 under 201-359; submitted by Shell Chemical Co., Washington, DC;

CDL: 050007-N)

- 117315 Sherman, M. (1965) Toxicity of SD 8447 to Poultry. (Unpublished study received Oct 17, 1973 under 201-359; prepared by Univ. of Hawaii, Dept. of Entomology, submitted by Shell Chemical Co., Washington, DC; CDL:050007-P)
- 117316 Yadava, C. (1969) An Investigation of the Toxicology and Residues of Rabon in Poultry. Doctoral dissertation, Univ. of Massachusetts. (Unpublished study received Oct 17, 1973 under 201-359; submitted by Shell Chemical Co., Washington, DC; CDL:050007-Q)
- 117317 Yadava, C.; Shaw, F.; Anderson, D. (1970) Effects of massive oral dosages of Rabon on hens. Poultry Science 49:321-323. (Also In unpublished submission received Oct 17, 1973 under 201-359; submitted by Shell Chemical Co., Washington, DC; CDL:050007-R)
- 117321 Shell Chemical Co. (1968) Data Concerning Gardona Residues in Apples, Including Analytical Methods. (Compilation; unpublished study received on unknown date under 9F0739; CDL: 093050-A)
- 117322 Shell Chemical Co. (1968) The Name, Chemical Identity and Composition of the Pesticide Chemical: Gardona. (Compilation; unpublished study received Jul 10, 1968 under 9F0739; CDL:093050-B)
- 117323 Shell Chemical Co. (1968) Performance Data To Support the Use of Rabon Insecticide for the Control of Certain Ectoparasites on Livestock. (Compilation; unpublished study received Feb 7, 1969 under 9F0805; CDL:092153-A)
- 117324 Shell Chemical Co. (1969) Gardona: Residues in Corn|. (Compilation; unpublished study received Nov 19, 1969 under 9F0804; CDL:093113-A)
- 117325 Shell Chemical Co. (1969) Efficacy of Gardona on Corn|. (Compilation; unpublished study received Nov 19, 1969 under 9F0804;CDL:093113-B)
- 117326 Shell Chemical Co. (1968) The Name, Chemical Identity and Composition of the Pesticide Chemical: Gardona. (Compilation; unpublished study received Feb 4, 1969 under 9F0804; CDL:093113-C)
- 117327 Shell Chemical Co. (1971) Efficacy of Rabon on Cattle. (Compilation; unpublished study received Feb 7, 1969 under 9F0805; CDL:093114-A)

- 117328 Shell Chemical Co. (1968) The Name, Chemical Identity and Composition of the Pesticide Chemical: Rabon. (Compilation; unpublished study received Feb 7, 1969 under 9F0805; CDL:093114-B)
- 117329 Shell Chemical Co. (1969) Gardona: Residues in Milk and Other Subjects. (Compilation; unpublished study received on unknown date under 9F0805; CDL:093114-C)
- 117330 Shell Chemical Co. (1968) The Name, Chemical Identity and Composition of the Pesticide Chemical: Gardona| (Compilation; unpublished study received Jun 20, 1969 under 9G0850; CDL: 093146-A)
- 117332 Shell Chemical Co. (1971) Additional Phytotoxicity Data: Gardona Insecticide. (Compilation; unpublished study received on unknown date under 1F1023; CDL:093332-A)
- 117333 Shell Chemical Co. (1968) The Name, Chemical Identity, and Composition of the Pesticide Chemical: Gardona. (Compilation; unpublished study received Aug 7, 1970 under 1F1023; CDL:093332-B)
- 117334 Shell Chemical Co. (1970) The Results of Tests on the Amount of Residues Remaining, Including Residue Methodology: Gardona. (Compilation; unpublished study received Aug 7, 1970 under 1F1023; CDL:093332-C)
- 117335 Shell Chemical Co. (1968) The Name, Chemical Identity and Composition of the Pesticide Chemical: Rabon. (Compilation; unpublished study received Dec 16, 1970 under 1F1090; CDL:093403-A)
- 117336 Shell Chemical Co. (1971) The Results of Tests on the Amount of Rabon Residues Remaining, Including a Description of the Analytical Method. (Compilation; unpublished study received Dec 16, 1970 under 1F1090; CDL:093403-B)
- 117337 Shell Chemical Co. (1971) Performance Data To Support the Use of Rabon Insecticide in the Control of Certain Ectoparasites on Swine: Supplement No. 1. (Compilation; unpublished study received Oct 18, 1971 under 1F1121; CDL:093431-A)
- 117338 Shell Chemical Co. (1968) The Name, Chemical Identity and Composition of the Pesticide Chemical: Rabon. (Compilation; unpublished study received Dec 13, 1970 under 1F1121; CDL: 093431-B)

- 117339 Shell Chemical Co. (1969) Residue Data Developed from the Use of Rabon on Livestock. (Compilation; unpublished study received Dec 13, 1970 under 1F1121; CDL:093431-C)
- 117340 Shell Chemical Co. (1969) Residue Data for Rabon Metabolites in Chicken Tissues and Eggs from California. (Compilation; unpublished study received Dec 1, 1969 under 9F0835; CDL:093538-A)
- 117341 Shell Chemical Co. (1965) 1965 Residue Data for Sweet Corn from York, Nebraska. (Unpublished study received Aug 1, 1966 under 201-195; CDL:101214-A)
- 117342 Harris, T.; Mitchell, L. (19??) Gardona Insecticide: Toxicity Data and Manufacturing Process. (Unpublished study received May 12, 1970 under unknown admin. no.; prepared in cooperation with U.S. Food and Drug Administration, submitted by Shell Chemical Co., Washington, DC; CDL:110575-A)
- 117343 Anon. (19??) Summary of Residue Data for the Recommended Rate of Application: (Gardona). (Unpublished study received on unknown date under unknown admin. no.; submitted by ?; CDL:118497-A)
- 117344 Shell Development Co. (1966) Determination of the Impurities in Technical SD 8447. (Unpublished study received Feb 17, 1966 under unknown admin. no.; CDL:120030-A)
- 117345 Teeters, W. (1973) Dermal and Ocular Irritation Test of Ravap Insecticide Emulsible Concentrate. (Unpublished study received Jul 24, 1973 under 201-246; prepared by U.S. Pharmacology Laboratory, submitted by Shell Chemical Co., Washington, DC; CDL:121711-A)
- 117346 Teeters, W. (1973) Acute Oral and Dermal Toxicity of Ravap Insecticide Emulsible Concentrate. (Unpublished study received Jul 24, 1973 under 201-246; prepared by U.S. Pharmacology Laboratory, submitted by Shell Chemical Co., Washington, DC; CDL:121711-B)
- 117347 Shell Chemical Co. (1968) Performance Data in Support of a Label for the Use of Gardona Insecticide on Insects Attacking Corn. (Compilation; unpublished study received Feb 4, 1969 under 9F0804; CDL:096400-A)
- 117348 Shell Chemical Co. (1971) Rabon Insecticide: Cattle Performance Data. (Compilation; unpublished study received May 24, 1971 under 201-306; CDL:094778-A)

- 117349 Shell Chemical Co. (1970) Gardona: Residues in Cotton and Other Crops. (Compilation; unpublished study received Aug 6, 1971 under 2F1187; CDL:093510-A)
- 117350 Shell Chemical Co. (1971) The Name, Chemical Identity, and Composition of the Pesticide Chemical: Gardona. (Compilation; unpublished study received Aug 6, 1971 under 2F1187; CDL:093510-B)
- 117351 Shell Chemical Co. (1971) Analytical Methods for the Determination of the Pesticide Chemical: Gardona. (Compilation; unpublished study received Aug 6, 1971 under 2F1187; CDL:093510-C)
- 117352 Shell Chemical Co. (1970) Additional Performance Data in Support of Rabon Insecticide. (Compilation; unpublished study received Mar 18, 1970 under 9F0835; CDL:094922-A)
- 117353 Shell Chemical Co. (1971) The Name, Chemical Identity and Composition of the Pesticide Chemical: Gardona. (Compilation; unpublished study received Jun 12, 1972 under 2F1281; CDL: 094938-A)
- 117354 Shell Chemical Co. (1973) Residue Data: SD-8447|. (Compilation; unpublished study received Oct 17, 1973 under 201-359; CDL: 101173-A)
- 117355 Shell Chemical Co. (1965) Performance Data: SD 8447|. (Compilation; unpublished study received Feb 8, 1966 under 201-EX-25; CDL:122701-N)
- 117356 Shell Chemical Co. (1965?) Information Relative to the Toxicity of SD 8447 to Fish and Wildlife: Summary. (Unpublished study received Feb 25, 1966 under unknown admin. no.; CDL:128579-A)
- 117357 U.S. Agricultural Research Service (19??) Summary of Toxicologic Studies of Shell Compound 8447 in Cattle and Sheep. (Unpublished study received on unknown date under unknown admin. no.; prepared by Animal Disease and Parasite Research Div., Toxicological Investigations Laboratory, submitted by Shell Chemical Co., Washington, DC; CDL:133477-C)
- 117358 Shell Chemical Co. (19??) Compound SD 8447 Reproduction Study--Rats. (Unpublished study received on unknown date under unknown admin. no.; CDL:133477-D)
- 117359 Hunter, C.; Brown, V.; Ferrigan, L. (1965) Demyelination Studies

- with the Insecticide SD 8447: Tox 8/65. (Unpublished study received on unknown date under unknown admin. no.; prepared by Shell Research, Ltd., Eng., submitted by Shell Chemical Co., Washington, DC; CDL:133477-F)
- 117360 Whetstone, R.; Phillips, D.; Sun, Y.; et al. (1965) 2-Chloro-1-(2, 4,5-trichlorophenyl) Vinyl Dimethyl Phosphate: A New Safe Insecticide. (Presented at the 149th Meeting of the American Chemical Society; Apr 4-9, 1965, Detroit, MI; unpublished study received on unknown date under unknown admin. no.; prepared in cooperation with Stanford Research Institute, submitted by Shell Chemical Co., Washington, DC; CDL:133477-G)
- 117361 Shell Chemical Co. (1975) Rabon Oral Larvicide Self-fed Supplement:Label Application. (Compilation; unpublished study received Jul 22, 1975 under 201-392; CDL:220992-A)
- 117362 Hine Laboratories, Inc. (19??) Eye Irritation Test of Ravap Insecticide Emulsible. (Unpublished study received Feb 11, 1976 under 201-225; submitted by Shell Chemical Co., Washington, DC; CDL:222926-A)
- 117364 Hartz Mountain Corp. (1976) Chemistry of Hartz 2 in 1 Tick & Flea Collar. (Compilation; unpublished study received Feb 20, 1976 under 2596-62; CDL:223245-A)
- 117365 Hartz Mountain Corp. (1975) Data in Support of Label Applications for Hartz 2 in 1 Tick and Flea Collar for Dogs and Cats: Summary of Efficacy Studies|. (Unpublished study received Feb 20, 1976 under 2596-62; CDL:223245-B)
- 117366 Hartz Mountain Corp. (19??) Summary: Hartz 2 in 1 Collar--Toxicology. (Unpublished study received Feb 20, 1976 under 2596-62; CDL:223245-C)
- 117367 Sweeny, W. (1975) Effect of Anthelmintics and a Phenothiazine Tranquilizer in Cats Repetively Exposed to Stirofos Pet Collars: Submitter IC 14-76 A3. (Unpublished study received Feb 20, 1976 under 2596-62; prepared by Hazleton Research Animals, submitted by Hartz Mountain Corp., Harrison, NJ; CDL:223251-C)
- 117368 Stearns, S.; Albert, J. (19??) Determination of the Effects in the Dog following a Forced Feeding of a 10% Stirofos Flea Collar: TIR-72-023-73. (Unpublished study received Feb 20, 1976 under 2596-62; prepared by Shell Development Co., submitted by Hartz Mountain Corp., Harrison, NJ; CDL:223252-B)

- 117369 Stearns, S.; Albert, J. (1972) Drug Interaction Potential of Several Drugs and Treatments in Dogs Fitted with the 10% Stirofos Flea Collar: TIR-72-013-73. (Unpublished study received Feb 20, 1976 under 2596-62; prepared by Shell Development Co., submitted by Hartz Mountain Corp., Harrison, NJ; CDL:223252-E)
- 117370 Albert, J. (1972) Effect of the 10% Stirofos Flea Collar on Reproductive Capacity of the Bitch Dog: TIR-72-022-73. (Unpublished study received Feb 20, 1976 under 2596-62; prepared by Shell Development Co., submitted by Hartz Mountain Corp., Harrison, NJ; CDL:223252-K)
- 117371 Hartz Mountain Corp. (1976) Hartz 2 in 1 Tick & Flea Collar: Chemical Study. (Compilation; unpublished study received Feb 20, 1976 under 2596-63; CDL:223253-A)
- 117372 Albert, J.; Llamas, J. (1976) Physiological Measures Obtained in a Long-term Repetitive Exposure Study of an Experimental SD 8447 Pet Collar in the Dog: TIR 74-027-76. (Unpublished study received Jul 7, 1976 under 2596-63; prepared by Shell Chemical Co., submitted by Hartz Mountain Corp., Harrison, NJ; CDL:223259-B)
- 117373 Shell Chemical Co. (1970) Efficacy of Gardona. (Compilation; unpublished study received Feb 6, 1976 under 201-225; CDL: 223349-A)
- 117375 Shell Chemical Co. (1976) Rabon Insecticide Tick and Flea Collars: General Chemistry. (Compilation; unpublished study received Jan 21, 1976 under 201-345; CDL:223774-A)
- 117376 V.M.S., Inc. (1976) Stability of Rabon Oral Larvacide in V.M.S., Inc. Mineral Products. (Unpublished study received Mar 4, 1976 under 10461-7; CDL:223924-A)
- 117377 V.M.S., Inc. (1975) Vitamin-mineral Supplements: Efficacy on Cattle. (Compilation; unpublished study received Mar 4, 1976 under 10461-7; CDL:223924-B)
- 117378 V.M.S., Inc. (1975) Vitamin-mineral Supplements: Efficacy on Cattle. (Compilation; unpublished study received Mar 4, 1976 under 10461-8; CDL:223925-B)
- 117379 Shell Chemical Co. (1974) Study: Rabon Efficacy--Cattle|. (Compilation; unpublished study received Jul 22, 1975 under 201-392; CDL:220993-C)
- 117380 Sharp, J.; Young, R. (19??) Determination of the SD 8447

- Maximum No Effect Dose in Cattle: TIR-70-019-72.
(Unpublished study received Jul 22, 1975 under 201-392;
submitted by Shell Chemical Co., Washington, DC;
CDL:220993-F)
- 117381 Rossi, R. (1974) The Stability of Rabon Oral Larvicide in Staley Sweetlix 3-in-1 Mineral Block: TIR-40-005-75. (Unpublished study received Sep 16, 1975 under 8450-11; prepared by Shell Oil Co., submitted by A.E. Staley Mfg. Co., Decatur, IL; CDL: 224018-A)
- 117382 A.E. Staley Mfg. Co. (1975) Summary of Consumption Data on the Non-medicated Feed Product: Sweetlix 3-in-1 Mineral Block. (Unpublished study received Sep 16, 1975 under 8450-11; CDL: 224018-B)
- 117383 Leslie Salt Co. (1975) Efficacy of Rabon on Cattle|. (Compilation; unpublished study received Dec 30, 1975 under 7762-13; CDL:224151-A)
- 117384 Hartz Mountain Corp. (1976) Chemical Stability of Hartz 2 in 1 Tick & Flea Collar. Rev. (Unpublished study received Jul 27, 1976 under 2596-62; CDL:225446-A)
- 117385 Hazleton Laboratories (1975) Rabon Flea Collar: Toxicity to Dogs. (Unpublished study received Jul 7, 1976 under 2596-62; submitted by Hartz Mountain Corp., Harrison, NJ; CDL:225447-A)
- 117386 Schwartzman, R. (1976) To Evaluate Cholinesterase Depression in Dogs by 14.5% Rabon Insecticide Flea Collars Submitted by the Hartz Mountain Corporation. (Unpublished study received Jul 27, 1976 under 2596-62; prepared by Univ. of Pennsylvania, School of Veterinary Medicine, submitted by Hartz Mountain Corp., Harrison, NJ; CDL:225448-A)
- 117387 Zaret, E. (1976) To Evaluate Cholinesterase Depression in Dogs by 14.5% Rabon Insecticide Flea Collars. (Unpublished study received Jul 27, 1976 under 2596-62; submitted by Hartz Mountain Corp., Harrison, NJ; CDL:225448-B)
- 117388 Shell Chemical Co. (1976) Rabon Insecticide Ear Tag: Registration Application: Chemistry|. (Compilation; unpublished study received Mar 30, 1979 under 201-407; CDL:237920-A)
- 117389 Shell Chemical Co. (1978) Rabon: Residues in Tissue, Milk, and Fat of Cattle. (Compilation; unpublished study received Mar 30,

1979 under 201-407; CDL:237924-A)

- 117443 U.S. National Institutes of Health (1978) Bioassay of tetrachlorvinphos for possible carcinogenicity. By National Cancer Institute, Div. of Cancer Cause and Prevention, Carcinogenesis Program, Carcinogen Bioassay and Program Resources Branch. Bethesda, MD: USNIH. (NCI-CG-TR-33; CAS No. 961-11-5; DHEW publication no. (NIH)78-833; published study; CDL:238926-A)
- 117733 Sweeny, W. (1975) Determination of Irritant Effects in the Cat following Repeated Exposure to Stirofos Pet Collar: Submitter| IC 14-76 A1. (Unpublished study received Feb 20, 1976 under 2596-62; prepared by Hazleton Laboratories Corp., submitted by Hartz Mountain Corp., Harrison, NJ; CDL:223251-D)
- 118264 Shell Chemical Co. (1966?) Toxicity of Gardona and Carbaryl to Shrimp, Coho Salmon, and Phytoplankton. (Unpublished study received May 12, 1973 under unknown admin. no.; CDL:128376-A)
- 118265 Shell Oil Co. (1975) Residue Data in Support of the Use of Rabon Insecticide Cattle Ear Tags. (Compilation; unpublished study received Apr 12, 1979 under TN 79/1; CDL:238024-B)
- 118266 Levenstein, I. (1979) Acute Dermal in Rabbits--CFR 16: 1500.3 (c) (2)(iii): Fourteen Day Observation: δWhite Powder #2846|: Assay No. 93848. (Unpublished study received Jun 25, 1979 under 2596-78; prepared by Leberco Laboratories, submitted by Hartz Mountain Corp., Harrison, NJ; CDL:238664-A)
- 118267 Levenstein, I. (1979) Toxicity of White Powder #2846 to Rats|: Assay No. 93849. (Unpublished study received Jun 25, 1979 under 2596-78; prepared by Leberco Laboratories, submitted by Hartz Mountain Corp., Harrison, NJ; CDL:238664-B)
- 118268 Levenstein, I. (1979) To Determine the Degree of Irritation the Material May Produce When Applied to the Clipped Intact and Abraded Skin of Rabbits, Employing the Reference Method Described: White Powder #2846|: Assay No. 93847. (Unpublished study received Jun 25, 1979 under 2596-78; prepared by Leberco Laboratories, submitted by Hartz Mountain Corp., Harrison, NJ; CDL:238664-C)
- 118269 Levenstein, I. (1979) To Determine If the Test Material Produces Any Irritation When Instilled into Rabbits' Eyes Employing the Reference Method Described: White Powder #2846|: Assay No. 93846. (Unpublished study received Jun 25, 1979 under 2596-78; prepared by Leberco Laboratories, submitted by Hartz

Mountain Corp., Harrison, NJ; CDL:238664-D)

- 118270 Nebraska (1978) Summary of the Efficacy When Using Rabon Insecticide Cattle Ear Tags for the Control of Various Flies and Ticks of Cattle--1975-1978. (Compilation; unpublished study received Aug 10, 1979 under NB 79/11; CDL:238946-A)
- 118745 Shell Chemical Co. (1973) Study: Efficacy of Shell Super Fly Bait and Other Baits to Flies. (Compilation; unpublished study received Oct 18, 1973 under 201-362; CDL:008842-A)
- 118958 Ralston Purina Co. (1982) Efficacy of Sup-R-Lix Fly Larvicide. (Compilation; unpublished study received May 20, 1982 under 602-265; CDL:247531-A)
- 119145 Shellenberger, T.; Newell, G. (1962) Letter sent to R. Whetstone dated Oct 29, 1962 SD 8447: Two-week range finding study|: B-868-9. (Unpublished study received on unknown date under unknown admin. no.; prepared by Stanford Research Institute, submitted by Shell Chemical Co., Washington, DC; CDL:133477-B)
- 120056 Shell Chemical Co. (1967) Performance Data To Support a Label Application for the Use of Shell Gardona Insecticide on Apple for the Control of Major Fruit Pests. (Compilation; unpublished study received May 23, 1967 under 8G0665; CDL:091167-A)
- 120106 Shell Chemical Co. (1970) Performance Data To Support the Use of Rabon Insecticide in the Control of Certain Ectoparasites on Swine. (Compilation; unpublished study received Nov 17, 1970 under 1F1121; CDL:090896-A)
- 120107 Shell Chemical Co. (1968) The Results of Tests on the Amount of Residues Remaining, Including a Description of the Analytical Method: óRabon|. (Compilation; unpublished study received Nov 17, 1970 under 1F1121; CDL:090896-B)
- 120147 Shell Chemical Co. (1967) Determination of Gardona Residues in Various Products. (Compilation; unpublished study received Jun 12, 1968 under 9F0739; CDL:091275-A)
- 120199 Walker, A.; Hunter, C. (1968) The Toxicity of the alpha Isomer of the Halophenyl Vinyl Phosphate Insecticide Gardona: 13 Week Oral Experiment in Rats: Group Research Report TLGR.0022.68. (Unpublished study received Apr 27, 1969 under 9F0804; prepared by Shell Research Ltd., Eng., submitted by Shell Chemical Co., Washington, DC; CDL:091388-A)
- 120200 Shell Chemical Co. (1968) The Residue Data Developed from Test

Plots Including a Description of the Analytical Methods Used: Gardona Insecticide|. (Compilation; unpublished study received Apr 27, 1969 under 9F0804; CDL:091388-B)

- 120204 Shell Chemical Co. (1969) Determination of Residues of SD 8447 and Rabon in Goats and Poultry. (Compilation; unpublished study received Apr 27, 1969 under 9F0804; CDL:091387-A)
- 120205 Shell Chemical Co. (1968) The Results of Tests on the Amount of Residues Remaining, Including a Description of the Analytical Methods Used: Rabon. (Compilation; unpublished study received Apr 26, 1969 under 9F0805; CDL:091389-A)
- 120206 Shell Chemical Co. (1969) The Results of Tests on the Amount of Residues Remaining, Including a Description of the Analytical Methods Used: Rabon. (Compilation; unpublished study received Apr 26, 1969 under 9F0805; CDL:091390-A)
- 120224 Sherman, M. (1964) Acute, Subacute and Chronic Toxicology Data on Rabon Insecticide to Chickens. (Unpublished study received Oct 4, 1969 under 9F0835; prepared by Univ. of Hawaii, submitted by Shell Chemical Co., Washington, DC; CDL:091439-B)
- 120225 Yadava, C. (1969) An Investigation of the Toxicology and Residues of Rabon in Poultry. Doctoral dissertation, Univ. of Massachusetts. (Unpublished study received Oct 4, 1969 under 9F0835; submitted by Shell Chemical Co., Washington, DC; CDL:091439-C)
- 120226 Shell Oil Co. (1966) Residues of SD 8447 in Goats and Chickens. (Unpublished study received Oct 4, 1969 under 9F0835; CDL:091439-E) 120227 Shell Chemical Co. (1969) The Results of the Amount of Residues Remaining, Including a Description of the Analytical Method: Rabon. (Compilation; unpublished study received Oct 4, 1969 under 9F0835; CDL:091439-G)
- 120228 Shell Chemical Co. (1969) Toxicology Section: Rabon. (Unpublished study received Oct 5, 1969 under 9F0835; CDL:091440-A)
- 120229 Shell Chemical Co. (1969) Rabon Insecticide on Poultry. (Unpublished study received Oct 5, 1969 under 9F0835; CDL:091440-B)
- 120231 Shell Chemical Co. (1969) The Results of Tests on the Amount of Residues Remaining, Including a Description of the Analytical Methods Used: Gardona Insecticide. (Compilation; unpublished study received Oct 23, 1969 under 9G0850; CDL:091471-A)

- 120232 Shell Chemical Co. (1968) Reports on Gardona Insecticide. (Compilation; unpublished study received Oct 23, 1969 under 9G0850; CDL:091471-B)
- 124850 Albert, J. (1969) Long-term Repeat Exposure of Dogs to 10% Stirofos Flea Collars: TIR-72-012-73. (Unpublished study received Aug 31, 1982 under 2596-50; submitted by Hartz Mountain Corp., Harrison, NJ; CDL:248226-A)
- 124851 Gower, E. (1972) Letter sent to R. Young dated Dec 1, 1972: Efficacy of pet collars containing SD8447. (Unpublished study received Aug 31, 1982 under 2596-50; prepared by Shell Development Co., submitted by Hartz Mountain Corp., Harrison, NJ; CDL: 248226-B)
- 124925 Sontag, J. (1977) Minutes: Sixth Meeting of the Data Evaluation/ Risk Assessment Subgroup of the Clearinghouse on Environmental Carcinogens; November 28, 1977, Bethesda, MD: Pre-RPAR Review Submission #11. (Unpublished study received Feb 1, 1978 under 1471-35; submitted by Elanco Products Co., Div. of Eli Lilly and Co., Indianapolis, IN; CDL:233231-A)
- 126039 Hazleton Laboratories America, Inc. (1980) 103-week Chronic Feeding Study in Mice: SD-8447 and Original SD-8447. Final rept. (Unpublished study received Jul 31, 1980 under unknown admin.no.; submitted by Shell Chemical Co., Washington, DC; CDL:242976-A; 242977)
- 126379 Drill, V.; Friess, S.; Hays, H.; et al. (1982) Retrospective Audit of the Bioassay of Chloramben for Possible Carcinogenicity. (Unpublished study received Mar 15, 1983 under 264-305; prepared by Drill, Friess, Hays, Loomis & Shaffer, Inc., submitted by Union Carbide Agricultural Products Co., Inc., Research Triangle Park, NC; CDL:249707-A)
- 127831 Laveglia, J.; Killeen, J.; Ignatoski, J. (1982) A Teratology Study in Rabbits with DS-36779: Document No. 572-5TX-82-0007-003. (Unpublished study received Apr 13, 1983 under unknown admin. no.; submitted by Diamond Shamrock Agricultural Chemicals, Cleveland, OH; CDL:249988-A)
- 128171 Young, R. (1983) Hartz Test 81-7: The Efficacy of an Experimental Dog Collar in vivo as a Controlling Mechanism against Brown Dog Ticks (*Rhipicephalus sanguineus*), the American Dog Tick (*Dermacentor variabilis*) and the Common Cat Flea (*Ctenocephalides felis*). (Unpublished study received Apr 26, 1983 under 2596-84; submitted by Hartz Mountain Corp., Harrison, NJ; CDL:250034-A)

- 128251 Sharp, M. (1982) Cholinesterase and Serum Profile Testing of the Combined Use of a Collar and a Repellent on Dogs. (Unpublished study received Apr 27, 1983 under 2596-100; prepared by Sharp Veterinary Research, submitted by Hartz Mountain Corp., Harrison, NJ; CDL:250082-G)
- 130705 Ralston Purina Co. (1969) Residue Data Developed from the Use of Dairy Cattle. (Compilation; unpublished study received Jun 17, 1983 under 602-301; CDL:251028-A)
- 131122 Zaret, E. (1976) To Evaluate Cholinesterase Depression in Dogs by 14.5% Rabon Insecticide Flea Collars. (Unpublished study received Mar 25, 1983 under 2596-50; submitted by Hartz Mountain Corp., Harrison, NJ; CDL:249798-B)
- 131123 Stearns, S.; Albert, J. (1972) Drug Interaction Potential of Several Drugs and Treatments in Dogs Fitted with the 10% Stirofos Flea Collar: TIR-72-013-73. (Unpublished study received Mar 25, 1983 under 2596-50; submitted by Hartz Mountain Co., Harrison, NJ; CDL:249798-C)
- 131124 Albert, J. (19??) Evaluation of the Potential for Interaction of the 10% Stirofos Flea Collar with an Ultrashort-Acting Barbiturate Anesthetic (Thiamyl Na, Surital) with and without Premedication with a Phenothiazine Tranquilizer (Acetylpromazine, Acepromazine): TIR-72-018-73. (Unpublished study received Mar 25, 1983 under 2596-50; submitted by Hartz Mountain Co., Harrison, NJ; CDL:249798-D)
- 132711 Johansen, C. (1972) Toxicity of field-weathered insecticide residues to four kinds of bees. *Environmental Entomology* 1(3):393-394. (Also In unpublished submission received Nov 2, 1983 under 239-2507; submitted by Chevron Chemical Co., Richmond, CA; CDL: 251760-C)
- 133145 Shell Chemical Co. (1973) Performance Data To Support the Use of 3% Rabon Insecticide Dust for the Control of Lice on Cattle. (Compilation; unpublished study received Aug 30, 1973 under 201-319; CDL:008691-A)
- 133411 Post D. (1983) Adverse Reaction to Hartz Mtn. Flea & Tick Collar: EPA Reg # 2596-62. (Unpublished study received Nov 25, 1983 under 2596-62; submitted by Hartz Mountain Corp., Harrison, NJ; CDL:251920-A)
- 133412 Schwartzman, R. (1976) Laboratory Test Report: Cholinesterase

- Depression in Dogs by 14.5% Rabon Insecticide Flea Collars. (Un-published study received Nov 25, 1983 under 2596-62; prepared by Univ. of Pennsylvania, School of Veterinary Medicine, submitted by Hartz Mountain Corp., Harrison, NJ; CDL:251920-C)
- 133413 Zaret, E. (1976) Hartz Laboratory Test Report: Cholinesterase Depression in Dogs by 14.5% Rabon Insecticide Flea Collars. (Unpublished study received Nov 25, 1983 under 2596-62; submitted by Hartz Mountain Corp., Harrison, NJ; CDL:251920-D)
- 133414 Shell Development Co. (1976) Effect of Exposure to Rabon Insecticide Pet Collars on Dog Blood Cholinesterase: Project No. 74-61756.00. (Unpublished study received Nov 25, 1983 under 2596-62; submitted by Hartz Mountain Corp., Harrison, NJ; CDL:251920-E)
- 133415 Albert, J. (1972) Effect of the 10% Stirofos Flea Collar on Reproductive Capacity of the Bitch Dog: TIR-72-022-73. (Unpublished study received Nov 25, 1983 under 2596-62; prepared by Laboratory Research Enterprises, submitted by Hartz Mountain Corp., Harrison, NJ; CDL:251920-F)
- 133416 D'Ver, A. (1983) Effects of the Use of an SD-8447 Collar on Puppies (Hartz Protocol #83-1): White Eagle Study No. 137. Interim rept. (Unpublished study received Nov 25, 1983 under 2596-62; prepared by White Eagle Laboratories, Inc., submitted by Hartz Mountain Corp., Harrison, NJ; CDL:251920-G)
- 133912 Shell Chemical Co. (1973) Study--Chemical: Rabon and Gardona Insecticides. (Compilation; unpublished study received Dec 20, 1974, under 4H5047; CDL:223244-A)
- 133913 Shell Chemical Co. (1973) Summary--Residues: Toxicity of SD 8447 in Cattle and Other Mammals. (Compilation; unpublished study received Dec 20, 1974 under 4H5047; CDL:223244-B)
- 133914 Shell Chemical Co. (1972) Efficacy in Cattle: Stirofos as Fly Insecticide. (Unpublished study received Dec 20, 1974 under 4H5047; CDL:223244-C)
- 133915 Shell Chemical Co. (1967) Safety in Cattle: Rabon Insecticide. (Unpublished study received Dec 20, 1974 under 4H5047; CDL: 223244-D)
- 133916 Shell Chemical Co. (19??) Safety in Domestic Animals: Stirofos. (Unpublished study received Dec 20, 1974 under 4H5047; CDL: 223244-E)

- 133917 Shell Chemical Co. (19??) Safety in Laboratory Animals: Toxicity of Stirofos. (Unpublished study received Dec 20, 1974 under 4H5047; CDL:223244-F)
- 133918 Shell Chemical Co. (19??) Safety to Wildlife: Toxicity of Stirofos on Wild Bird and Fish Species. (Unpublished study received Dec 20, 1974 under 4H5047; CDL:223244-G)
- 133919 Shell Chemical Co. (19??) Safety in Humans: Toxicity of Stirofos. (Unpublished study received Dec 20, 1974 under 4H5047; CDL: 223244-H)
- 133920 Shell Chemical Co. (1973) Environmental Impact Analysis Report: Stirofos. (Unpublished study received Dec 20, 1974 under 4H5047; CDL:223244-I)
- 137637 Ralston Purina Co. (1984) Chemistry of Rabon. (Compilation; unpublished study received Feb 23, 1984 under 602-301; CDL: 252484-A)
- 138026 Shell Chemical Company (1973) Summary. (Unpublished study received Apr 9, 1973 under 201-345; CDL:008408-K)
- 138931 Moulton, R. (1984) Eye Irritation Test in Rabbits: (Purina Residual Livestock Insecticide): S. A. No. 355874. (Unpublished study received Jan 31, 1984 under 602-301; prepared by Scientific Assoc., Inc., submitted by Ralston Purina Co., St. Louis, MO; CDL: 252343-A)
- 138932 Hazleton Raltech, Inc. (1983) Acute Dermal Toxicity--Method, Summary, Pathology: Raw Data Attached: Purina Residual Livestock Insecticide: RT Lab No. 800081. (Unpublished study received Jan 31, 1984 under 602-301; submitted by Ralston Purina Co., St. Louis, MO; CDL:252343-B)
- 138933 Coate, W.; Zoetis, T.; Hardy, R. (1983) Acute Inhalation Toxicity Study in Rats: Ralston Purina Residual Livestock Insecticide: Project No. 2200-105. Final rept. (Unpublished study received Jan 31, 1984 under 602-301; prepared by Hazleton Laboratories America, Inc., submitted by Ralston Purina Co., St. Louis, MO; CDL:252343-C)
- 138934 Chevron Chemical Co. (1983) Chemistry of Ortho Liquid Sevin Spray. (Compilation; unpublished study received Jan 30, 1984 under 239-2506; CDL:252346-A)
- 138936 Shugart, J.; Tremayne, B. (1983) Miscellaneous Clinical Studies: Toxicity of Purina Residual Livestock Spray: S. R. Project 21: Experiment #279. Final rept. (Unpublished study received Jan

- 31, 1984 under 602-301; submitted by Ralston Purina Co., St. Louis, MO; CDL:252343-D)
- 138937 Shugart, J.; Williams, B.; Harfst, L. (1982) Miscellaneous Clinical Studies: Toxicity of Liquid Residual Livestock Insecticide: S. R. Project 21: Experiment #279. (Unpublished study received Jan 31, 1984 under 602-301; submitted by Ralston Purina Co., St. Louis, MO; CDL:252343-E)
- 138939 Shugart, J.; Tremayne, B.; Williams, B. (1982) Miscellaneous Clinical Experiments: Toxicity of Purina Residual Livestock Insecticide V190P21: S. R. Project 21: Experiment #273. Final rept. (Unpublished study received Jan 31, 1984 under 602-301; submitted by Ralston Purina Co., St. Louis, MO; CDL:252343-F)
- 139002 Young, R. (1982) The Activity on Dogs of an Experimental Pet Dust When Used against the Mange Mite (*Sarcoptes scabiei*, Var. *Canis*) under Laboratory Conditions of Artificial Infection. (Unpublished study received Nov 22, 1983 under 2596-79; submitted by Hartz Mountain Corp., Harrison, NJ; CDL:252397-A)
- 139846 Goble, G.J.; Eisenlord, G.H. (1972) Acute Toxicity Studies of Horse Gel Insecticide/Repellent in Experimental Animals: Hine Lab Report No. 22. (Unpublished study received Jan 26, 1973 under 201-340; prepared by Hine Laboratories, Inc., submitted by Shell Chemical Co., Washington, D.C.; CDL:001043-A)
- 139847 Shell Chemical Company (1971) Performance: Tabular Summary: Horse Gel Insecticide/Repellent. (Reports by various sources; unpublished study including data found in 001042-C, received Jan 26, 1973 under 201-340; submitted by Shell Chemical Co., Washington, D.C.; CDL:001043-B)
- 139848 Shell Chemical Company (1972) Summary: Rabon~(R) μ . Summary of studies 001042-B and 001042-C. (Unpublished study received Jan 26, 1973 under 201-339; CDL:001042-A)
- 139849 Goble, G.J.; Eisenlord, G.H. (1972) Acute Toxicity Studies of Horse Wipe-on or Spray in Experimental Animals: Hine Lab Report No. 15. (Unpublished study received Jan 26, 1973 under 201-339; prepared by Hine Laboratories, Inc., submitted by Shell Chemical Co., Washington, D.C.; CDL:001042-B)
- 139850 Shell Chemical Company (1971) Performance: Tabular Summary: Horse Wipe-on or Spray Insecticide/Repellent. (Reports by various sources; unpublished study including data found in 001043-B, received Jan 26, 1973 under 201-339; CDL:001042-C)

- 140387 Shell Chemical Co. (1969) Residue Data from the Pesticide Chemical: Gardona Insecticide. (Compilation; unpublished study received Jan 20, 1971 under 1F1023; CDL:091074-A)
- 140388 Shell Chemical Co. (1971) Summary of Information Relative to Residue Data Involved in the Certification of Usefulness of the Gardona Insecticide Label. (Compilation; unpublished study received Mar 17, 1971 under 1F1023; CDL:091076-A)
- 144037 Madison, W. (1984) Dermal Sensitization Study in Guinea Pigs: Closed Patch Technique:RT Lab NO. 856633. Unpublished study prepared by Hazleton Laboratories America, Inc. 18 p.
- 145278 D'Ver, A. (1984) Effects of the Use of an SD-8447 Collar on Puppies Final Report: Study No. 137. Unpublished study prepared by White Eagle Laboratories, Inc. 7 p.
- 147555 D'ver, A. (1984) Effects of the Use of an SD-8447 Collar on Puppies: Study No. 137: Final Report. Unpublished study prepared by White Eagle Laboratories, Inc. 46 p.
- 149077 Sonenshine, D. (1984) Evaluation and Pesticidal Efficacy of Three A.H. Robins Experimental Flea Collars against Fleas and Ticks on Dogs as Compared with Two Commercially Available Collars and a Control Group: Report No. 84-0562. Unpublished study prepared by A.H. Robins Co. 70 p.
- 150715 Rothstein, E. (1985) Acute Inhalation Toxicity in Rats of Sample #7212: Final Report: Assay No. 52317. Unpublished study prepared by Leberco Testing Inc. 27 p.
- 155415 Shults, S.; Wilson, N.; Killeen, J.; et al. (1984) Acute Dermal Toxicity (LD50) Study in Albino Rabbits with Ravap E.C.: DS-63463. Unpublished study prepared by SDS Biotech Corp. and SISA Toxicological Labs. 80 p.
- 155416 Shults, S.; Wilson, N.; Killeen, J.; et al. (1985) Acute (Four-Hour) Inhalation Toxicity (LC50) Study in Rats with Ravap E.C.: SDS-63463. Unpublished study prepared by SDS Biotech Corp. and Huntingdon Research Centre plc. 86 p.
- 155927 Cunningham, J. (1982) Final Report on Five Insecticidal Dips for Flea and Tick Control on Dogs: Test # BWD 182. Unpublished study prepared by AgResearch Consultants, Inc. 50 p.
- 156840 Young, R. (1986) Efficacy of a Rabon (Stirofos) Powder for Control of Fleas (*Ctenocephalides felis*) and Ticks (*Rhipicephalus sanguineus*) on Dogs: Final Report. Unpublished study prepared by

Young Veterinary Research. 35 p.

- 158718 Miller, R.; Pickens, L. (1973) Feeding of Coumaphos, Ronnel, and Rabon to dairy cows: Larvicidal activity against house flies and effect on insect fauna and biodegradation of fecal pats. *J. of Economic Entomology* 66(5):1077-1079.
- 160378 Health Industries Research Center (1983) S.R. Project 21--Miscellaneous Clinical Experiments: Primary Skin Irritation and Acute LD50: Purina Liquid Residual Livestock Insecticide: S.R. Project 21. Unpublished compilation. 52 p.
- 162267 Rothstein, E. (1982) Letter sent to Hartz Mountain Corp. dated Dec 21, 1982: Rat inhalation study: 2-Chloro-1-(2,4,5-tri-chlorophenyl)vinyl dimethyl phosphate: Assay No. 28068. Prepared by Leberco Laboratories. 2 p.
- 162268 Rothstein, E. (1982) Letter sent to Hartz Mountain Corp. dated Dec 12, 1982: Rat inhalation: assay: Assay Number 28069. Prepared by Leberco Laboratories. 2 p.
- 165197 Duerden, B.; Bleiberg, M. (1967) Gardona Insecticide - Acute Oral Toxicity to Rats. Unpublished study prepared by Woodard Research Corp. *Safety in Laboratory Animals*, Ref.3, Vol. 8.8. 5 p.
- 165198 Jorgenson, T. (1971) The Oral Toxicity (LD50) to Rats and Acute Percutaneous LD50 to Rabbits of Gardona Insecticide Code 10-19-128-1 (3 Lb/Gal): Report No. 55; SRI Project LSC-868-1. Unpublished study prepared by Stanford Research Institute. 5 p.
- 165199 Brown, V. (1966) An Attempted Study of the Efficiency of Oxime and Atropine Therapy for SD 8447 Intoxification in Guinea-pigs: Interim Research Report IRR TL/31/66; Project No. TA.2.3. Unpublished study prepared by Shell Research Ltd. Tunstall Laboratory. 8 p.
- 165200 Shellenberger, T. (1962) In vitro Enzyme Inhibition by SD 8447 and SD 8448; The Effect of Percutaneous Applications of SD 8447 and SD 8448 on Blood Cholinesterase in Rabbits: Ref. PB-3104; Rept. No.17. Unpublished study prepared by Stanford Research Institute. 10 p.
- 165201 Brown, V. (1966) A Comparison of the Anti-acetylcholinesterase Activities of SD8447 and Malathion When Administered Percutaneously to Guinea-pigs: Interim Research Report IRR TL/32/66 Project No/ TA.2.3. Part A/1. Unpublished study prepared by Shell Research Ltd., Tunstall Laboratory. 17 p.
- 5000711 Gahan, J.B.; Smith, C.N.; Glancey, B.M. (1966) Resistance in

Florida and countermeasures involving chemicals. Mosquito News
26(3):330-337.

- 5003875 Gentile, A.G.; Gallagher, K.J.; Santner, Z. (1971) Effect of some formulated insecticides on pollen germination in tomato and petunia. *Journal of Economic Entomology* 64(4):916-919.
- 5006630 Oehler, D.D.; Eschle, J.L.; Miller, J.A.; Claborn, H.V.; Ivey, M.C. (1969) Residues in milk resulting from ultra-low-volume sprays of malathion, methoxychlor, coumaphos, ronnel, or Gardona for control of the horn fly. *Journal of Economic Entomology* 62(6):1481-1483.
- 5008720 Rodell, S.; Funke, B.R.; Schulz, J.T. (1977) Effects of insecticides on acetylene reduction by *Azotobacter vinelandii* and soybean nodules. *Plant and Soil* 47(2):375-381.
- 5009346 Croft, B.A.; Stewart, P.G. (1973) Toxicity of one carbamate and six organophosphorus insecticides to O-P resistant strains of *Typhlodromus occidentalis* and *Amblyseius fallacis*. *Environmental Entomology* 2(3):486-488.
- 5009819 Tomlin, A.D. (1975) The toxicity of insecticides by contact and soil treatment to two species of ground beetles (Coleoptera: Carabidae). *Canadian Entomologist* 107(5):529-532.
- 5014547 Ahmed, N.U.; Kuitert, L.C. (1976) Phytotoxicity of five organophosphorous insecticides on some ornamental plants. *Phytoprotection* 57(2):62-65.
- 5020178 Karg, W. (1978) Untersuchungen zur Selektivitaet von Pflanzenschutzmitteln im Hinblick auf nuetzliche, Spinnmilben vertilgende Raubmilben im Obstbau Investigations on the selectivity of plant protection chemicals with regard to beneficial predatory mites destroying spider mites in orchards *Archiv fuer Phytopathologie und Pflanzenschutz* 14(1):41-55.
- 40136000 Hartz Mountain Corp. (1987) Acute Inhalation Toxicity in Rats Addendum Dated Mar 12, 1987 for Hartz 2 in 1 Powder for Dogs. Transmittal of 1 study.
- 40136001 Platt, C. (1987) Acute Inhalation Toxicity in Rats: Addendum ...: Hartz 2 in 1 Powder for Dogs. Unpublished study prepared by Leberco Testing Inc. 13 p.
- 40152700 E.I. du Pont de Nemours & Co. (1987) Submission of Toxicity

Study in Support of Application for Registration of Rabon Insecticide. Transmittal of 1 study.

- 40152701 Ford, W.; Killeen, J. (1987) A Teratology Study in Rats with Technical Rabon: Project ID: 1019-003; 85-0074. Unpublished study prepared by Ricerca, Inc. in cooperation with Argus Research Laboratories, Inc. and Test Substance Analytic Laboratory. 298 p.
- 40225700 A. H. Robins Co. (1987) Submission of Efficacy Data in Support of Conditional Label Claim for Sergeant's Dual Action Flea & Tick Collar for Dogs. Transmittal of 1 study.
- 40225701 Sonenshine, D. (1986) Evaluation of the Efficacy of A. H. Robin Experimental Flea Collars for Control of Fleas and Ticks on Dogs. Unpublished study prepared by Environmental Consultants, Inc. 38 p.
- 40242100 Purina Mill's Inc. (1987) Submission of Product Chemistry Data for Purina Rabon Dust. Transmittal of 1 study.
- 40242101 Shugart, J. (1987) Product Chemistry Data--Product Assay Method, Assay Report, and Stability Testing Protocol for Purina Rabon Dust... Phosphate. Unpublished study prepared by Purina Mill's. 5 p.
- 40433600 Hartz Mountain Corp. (1987) Submission of Toxicological Data in Response to the Requested Label Changes for the Product, Hartz 2 in 1 Plus Long Lasting Collar for Dogs. Transmittal of 1 study.
- 40433601 D'ver, A.; Perlberg, W. (1987) Cheolinergic Effects of the Use of a Tetrachlorvinphos Collar on the Bitch Dog and Its Offspring: Study Identification WEL 156. Unpublished study prepared by White Eagle Laboratories, Inc. 1,304 p.
- 40491300 E.I. du Pont de Nemours & Co. (1988) Submission of Chemistry Data in Support of Rabon. Transmittal of 1 study.
- 40491301 Sheeran, P. (1987) Rabon Product Chemistry: Du Pont Report #8447/PC-1. Unpublished compilation prepared by E.I. du Pont de Nemours & Co. 68 p.
- 40530100 Published study received from the RD PM for addition to the Tetrachlorvinphos Registration Standard. (Contains 1 published study).

- 40530101 Beynon, K.; Edwards, M.; Wright, A. (1970) Residues of tetrachlorvinphos and its breakdown products on treated crops. Pesticide Science 1(Nov-Dec):250-265.
- 40701900 Hartz Mountain Corp. (1988) Toxicity Data submitted to support the Registration of Hartz 2 in 1 Dip for Dogs and Cats. Transmittal of 5 studies.
- 40701901 Rothstein, E. (1985) Acute Oral Toxicity: Hartz 2 in 1 Dip for Dogs and Cats: Study No. 7403. Unpublished study prepared by Leberco Testing, Inc. 7 p.
- 40701902 Rothstein, E. (1985) Primary Eye Irritation: (Hartz 2 in 1 Dip for Dogs and Cats): Study No. 7403. Unpublished study prepared by Leberco Testing, Inc. 18 p.
- 40701903 Rothstein, E. (1985) Acute Dermal Toxicity: (Hartz 2 in 1 Dip for Dogs and Cats): Study No. 7403. Unpublished study prepared by Leberco Testing, Inc. 16 p.
- 40701904 Rothstein, E. (1985) Primary Dermal Irritation: Hartz 2 in 1 Dip for Dogs and Cats: Study No. 7403. Unpublished study prepared by Leberco Testing, Inc. 9 p.
- 40701905 Rothstein, E. (1985) Delayed Contact Hypersensitivity: Hartz 2 in 1 Dip for Dogs and Cats: Study No. 7403. Unpublished study prepared by Leberco Testing, Inc. 21 p.
- 40797700 Hartz Mountain Corp. (1988) Submission of Toxicological Data to Support the Continued Registration of the Hartz 2 in 1 Plus Long Lasting Collar for Dogs. Transmittal of 1 study.
- 40797701 D'Ver, A.; Perlberg, W. (1988) Cholinergic Effects of the Use of a Tetrachlorvinphos Collar on the Bitch Dog and Its Offspring: Addendum: Study ID WEL 156. Unpublished study prepared by White Eagle Laboratories, Inc. 26 p.
- 40812900 Elite Chemical Corp. (1988) Submission of Chemistry Data in Support of Elite 3% Rabon Powder. Transmittal of 1 study.
- 40812901 Adams, R. (1988) Volume 2. End-use Product Chemistry: Elite 3% Rabon Powder. Unpublished study prepared by Elite Chemical Corp. 12 p.
- 40924700 E. I. du Pont de Nemours & Co., Inc. (1988) Submission of Chemistry Data in Support of Data Call-in on Gardona (Tetrachlorvinphos). Transmittal of 1 study.
- 40924701 Keeler, D. (1988) Determination of

2,3,7,8-Tetrachloro-p-dibenzo-dioxin and
2,3,7,8-Tetrachlorodibenzofuran in Technical Tetrachlorvinphos:
Laboratory Project ID: Y2033.A. Unpublished study
prepared by Triangle Laboratories, Inc. 177 p.

- 40931700 A. H. Robins Co. (1988) Submission of Chemistry, Toxicity and Efficacy Data in Support of Sergeant's Flea and Tick Killer and Coat Conditioning Spray. Transmittal of 9 studies.
- 40931709 Boyd, J. (1988) Residual Effectiveness of Select Pesticidal Sprays against Fleas and Ticks on Cats and Clinical Observations of the Cats Prior to and after Treatment: P.A.C.E. No. 10-88-097-0488. Unpublished study prepared by P.A.C.E. International. 257 p.
- 40933300 Studies Submitted Prior to PR Notice 86-5 but Never Previously Added to PDMS. Transmittal of 5 studies.
- 40933302 Shell Chemical Co. (1973) Environmental Impact Analysis Report Volume VI: Stirofos Feed Additive. Unpublished compilation. 115 p.
- 41034600 Fermenta Animal Health Co./Scientific Research Asso., Inc. (1989) Submission of Degradation Data to Support the Tetrachlorvinphos Registration Standard. Transmittal of 1 study.
- 41034601 Akhtar, M. (1977) Degradation of tetrachlorvinphos and its major metabolite 2,4,5-trichlorophenacyl chloride in aqueous media. J. Agric. Food Chem. 25(4):848-851.
- 41117400 Fermenta Animal Health Co. (1989) Submission of Product Chemistry Data in Support of Tetrachlorvinphos Registration Standard. Transmittal of 4 studies.
- 41117401 Shoup, R. (1989) Rabon Oral Larvicide Manufacturing Base: Product Identity and Composition. Unpublished study prepared by Fermenta Animal Health Co. 16 p.
- 41117402 Shoup, R. (1989) Rabon Oral Larvicide Manufacturing Base: Physical and Chemical Characteristics. Unpublished study prepared by Fermenta Animal Health Company. 5 p.
- 41117403 Shoup, R. (1989) 75% Rabon Insecticide Wettable Powder: Product Identity and Composition. Unpublished study prepared by Fermenta Animal Health Co. 16 p.
- 41117404 Shoup, R. (1989) 75% Rabon Insecticide Wettable Powder: Physical and Chemical Characteristics. Unpublished study prepared by Fermenta Animal Health Co. 5 p.

- 41222500 Du Pont de Nemours and Co. (1989) Submission of Chemistry and Toxicity Data in Support of Reregistration of Rabon Insecticide. Transmittal of 8 studies.
- 41222501 Silveira, E. (1989) Technical Rabon Insecticide: Product Identity and Composition: Project ID Y2033.C. Unpublished study prepared Du Pont de Nemours and Co. 97 p.
- 41222502 Silveira, E. (1989) Technical Rabon Insecticide: Analysis and Certification of Product Ingredients: Project ID Y2033.D. Unpublished study prepared by Du Pont de Nemours and Co. 40 p.
- 41222503 Silveira, E. (1989) Technical Rabon Insecticide: Physical and Chemical Characteristics: Project ID Y2033.B. Unpublished study prepared by Du Pont de Nemours and Co. 65 p.
- 41222504 Naas, D. (1989) Acute Oral Toxicity (LD50) Study in Albino Rats with Rabon Technical: Project ID WIL-149001. Unpublished study prepared by WIL Research Laboratories, Inc. 69 p.
- 41222505 Naas, D. (1989) Acute Dermal Toxicity (LD50) Study in Albino Rabbits with Rabon Technical: Project ID WIL-149002. Unpublished study prepared by WIL Research Laboratories, Inc. 25 p.
- 41222506 Naas, D. (1989) Primary Eye Irritation Study in Albino Rabbits with Rabon Technical: Project ID WIL-149004. Unpublished study prepared by WIL Research Laboratories, Inc. 24 p.
- 41222507 Naas, D. (1989) Primary Dermal Irritation Study in Albino Rabbits with Rabon Technical: Project ID WIL-149003. Unpublished study prepared by WIL Research Laboratories, Inc. 21 p.
- 41222508 Lawlor, T.; Valentine, D. (1989) Mutagenicity Test On Tetrachlorvinphos (TCVP); Rabon in the Ames Salmonella?microsome Reverse Mutation Assay: HLA Study No. 10913-0-401R. Unpublished study prepared by Hazleton Laboratories America, Inc. 35 p.
- 41223600 FAH Co. (1989) Submission of Data To Support Registration of Tetrachlorvinphos: Toxicology Studies. Transmittal of 5 studies.
- 41223601 Wedig, J. (1989) Acute Oral Toxicity Evaluation of 75% Rabon Insecticide Wetable Powder in Rats: Project ID: 378A-101-010-89. Unpublished study prepared by T.P.S, Inc. 42 p.

- 41223602 Wedig, J. (1989) Acute Dermal Toxicity Evaluation of 75% Rabon Insecticide Wettable Powder in Rats: Project ID: 378C-102-210-89. Unpublished study prepared by T.P.S., Inc. 23 p.
- 41223603 Wedig, J. (1989) Primary Ocular Irritation Evaluation of 75% Rabon Insecticide Wettable Powder in Rabbits: Project ID: 378E/302-912-89. Unpublished study prepared by T.P.S., Inc. 28 p.
- 41223604 Wedig, J. (1989) Evaluation of 75% Rabon Insecticide Wettable Powder for Primary Dermal Irritation in Rabbits: Project ID: 378D-301-211-89. Unpublished study prepared by T.P.S., Inc. 27 p.
- 41223605 Wedig, J. (1989) Evaluation of the Dermal Sensitization Potential of 75% Rabon Insecticide Wettable Powder in Guinea Pigs: Project ID: 378B-201-215-89. Unpublished study prepared by T.P.S., Inc. 36 p.
- 41257100 E. I. du Pont Nemours & Co. (1989) Submission of Aquatic Toxicity Data in Support of Reregistration of Tetrachlorvinphos. Transmittal of 2 studies.
- 41257101 Forbis, A. (1989) Acute Toxicity of Rabon to *Daphnia magna*: Final Report No. 38116. Unpublished study prepared by Analytical BioChemistry Laboratories, Inc. 176 p.
- 41257102 Bussard, J. (1989) Method Validation for the Analysis of Rabon in Aquatic Test Water: ABC Final Report No. 38117. Unpublished study prepared by Analytical Bio-Chemistry Laboratories. 90 p.
- 41276100 Purina Mill's, Inc. (1989) Submission of Product Chemistry Data to Support the a Me Too Product Registration. Transmittal of 1 study.
- 41276101 Diesel, D. (1989) Product Chemistry Data: Contains 12,5% Tetrachlorvinphos: 2-Chloro-1-(2,4,5-trichlorophenyl) Vinyl Dimethyl Phosphate. Unpublished study prepared by Purina Mills, Inc. 8 p.
- 41312900 E.I. du Pont de Nemours & Co., Inc. (1989) Submission of Mutagenicity Data in Support of Reregistration of Products Containing Tetrachlorvinphos. Transmittal of 1 study.
- 41312901 Murli, H. (1989) Mutagenicity Test on Tetrachlorvinphos (TCVP) in an in vitro Cytogenetic Assay Measuring Chromosomal

- Aberration Frequencies in Chinese Hamster Ovary (CHO) Cells:
Lab Project Number: 10913/0/437. Unpublished study prepared
by Hazleton Laboratories America, Inc. 31 p.
- 41314000 Fermenta Animal Health Co. (1989) Submission in support of
registration of Rabon Oral Larvicide Manufacturing Base and
Rabon Insecticide Wettable Powder: Product chemistry.
Transmittal of 2 studies.
- 41314001 Shoup, R. (1989) Rabon Oral Larvicide Manufacturing Base:
Analysis and Certification of Product Ingredients: Method No.
PMS 701/88. Unpublished study prepared by Fermenta Animal
Health Co. 33 p.
- 41314002 Shoup, R. (1989) 75% Rabon Insecticide Wettable Powder:
Analysis and Certification of Product Ingredients: Method Number
PMS-644/82. Unpublished study prepared by Fermenta Animal
Health Co. 37 p.
- 41342000 E.I. du Pont de Nemours & Co., Inc. (1989) Submission of Data to
Support Reregistration of Tetrachlorvinphos: Toxicology Studies.
Transmittal of 2 studies.
- 41342001 Naas, D. (1989) 21-Day Dermal Study in Rats with Rabon
Technical: Final Report: Lab Project Number WIL-149007.
Unpublished study prepared by WIL Research Laboratories, Inc.
277 p.
- 41342002 Cifone, M. (1989) Final Report: Mutagenicity Test on
Tetrachlorvinphos in the Rat Primary Hepatocyte Unscheduled
DNA Synthesis Assay: Lab Project Number: 10913-0-447.
Unpublished study prepared by Hazleton Laboratories America,
Inc. 28 p.
- 41371600 Purina Mill's, Inc. (1990) Submission of Product Chemistry Data
to
Support the Registration of Purina Rabon Dust. Transmittal of
1 study.
- 41371601 Diesel, D. (1989) Contains 3.00% Tetrachlorvinphos:
2-Chloro-1-(2, 4,5-trichlorophenyl)vinyl Dimethyl Phosphate:
Product Chemistry Data: Lab Project ID PURINA RABON DUST.
Unpublished study prepared by Purina Mills, Inc. 3 p.
- 41377900 E.I. du Pont de Nemours & Co. (1990) Submission of Data To
Support Tetrachlorvinphos Reregistration Standard: Toxicology
Study. Transmittal of 1 study.

- 41377901 Reilly, C. (1989) Delayed Contact Hypersensitivity in Guinea Pigs:
Hartz Mountain Corporation Sample No. 8813 & 8814: Lab Project Number: Assay # 896984. Unpublished study prepared by Leberco Testing, Inc. 33 p.
- 41377902 Naas, D. (1989) Skin Sensitization Study in Albino Guinea Pigs with Rabon Technical: Lab Project Number: WIL-149005. Unpublished study prepared by Wil Research Laboratories, Inc. 48 p.
- 41405700 Dupont Agricultural Products (1990) Submission of Toxicological Data to Support the Tetrachlorvinphos Reregistration Standard. Transmittal of 1 study.
- 41405701 Chaisson, C. (1990) An Evaluation of the Sensitization Potential of Tetrachlorvinphos. Unpublished study prepared by Technical Assessment Systems, Inc. 13 p.
- 41408000 Fermenta Animal Health Co. (1990) Submission of Storage Stability Data for 75% Rabon Insecticide Wettable Powder in Support of Tetrachlorvinphos Registration Standard. Transmittal of 1 study.
- 41408001 Hanna, G. (1990) 75% Rabon Insecticide Wettable Powder: Storage Stability Data. Unpublished study prepared by Fermenta Animal Health Co. 12 p.
- 41530700 The Hartz Mountain Corp. (1990) Submission of Efficacy Data in Support of Label Amendment for Hartz 2 in 1 Flea and Tick Powder (for Cats and for Dogs). Transmittal of 1 study.
- 41530701 Troeger, J. ; Goldman, K. (1990) Toxicity of the Hartz 2 in 1 Flea and Tick Powder to Deer Ticks (*Ixodes dammini*): Lab Project Number: RNB 984/3. Unpublished study prepared by The Hartz Mountain Corp. 12 p.
- 41532600 The Hartz Mountain Corp. (1990) Submission of Efficacy Data in Support of Label Amendment to include an efficacy claim versus Deerticks on Hartz 90 Day brand Collar for Cats. Transmittal of 3 studies.
- 41532601 Troeger, J.; Goldman, K. (1990) Toxicity of the Hartz/Longlife 90 Day Collar to Deer Ticks (*Ixodes dammini*): Lab Project Number: RNB 984/3. Unpublished study prepared by The Hartz Mountain Corporation. 17 p.
- 41532602 Sharp, M. (1990) Hartz Mountain Collar Study No. 89-10 (*Ixodes dammini*): Domestic Indoor Efficacy: Lab Project Number: 89-10.

- Unpublished study prepared by Sharp Veterinary Research. 23 p.
- 41532603 Troeger, J.; Goldman, K. (1990) Toxicity of the Hartz 2 in 1 Long-lasting Collar to Deerticks (*Ixodes dammini*): Lab Project Number: RNB 984/3. Unpublished study prepared by The Hartz Mountain Corp. 17 p.
- 41550200 Phoenix Co., Inc. (1990) Submission of Efficacy Data to Support the Registration of Safecide Brand IC with Rabon. Transmittal of 2 studies.
- 41550201 Jinks, T. (1990) Compilation of Product Chemistry Data for Safecide Brand IC with Rabon in Support of Guidelines for Series 61, 62 & 63. Unpublished study prepared by Phoenix Co., Inc. 5 p.
- 41550202 Willer, D. (1990) Efficacy of Two Combinations of Boric Acid and Babon in Killing Darkling Beetle Adults and Larvae. Unpublished study. 5 p.
- 41606600 E.I. du Pont de Nemours & Co. (1990) Submission of Data in Response to Request for Additional Information on Tetrachlorvinphos: Toxicology Study. Transmittal of 1 study.
- 41606601 Cifone, M. (1990) Mutagenicity Test on Tetrachlorvinphos in the Rat Primary Hepatocyte Unscheduled DNA Synthesis Assay: Revised Final Report: Lab Project Number: 10913-0-447. Unpublished study prepared by Hazleton Laboratories America, Inc. 30 p.
- 41681300 Fermenta Animal Health Co. (1990) Submission of Data To Support Tetrachlorvinphos Registration Standard: Environmental Fate Study. Transmittal of 1 study.
- 41681301 Blumhorst, M. (1990) Adsorption/Desorption Studies-Batch Equilibrium for Rabon: Lab Project Number: 149-001. Unpublished study prepared by EPL Bio-Analytical Services, Inc. 119 p.
- 41766600 Hartz Mountain Corp. (1991) Submission of Data To Support New Registration of Hartz 2 in 1 Flea & Tick Spray for Cats III: Product Chemistry Data. Transmittal of 1 study.
- 41766601 Perlberg, W. (1990) Product Chemistry Data Requirements: Hartz 2 in 1 Flea & Tick Spray for Dogs III and Cats III. Unpublished study prepared by The Hartz Mountain Corp. 6 p.

- 41778600 Hartz Mountain Corp. (1991) Submission of toxicity data to support the registration of Hartz 2 in 1 Flea & Tick Spray for Dogs and Cats III (rabon). Transmittal of 6 studies.
- 41778601 Barbera, J. (1990) Acute Oral Toxicity of Hartz Mountain Corp. Sample # 8951C Hartz 2 in 1 Flea & Tick Spray for Dogs and Cats: Lab Project Number 902433; Hartz 1080. Unpublished study prepared by Leberco Testing, Inc.
- 41778602 Barbera, J. (1990) Acute Dermal Toxicity of Hartz Mountain Corporation Sample # 8951C Hartz 2 in 1 Flea & Tick Spray for Dogs and Cats: Lab Project Number 902434; Hartz 1081. Unpublished study prepared by Leberco Testing, Inc. 17 p.
- 41778603 Reilly, C. (1990) Primary Eye Irritation, Hartz Mountain Sample # 8951A Hartz 2 in 1 Flea & Tick Spray for Dogs and Cats: Lab Project Number 902432; Hartz 1079. Unpublished study prepared by Leberco Testing, Inc. 28 p.
- 41778604 Reilly, C. (1990) Primary Dermal Irritation, Hartz Mountain Sample # 8951C Hartz 2 in 1 Flea & Tick Spray for Dogs and Cats: Lab Project Number: 902435: HARTZ 1082. Unpublished study prepared by Leberco Testing, Inc. 14 p.
- 41778605 Barbera, J. (1990) Acute Inhalation Toxicity Testing, Hartz Mountain Sample # 8951A Aerosol Hartz 2 in 1 Flea & Tick Spray for Dogs and Cats: Lab Project Number: 906045: HARTZ 1083. Unpublished study prepared by Leberco Testing, Inc. 49 p.
- 41778606 Barbera, J. (1990) Delayed Contact Hypersensitivity in Guinea Pigs Hartz Mountain Sample # 8951C Hartz 2 in 1 Flea & Tick Spray for Dogs and Cats: Lab Project Number: 902437; HARTZ 1084. Unpublished study prepared by Leberco Testing, Inc. 25 p.
- 41810100 The Hartz Mountain Corp. (1991) Submission of Data To Support the Conditional Registration of Hartz 2 in Dip for Dogs & Cats: Toxicology and Product Chemistry Studies. Transmittal of 3 studies.
- 41810101 Sharp, M. (1990) Domestic Animal Safety: Cholinesterase Test-Cats: Lab Project Number: 1077. Unpublished study prepared by Sharp Veterinary Research. 20 p.
- 41810102 Sharp, M. (1990) Domestic Animal Safety: Cholinesterase Test-Dogs: Lab Project Number: 1073. Unpublished study prepared by Sharp Veterinary Research. 19 p.
- 41810103 Perlberg, W. (1991) Manufacturing Procedure: Rabon Flea & Tick

Dip for Dogs & Cats. Unpublished study prepared by The Hartz Mountain Corp. 6 p.

- 41828000 E.I. du Pont de Nemours and Co. (1991) Submission of Toxicity Data in Response to the Requirements for Reregistration of Tetrachlorvinphos Oct. 1988, Specially Du Pont Rabon Insecticide, and the EPA Data Call-in of 21 Dec. 1984. transmittal of 1 Study.
- 41828001 Hoberman, A. (1991) Response to EPA Review of a Rat Teratology Study in Rats with Technical Rabon: Lab Project Number: Argus No. 1019-003; Ricerca No. 85-0074; Du Pont Report No. 1123-85-0074-TX-003: Supplement No. 1. Unpublished study prepared by Argus Research Laboratories, Inc., in cooperation with Ricerca, Inc. 214 p.
- 41862400 E.I. DuPont de Nemours & Co., Inc. (1991) Submission of Toxicology Data to Support the Registration Standard of Tetrachlorvinphos. Transmittal of 2 Studies
- 41862401 Hawkins, D.; Mayo, B.; Pollard, A.; et al. (1991) The Dermal Absorption of Carbon 14-Tetrachlorvinphos in the Rat: Lab Project Number: HRC/DPT 208/91102. Unpublished study prepared by Huntingdon Research Centre, Ltd. 85 p.
- 41905300 Dupont Agricultural Products (1991) Submission of oral LD/50 data in support of a registration standard for Rabon. Transmittal of 1 study.
- 41905301 Reilly, C. (1989) Oral LD/50 Testing of Hartz Mountain Corporation Samples # 8813 and 8814: Lab Project Number: 896982: 896983. Unpublished study prepared by Leberco Testing, Inc. 38 p.
- 41905900 E.I. du Pont de Nemours & Co., Inc. (1991) Submission of Toxicity Data in Support of a Registration Standard for Rabon. Transmittal of 1 Study.
- 41905901 Naas, D. (1990) Acute Delayed Neurotoxicity Study in Hens with Rabon Technical: Lab Project Number: WIL-149006. Unpublished study prepared by WIL Research Laboratories, Inc. 250 p.
- 41929100 FAH Co./SRA International, Inc. (1991) Submission of environmental fate data on Rabon in support of a registration standard for Tetrachlorvinphos. Transmittal of 1 study.
- 41929101 Blumhorst, M. (1991) Aqueous Hydrolysis of Rabon: Lab Project

- Number: 149-003. Unpublished study prepared by EPL Bio-Analytical Services, Inc. 88 p.
- 41967200 E.I. du Pont de Nemours and Co. (1991) Submission of toxicity data in support of registration of tetrachlorvinphos. Transmittal of 1 study.
- 41967201 Ford, W.; Kileen, J. (1991) Response to EPA Review of a Rat Teratology Study in Rats with Technical Rabon: Lab Project Number: 1123-85-0074-TX-003. Unpublished study prepared by Argus Research Labs, Inc. and Test Analysis. Lab 19 p.
- 41988400 E.I. du Pont de Nemours & Co. (1991) Submission of Data To Support Tetrachlorvinphos (Rabon) Registration Standard: Toxicology Study. Transmittal of 1 study.
- 41988401 Hawkin, D.; Mayo, B.; Pollard, A.; et al. (1991) Rat Metabolism of Orally Administered: carbon 14 Tetrachlorvinphos: Lab Project Number: 207-901645. Unpublished study prepared by Huntingdon Research Centre Ltd. 76 p.
- 41995600 Hartz Mountain Corp. (1991) Submission of Data To Support New Application for Registration of Hartz 2 in 1 Flea & Tick Pump for Dogs II: Product Chemistry and Efficacy Studies. Transmittal of 2 studies.
- 41995601 Perlberg, W. (1991) Product Chemistry Data Requirements: Hartz 2 in 1 Flea & Tick Pump for Dogs & Cats. Unpublished study prepared by Hartz Mountain Corp. 12 p.
- 41995602 Troeger, J.; Goldman, K. (1991) Toxicity of the Rabon Emulsion Pump BSC #1807 to Deer Ticks (*Ixodes dammini*): Lab Project Number: RNB 1135/34. Unpublished study prepared by Hartz Mountain Corp. 18 p.
- 42009500 E.I. du Pont de Nemours and Co. (1991) Submission of additional toxicity data in support of a Tetrachlorvinphos registration standard. Transmittal of 1 study.
- 42009501 Rothstein, E. (1989) Tetrachlorvinphos: Supplemental Data for the Evaluation of the Sensitization Potential of Technical Rabon. Unpublished study prepared by Technical Assessment Systems, Inc. 30 p.
- 42013000 E.I. du Pont de Nemours and Co. (1991) Submission of product chemistry data in support of reregistration of Rabon technical. Transmittal of 3 studies.
- 42013001 Silveira, E. (1991) Technical Rabon Insecticide: Product Identity

- and Composition: Lab Project Number: Y2033.C. Unpublished study prepared by E. I. du Pont de Nemours and Co. 20 p.
- 42013002 Silveira, E. (1991) Technical Rabon Insecticide: Analysis and Certification of Product Ingredients: Lab Project Number: Y2033.D. Unpublished study prepared by E.I. du Pont de Nemours and Co.10 p.
- 42013003 Silveira, E. (1991) Technical Rabon Insecticide: Physical and Chemical Properties: Lab Project Number: Y2033.B. Unpublished study prepared by E.I. du Pont de Nemours and Co. 11 p.
- 42054300 DuPont (1991) Submission of toxicity data in support of a registration standard for Tetrachlorvinphos (Rabon). Transmittal of 1 study.
- 42054301 Barton, S. (1991) Tetrachlorvinphos: Two Generation Reproduction Study in Rats: Lab Project Number: 438712. Unpublished study prepared by Inveresk Research International. 229 p.
- 42082400 Fermenta Animal Health Co. (1991) Submission of environmental fate data to support the registration standard for tetrachlorvinphos. Transmittal of 1 study.
- 42082401 Blumhorst, M. (1991) Aerobic Soil Metabolism Study of Rabon: Lab Project Number: 149-002. Unpublished study prepared by EPL Bio-Analytical Services, Inc. 190 p.
- 42111500 DuPont (1991) Submission of toxicity data in support of a registration standard for Tetrachlorvinphos. Transmittal of 1 study.
- 42111501 Hawkins, D.; Mayo, B.; Pollard, A.; et al. (1991) The Dermal Absorption of Carbon 14-Tetrachlorvinphos in the Rat: Lab Project Number: 208/91102. Unpublished study prepared by Huntingdon Research Centre Ltd. 85 p.
- 42156400 E.I. du Pont de Nemours & Co., Inc. (Agric. Products) (1992) Submission of Data To Support Tetrachlorvinphos (Rabon) Registration Standard: Toxicology Study. Transmittal of 1 study.
- 42156401 McKeon, M. (1992) Mutagenicity Test on Tetrachlorvinphos in the Rat Primary Hepatocyte Unscheduled DNA Synthesis Assay: Final Report: Lab Project Number: 10913-1-447. Unpublished study prepared by Hazleton Washington, Inc. 28 p.

- 42175200 Hartz Mountain Corp. (1992) Submission of letter, under the provisions of 6(a)(2) of FIFRA, concerning a judicial award to a consumer in Waterloo, Iowa who experienced illness after the application of Hartz 2 in 1 Flea and Tick Spray for Dogs. Transmittal of 1 study.
- 42175201 Perlberg, W. (1992) Letter Sent to Document Processing Desk, OPP, EPA, January 21, 1992: Letter regarding judicial award to a consumer who claimed illness due to use of Hartz 2 in 1 Flea and Tick Spray for Dogs. Prepared by Hartz Mountain Corp. 1 p.
- 42241300 Hartz Mountain Corp. (1992) Submission of Data To Support FIFRA Section 6(a)(2) Requirements for Hartz 2 in 1 Pesticide Products. Transmittal of 1 study.
- 42241301 Perlberg, W. (1992) Letter Sent to G. LaRocca and R. Mountfort dated March 11, 1992: Summarizing alleged adverse reports for period 10/1/91 through 12/31/91: Hartz 2 in 1 Pesticide Products. Prepared by Hartz Mountain Corp. 89 p.
- 42275200 Dupont Agricultural Products (1992) Submission of supplemental product chemistry data in support of reregistration of Rabon (Tetrachlorvinphos). Transmittal of 1 study.
- 42275201 Silveira, E. (1992) Technical Rabon Insecticide: Analysis and Certification of Product Ingredients: Lab Project Number: Y2033.D. Unpublished study prepared by E.I. du Pont de Nemours and Co., Inc. 6 p.
- 42371700 Hartz Mtn. Corp. (1992) Submission of efficacy and chemistry studies to support the registration of Hartz 2 in 1 Flea and Tick Pump for Dogs II and ...Cats II. Transmittal of 2 studies.
- 42371701 Goldman, K. (1992) Five-Minute Toxicity of Rabon Emulsion Pump Spray TS# 9902 to Cat Fleas (*Ctenocephalides felis*). Unpublished study prepared by Hartz Mtn. Corp. 13 p.
- 42371702 Perlberg, W. (1992) Manufacturing Procedure: (Hartz 2 in 1 Flea and Tick Pump for Dogs and Cats). Unpublished study prepared by Hartz Mtn. Corp. 6 p.
- 42371900 Hartz Mtn. Corp. (1992) Submission of product chemistry and toxicity data to support the registration of Hartz 2 in 1 Flea and Tick Spray for Cats III and...Spray for Dogs III (Rabon). Transmittal of 3 studies.
- 42371901 Rothstein, E. (1992) Addendum to: Acute Inhalation Toxicity Testing...Sample 8951A...Assay # 906045: Lab Project Number: 923509. Unpublished study prepared by Leberco Testing,

Inc. 10 p.

- 42371902 Cerven, D. (1992) Acute Dermal Toxicity in Rabbits/LD50 in Rabbits: Hartz Mtn. Sample 9788: Lab Project Number: MB 92-1369. Unpublished study prepared by MB Reserach Labs, Inc. 15 p.
- 42371903 Glass, R. (1992) Addendum To: Product Chemistry óHartz 2 in 1 Flea and Tick Spray for Dogs and...for Cats|. Unpublished study prepared by Hartz Mtn. Corp. 9 p.
- 42407800 E.I. Du Pont de Nemours and Co. (1992) Submission of product chemistry data to support the registrationo f Technical Rabon Insecticide. Transmittal of 1 study.
- 42407801 Silveira, E. (1992) Technical Rabon Insecticide: Physical and Chemical Characteristics: óSupplement No. 2|. Lab Project Number: Y2033. B. Unpublished study prepared by E. I. Du Pont de Nemours & Co. 9 p.
- 42520100 E.I. du Pont de Nemours & Co. (1992) Supplemental submission of toxicity data in support of the registration standard for Tetrachlorovinphos (Rabon). Transmittal of 1 study.
- 42520101 Hoberman, A. (1992) A Teratology Study in Rats with T-142-4: An Amendment: Lab Project Number: 1019-003. Unpublished study prepared by Argus Research Laboratories, Inc. 88 p.
- 42557900 E.I. DuPont de Nemours & Co., Inc. (1992) Submission of toxicity data in support of the registration standard for Tetrachlorvinphos (Rabon). Transmittal of 1 study.
- 42557901 Mulhern, M.; Robb, D.; Perry, C.; et al. (1991) Tetrachlorvinphos: 104 Week Dietary Combined Chronic Toxicity/Carinogenicity Study in Rats: Results after 52 Weeks: Lab Project Number: 438403: 7717. Unpublished study prepared by Inveresk Research International. 324 p.
- 42576000 The Hartz Mountain Corp. (1992) Submission of toxicity data in support of registration for Hartz 2 in 1 Dip for Dogs and Cats. Transmittal of 1 study.
- 42576001 Cerven, D. (1992) Acute Dermal Toxicity in Rabbits LD50 in Rabbits: Sample #9789: Lab Project Nos. 92-1370 B: 1204. Unpublished study prepared by MB Research Labs. Inc. 15 p.
- 42614100 Hartz Mountain Corp. (1993) Submission of efficacy data in support of registration for Hartz 2 in 1 Flea & Tick Spray and Pump. Transmittal of 4 studies.

- 42614101 Sharp, M. (1991) Hartz Mountain Repellent Study-Domestic Indoor Efficacy: Hartz 2 in 1 Flea & Tick Pump for Dogs II: Lab Project Number: HARTZ TEST NO. 1157. Unpublished study prepared by Sharp Veterinary Research. 15 p.
- 42614102 Sharp, M. (1992) Hartz Mountain Repellent Study-Domestic Indoor Efficacy: Hartz 2 in 1 Flea & Tick Pump for Cats II: Lab Project Number: HARTZ TEST NO. 1167. Unpublished study prepared by Sharp Veterinary Research. 16 p.
- 42614103 Neunteufel, E. (1992) In Vitro Repellency of BSC# 2038 to Cat Fleas (*Ctenocephalides felis*) and Brown Dog Ticks (*Rhipicephalus sanguineus*)-Domestic Indoor Efficacy: Hartz 2 in 1 Flea & Tick Pump for Cats II and for Dogs II: Lab Project Number: RNB 1226/2. Unpublished study prepared by The Hartz Mountain Corp. 20 p.
- 42614104 Neunteufel, E. (1992) In Vitro Repellency of BSC# 1617 to Cat Fleas (*Ctenocephalides felis*) and Brown Dog Ticks (*Rhipicephalus sanguineus*)-Domestic Indoor Efficacy: Hartz 2 in 1 Flea & Tick Spray for Dogs III and Cats III: Lab Project Number: RNB 1099/8. Unpublished study prepared by The Hartz Mountain Corp. 20 p.
- 42622300 Fermenta Animal Health Co. (1992) Submission of exposure data in support of the data call-in for Tetrachlorvinphos. Transmittal of 1 study.
- 42622301 Meikle, S.; Baugher, D. (1992) Monitoring Exposure of Mixer/Loaders and Applicators Treating Agricultural Premises with Tetrachlorvinphos (Rabon 50WP Insecticide) in Handheld Wand-type Sprayers: Lab Project Number: 31189: 562: 62-RAB/92099. Unpublished study prepared by Orius Associates, Inc. and PTRL East, Inc. 207 p.
- 42654700 DuPont (1993) Submission of product chemistry data in support of a special data call-in/request for waiver of data for Rabon (Tetrachlorvinphos). Transmittal of 1 study.
- 42654701 Hammer, C.; Glass, R.; Turk, A. (1993) An Evaluation of the Potential for the Presence of PCB and HCB in Technical Rabon: Lab Project Number: TAS-DUP-002. Unpublished study prepared by Technical Assessment Systems, Inc. 49 p.
- 42679200 DuPont (1993) Supplemental submission of product chemistry data in support of the Tetrachlorvinphos (Rabon) registration standard. Transmittal of 1 study.
- 42679201 Silveira, E. (1993) Technical Rabon Insecticide Analysis and

Certification of Product Ingredients: Supplement No. 3: Lab Project Number: Y2033.D. Unpublished study prepared by E.I. du Pont de Nemours and Co. 9 p.

- 42679400 Du Pont (1993) Submission of toxicity data in support of the Tetrachlorvinphos (Rabon) registration standard. Transmittal of 1 study.
- 42679401 Tompkins, E. (1993) One Year Oral (Capsule) Toxicity Study in Dogs with Rabon (Tetrachlorvinphos): Final Report: Lab Project Number: WIL-149009. Unpublished study prepared by WIL Research Labs., Inc. 1079 p.
- 42828800 Fermenta Animal Health Co. (1993) Submission of metabolism data in support of the DCI for tetrachlorvinphos. Transmittal of 3 studies.
- 42828801 Krautter, G. (1993) The Metabolism of (carbon 14)Tetrachlorvinphos in the Lactating Goat Following Oral Administration for 3 Consecutive Days: Lab Project Number: 542: 1508. Unpublished study prepared by PTRL East, Inc. 131 p.
- 42828802 Krautter, G. (1993) The Metabolism of (carbon 14)Tetrachlorvinphos in Laying Hens Following Dermal Application: Lab Project Number: 540: 1532. Unpublished study prepared by PTRL East, Inc. 166 p.
- 42828803 Krautter, G. (1993) The Metabolism of (carbon 14)Tetrachlorvinphos in the Lactating Goat Following Dermal Application: Lab Project Number: 541: 1531. Unpublished study prepared by PTRL East, Inc. 127 p.
- 42848500 Fermenta Animal Health Co. (1993) Submission of residue data in response to DCI for registration standard for tetrachlorvinphos. Transmittal of 1 study.
- 42848501 Krautter, G. (1993) The Dissipation of (carbon 14)Tetrachlorvinphos and Its Metabolites in Manure from a Beef Cow Following Oral Administration for 14 Consecutive Days: Lab Project Number: 710: 1520. Unpublished study prepared by PTRL East, Inc. 101 p.
- 42912500 Hartz Mountain Corp. (1993) Submission of Toxicity Data for (Rabon) Hexachlorobenzene and Pentachlorobenzene in Technical Tetrachlorvinphos in Support of Reregistration. Transmittal of 1 Study.
- 42912501 Lamb, I. (1993) An Acute Neurotoxicity Study of Rabon in Rats: Lab Project Number: WIL-149018. Unpublished study prepared

by Wil Research Labs., Inc. 1050 p.

- 42980900 E.I. du Pont de Nemours & Co., Inc. (1993) Submission of Toxicity Data for Tetrachlorvinphos (RABON) in Support of Registration Standard. Transmittal of 1 Study.
- 42980901 Mulhern, M.; Robb, D.; Perry, C.; et al. (1993) Tetrachlorvinphos: 104 Week Dietary Combined Chronic Toxicity/Carcinogenicity Study in Rats: Lab Project Number: 7929. Unpublished study prepared by Inveresk Research International. 1135 p.
- 42981000 Technical Assessment Systems, Inc. (1993) Submission of Toxicity Data for Tetrachlorvinphos (RABON) in Support of Registration. Transmittal of 1 Study.
- 42981001 Morris, T. (1993) Delayed Contact Hypersensitivity Study in Guinea Pigs with Technical RABON Insecticide (Buehler Technique): Lab Project Number: 93-8055-21 (A): 93-8055-21. Unpublished study prepared by Hill Top Biolabs, Inc. 86 p.
- 43010800 The Hartz Mountain Corp. (1993) Submission of Acute Toxicology Data in Support of Conditional Registration of 2-in-1 Flea & Tick Spray for Cats II and III, and 2-in-1 Flea & Tick Spray for Dogs II and III. Transmittal of 1 Study.
- 43010801 Hershman, R.; Hatzikyriakou, S. (1993) Acute Toxicity, Single Level, 4 Hour Exposure--Rats (of TS #10168, Rabon Containing Flea and Tick Spray): Lab Project Number: 1231: 93-7806A: AIT-200. Unpublished study prepared by Biosearch Inc. and Hartz Mountain Corp. 51 p.
- 43068100 The Hartz Mountain Corp. (1993) Submission of product chemistry data in support of "Me-Too" registration for Hartz 2 in 1 Flea and Tick Spray. Transmittal of 1 study.
- 43068101 Glass, R. (1991) Product Chemistry Data Requirements: (Hartz 2 in 1 Flea and Tick Spray for Cats and Dogs). Unpublished study prepared by Hartz Mountain Corp. 12 p.
- 43160600 The Hartz Mountain Corp. (1994) Submission of Product Chemistry Data for Rabon in Support of Registration. Transmittal of 2 studies.
- 43160601 McKeown, K. (1994) Analysis of Gardona Samples from an Alternate Manufacturing Source: Rabon: Lab Project Number: 1362/56: TM#0124-02. Unpublished study prepared by The

- Hartz Mountain Corp. 32 p.
- 43160602 McKeown, K. (1994) Du Pont Analysis of Alternate Source Rabon Samples: Lab Project Number: 9859: 9878. Unpublished study prepared by E.I. du Pont de Nemours & Co., Inc., Mobile Manufacturing Center. 9 p.
- 43290300 The Hartz Mountain Corp. (1994) Submission of efficacy data in support of registration of Hartz 2 in 1 Collars. Transmittal of 1 study.
- 43290301 Tyler, M. (1994) Weight Loss Study of Rabon Release from 2 in 1 Collars Prepared with Four Alternate Plasticizers: Lab Project Number: 699/3: 699/4: 699/20. Unpublished study prepared by The Hartz Mountain Corp. 12 p.
- 43294100 The Hartz Mountain Corp. and Fermenta Animal Health Co. (1994) Submission of toxicity data in support of data call-in for Tetrachlorvinphos. Transmittal of 1 study.
- 43294101 Lamb, I. (1994) A Subchronic (13-Week) Neurotoxicity Study of Rabon in Rats: Final Report: Lab Project Number: WIL/149019. Unpublished study prepared by WIL Research Lab., Inc. 1295 p.
- 43318500 Hartz Mountain Corp. (1994) Submission of Product Chemistry Data in Support of Registration Amendment for Hartz 2-in-1 Collar for Dogs. Transmittal of 1 Study.
- 43318501 Bieler, P. (1994) Letter sent to G. LaRocca dated July 19, 1994: Application for amendment: Hartz 2-in-1 Collar for Dogs: (removing inert ingredient from formulation). Prepared by Hartz Mountain Corp. 10 p.
- 43318600 Hartz Mountain Corp. (1994) Submission of Product Chemistry Data in Support of Registration Amendment for Hartz 2-in-1 Longlasting Collar for Dogs. Transmittal of 1 Study.
- 43318601 Bieler, P. (1994) Letter sent to G. LaRocca dated July 19, 1994: Hartz 2-in-1 Longlasting Collar for Dogs: Application for amendment (removing an inert ingredient from formulaton). Prepared by Hartz Mountain Corp. 10 p.
- 43318700 Hartz Mountain Corp. (1994) Submission of Product Chemistry Data in Support of Registration Amendment for Hartz 2-in-1 Plus Seven Month Collar for Dogs. Transmittal of 1 Study.
- 43318701 Bieler, P. (1994) Letter Sent to G. LaRocca dated July 19, 1994: Hartz 2-in-1 Plus Seven Month Collar for Dogs: Application for amendment (removing an inert from formulation).

Prepared by Hartz Mountain Corp. 10 p.

- 43318800 Hartz Mountain Corp. (1994) Submission of Product Chemistry Data in Support of Registration Amendment for Hartz 2-in-1 Plus Seven Month Collar for Cats. Transmittal of 1 Study.
- 43318801 Bieler, P. (1994) Letter Sent to G. LaRocca dated July 19, 1994: Hartz 2-in-1 Plus Seven Month Collar for Cats: Application for amendment (removing an inert ingredient from formulation). Prepared by Hartz Mountain Corp. 10 p.
- 43318900 Hartz Mountain Corp. (1994) Submission of Product Chemistry Data in Support of Registration Amendment for Hartz 2-in-1 Longlasting Collar for Cats. Transmittal of 1 Study.
- 43318901 Bieler, P. (1994) Letter Sent to G. LaRocca dated July 19, 1994: Hartz 2-in-1 Longlasting Collar for Cats: Application for amendment (removing an inert ingredient from formulation). Prepared by Hartz Mountain Corp. 10 p.
- 43319000 Hartz Mountain Corp. (1994) Submission of Product Chemistry Data in Support of Registration Amendment for Hartz 2-in-1 Collar for Cats. Transmittal of 1 Study.
- 43319001 Bieler, P. (1994) Letter Sent to G. LaRocca dated July 19, 1994: Hartz 2-in-1 Collar for Cats: Application for amendment (removing an inert ingredient from formulation). Prepared by Hartz Mountain Corp. 10 p.
- 43335100 Fermenta Animal Health Co. and The Hartz Mountain Corp. (1994) Submission of toxicity data in support of registration standard for Tetrachlorvinphos (TCVP). Transmittal of 3 studies.
- 43335101 Perry, J.; Millar, P.; Mulhern, M. (1994) Tetrachlorvinphos: 104 Week Dietary Combined Chronic Toxicity/Carcinogenicity Study in Rats: Addendum: Lab Project Number: 438403: 7929. Unpublished study prepared by Inveresk Research International. 38 p.
- 43335102 Katz, A.; Slesinski, R. (1994) Review of Dose Selection for a 104-Week Dietary Combined Chronic Toxicity/Carcinogenicity Study: Determination of the Maximum Tolerated Dose of Tetrachlorvinphos in Rats: Lab Project Number: TCVP/94/01. Unpublished study prepared by TAS, Inc. 17 p.
- 43335103 Katz, A.; Slesinski, R. (1994) Analysis of the Weight-of-Evidence for Proposed Carcinogenicity Classification of Tetrachlorvinphos: Lab Project Number: TCVP/94/02. Unpublished study prepared by TAS, Inc. 74 p.

- 43371200 Fermenta Animal Health and The Hartz Mountain Corp. (1994) Submission of supplemental toxicity data in support of registration standard for TCVP. Transmittal of 1 study.
- 43371201 Perry, C.; Mulhern, M.; Henderson, W. et al. (1990) Tetrachlorvinphos: 13 Week Dietary Toxicity Study in Rats: Lab Project Number: 7258: IRI/438141. Unpublished study prepared by Inveresk Research International. 194 p.
- 43497500 Hartz Mountain Corp. (1994) Submission of Efficacy Data in Support of the Registration of Product Hartz Rabon Collar Containing Methoprene. Transmittal of 2 Studies.
- 43497501 Hartz Mountain Corp. (1994) Collar IGR Efficacy Against Flea Reproduction on Cats: Lab Project Numbers: 93-10: 1260: 10344. Unpublished study. 15 p.
- 43497502 Hartz Mountain Corp. (1994) Collar IGR and Adulticide Efficacy Against Fleas on Cats: Lab Project Numbers: 1265: 94-4. Unpublished study. 29 p.
- 43596700 The Hartz Mountain Corp. (1995) Submittal of Product Chemistry Data in Support of Registration of Hartz Rabon Emulsion Spray with IGR for Dogs & Cats. Transmittal of 1 study.
- 43596701 Glass, R. (1995) Product Chemistry: Hartz Rabon Emulsion Spray with IGR for Dogs and Cats: Lab Project Number: TM #333-2. Unpublished study prepared by The Hartz Mountain Corp. 14 p.
- 43618500 Hartz Mountain Corp. (1995) Submission of Product Chemistry Data in Support of Application for Registration of Hartz Rabon Emulsion Aerosol Spray with IGR for Dogs and Cats. Transmittal of 1 Study.
- 43618501 Glass, R. (1995) Product Chemistry Data Requirements: Hartz Rabon Emulsion Aerosol Spray with IGR for Dogs and Cats. Unpublished study prepared by Hartz Mountain Corp. 14 p.
- 43663500 Fermenta Animal Health Co. (1995) Submission of Environmental Fate Data in Support of the Registration Standard of Tetrachlorvinphos. Transmittal of 1 Study.
- 43663501 Blumhorst, M. (1995) Aqueous Hydrolysis of Rabon: Supplement No. 1: Lab Project Number: 149-003. Unpublished study prepared by EPL Bio-Analytical Services, Inc. 70 p.
- 44187400 Fermenta Animal Health Co. and Hartz Mountain Corp. (1996) Submission of Toxicity Data in Support of the Reregistration of

TCVP. Transmittal of 1 Study.

- 44187401 Barton, S.; Finch, J. (1996) Histopathology Extension to Inveresk Project No. 438712 (Tetrachlorvinphos: Two Generation Reproduction Study in Rats): Lab Project Number: 14395: 438712: 252-055. Unpublished study prepared by Inveresk Research. 64 p.
- 44202700 Fermenta Animal Health (1997) Submission of Exposure/Risk Data in Support of the Tetrachlorvinphos RED. Transmittal of 2 Studies.
- 44202701 Moore, P. (1992) Monitoring Exposure of Workers Treating Agricultural Premises with Tetrachlorvinphos (RABON) Insecticide in Handheld Wand-Type Sprayers: Analysis of Pilot Study Samples: Lab Project Number: 562-SA: 1419. Unpublished study prepared by PTRL East, Inc. 38 p.
- 44202702 Moore, P. (1992) Monitoring Exposure of Workers Treating Agricultural Premises with Tetrachlorvinphos (RABON) Insecticide in Handheld Wand-Type Sprayers: Analysis of Field Study Samples: Lab Project Number: 562-FS: 1491. Unpublished study prepared by PTRL East, Inc. 152 p.
- 44225200 Hartz Mountain Corp. (1997) Submission of Toxicity Data in Support of the Application for Registration of Hartz Rabon Emulsion Spray with IGR. Transmittal of 2 Studies.
- 44225201 Hartz Mountain Corp. (1996) Domestic Animal Safety Study: Effect of a 4X Treatment on Dogs: Magnification of the Level of Actives and the Quantity of Treatment: (Hartz Rabon Emulsion Spray with IGR for Dogs and Cats): Lab Project Number: 96-1. Unpublished Study. 16 p.
- 44225202 Hartz Mountain Corp. (1996) Domestic Animal Safety Study: Effect of a 4X Treatment on Cats: Magnification of the Level of Actives and the Quantity of Treatment: (Hartz Rabon Emulsion Spray with IGR for Dogs and Cats): Lab Project Number: 96-1. Unpublished Study. 16 p.
- 44295200 The Hartz Mountain Corp. (1997) Submission of Product Chemistry and Toxicity Data in Support of the RED for Tetrachlorvinphos Containing Products Hartz 2 in 1 Flea & Tick Powders. Transmittal of 2 Studies.
- 44295201 Wnorowski, G. (1997) Dermal Sensitization Test--Buehler Method: Powder--Formulated Consumer Product, Hartz Test Sample #10878: Lab Project Number: 4992: P328. Unpublished study prepared by Product Safety Labs. 27 p.

- 44295202 Perlberg, W. (1997) Product Chemistry Data Requirements: (Hartz 2 in 1 Flea & Tick Powder): Lab Project Number: HARTZ 2 IN 1 FLEA & TICK POWDER: 0232-02. Unpublished study prepared by The Hartz Mountain Corp. 13 p.
- 44303600 Boehringer Ingelheim Animal Health, Inc. (1997) Submission of Product Chemistry Data in Support of the RED for Tetrachlorvinphos Containing Product Rabon Oral Larvicide. Transmittal of 2 Studies.
- 44303601 Vasquez, K. (1997) Rabon Oral Larvicide Manufacturing Base: Product Identity and Composition--Supplemental. Unpublished study prepared by Boehringer Ingelheim Animal Health, Inc. 16 p.
- 44303602 Vasquez, K. (1997) Rabon Oral Larvicide Manufacturing Base: Physical and Chemical Characteristics--Supplemental. Unpublished study prepared by Boehringer Ingelheim Animal Health, Inc. 5 p.
- 44310000 Boehringer Ingelheim Animal Health, Inc. (1997) Submission of Product Chemistry Data in Support of the Reregistration of the Tetrachlorvinphos Containing Product Technical Rabon Insecticide. Transmittal of 1 Study.
- 44310001 Vasquez, K. (1997) Technical Rabon Insecticide: Product Identity and Composition. Unpublished study prepared by Boehringer Ingelheim Animal Health, Inc. 37 p.
- 44318200 Vigortone Ag Products, Inc. (1997) Submission of Product Chemistry Data in Support of the Reregistration (RED) for Tetrachlorvinphos Containing Product Vigortone Bovotone FC "007" MG with Rabon Oral Larvicide. Transmittal of 1 Study.
- 44318201 Bomgarden, W. (1997) Product Chemistry Data: Vigortone Bovotone FC "007" MG with Rabon Oral Larvicide. Unpublished study prepared by Vigortone Ag Products, Inc. 5 p.
- 44318300 Vigortone Ag Products, Inc. (1997) Submission of Product Chemistry Data in Support of the Reregistration (RED) for Tetrachlorvinphos Containing Product Vigortone Bovotone FC "007" with Rabon Oral Larvicide. Transmittal of 1 Study.
- 44318301 Bomgarden, W. (1997) Product Chemistry Data: Vigortone Bovotone FC "007" with Rabon Oral Larvicide. Unpublished study prepared by Vigortone Ag Products, Inc. 5 p.
- 44318400 Vigortone Ag Products, Inc. (1997) Submission of Product Chemistry Data in Support of the RED for Tetrachlorvinphos.

Transmittal
of 1 Study.

- 44318401 Bomgarden, W. (1997) Product Chemistry Data: Vigortone Bovotone FC "008" with Rabon Oral Larvicide. Unpublished study prepared by Vigortone Ag Products, Inc. 5 p.
- 44318500 Vigortone Ag Products, Inc. (1997) Submission of Product Chemistry Data in Support of the Reregistration (RED) for Tetrachlorvinphos Containing Product Vigortone Rabon 7.76 Oral Larvicide Premix. Transmittal of 1 Study.
- 44318501 Bomgarden, W. (1997) Product Chemistry Data: Vigortone Rabon 7.76 Oral Larvicide Premix. Unpublished study prepared by Vigortone Ag Products, Inc. 5 p.
- 44330700 Boehringer Ingelheim Animal Health, Inc. (1997) Submission of Product Chemistry Data in Support of the Reregistration per RED for Tetrachlorvinphos Containing Product Technical Rabon Insecticide. Transmittal of 1 Study.
- 44330701 Vasquez, K. (1997) Technical Rabon Insecticide.....Analysis and Certifications of Product Limits: Lab Project Number: PQPC-196. Unpublished study prepared by Boehringer Ingelheim Animal Health, Inc. 72 p.
- 44330800 Boehringer Ingelheim Animal Health, Inc. (1997) Submission of Product Chemistry Data in Support of the Reregistration for Flea & Tick Powder for Dogs and Cats and RED for Tetrachlorvinphos. Transmittal of 1 Study.
- 44330801 Vasquez, K. (1997) Study for the Product Chemistry Evaluation of "Flea and Tick Powder for Dogs and Cats": Lab Project Number: B138S03: B138. Unpublished study prepared by Boehringer Ingelheim Animal Health, Inc. 18 p.
- 44342500 The Hartz Mountain Corp. (1997) Submission of Product Chemistry Data in Support of the RED for Tetrachlorvinphos (Hartz 2 in 1 Rabon Dip for Dogs and Cats). Transmittal of 1 Study.
- 44342501 Perlberg, W. (1997) Product Chemistry Data Requirements: Hartz Control Pet Care System Flea & Tick Dip for Dogs & Cats: Lab Project Number: HARTZ CONTROL PET CARE SYSTEM FLEA & TICK DIP FOR DOGS & CAT. Unpublished study prepared by The Hartz Mountain Corp. 13 p.
- 44351600 Platte Chemical Co. (1997) Submission of Product Chemistry Data

in Support of the RED for tetrachlorvinphos Containing Product Agri-Bon Aqua 50. Transmittal of 2 Studies.

- 44351601 Dunlap, J. (1997) Product Chemistry Data for Agri-Bon Aqua 50, A 50% Wettable Powder with Rabon: Lab Project Number: 97-01A. Unpublished study prepared by Platte Chemical Co. 11 p.
- 44351602 Irving, J. (1997) Agri-Bon Aqua 50, a 50% WP with Rabon: Chemical and Physical Properties: Lab Project Number: PLT-157. Unpublished study prepared by Dartec Inc. 43 p.
- 44355100 Platte Chemical Co. (1997) Submission of Product Chemistry Data in Support of the Reregistration of the Tetrachlorvinphos Containing Product RL-2 Rabon Livestock Dust. Transmittal of 2 Studies.
- 44355101 Dunlap III, J. (1997) Product Chemistry Data for RL-2 Rabon Livestock Dust: Lab Project Number: 97-02A. Unpublished study prepared by Platte Chemical Co. 11 p.
- 44355102 Irving, J. (1997) RL-2 Rabon Livestock Dust: Chemical and Physical Properties: Lab Project Number: PLT-156. Unpublished study prepared by Dartec Inc. 43 p.
- 44356400 Haco, Inc. (1997) Submission of Product Chemistry Data in Support of the RED of the Tetrachlorvinphos Containing Product Robert's Dust'M. Transmittal of 1 Study.
- 44356401 Dunlap III, J. (1997) Product Chemistry Data for Robert's Dust'M: Lab Project Number: 97-05A. Unpublished study prepared by Platte Chemical Co. 11 p.
- 44356500 Platte Chemical Co. (1997) Submission of Product Chemistry Data in Support of the RED for Tetrachlorvinphos Containing Product Clean Crop Livestock 1% Rabon Dust. Transmittal of 1 Study.
- 44356501 Dunlap III, J. (1997) Product Chemistry Data for Clean Crop Livestock 1% Rabon Dust: Lab Project Number: 97-04A. Unpublished study prepared by Platte Chemical Co. 11 p.
- 44356600 Platte Chemical Co. (1997) Submission of Product Chemistry Data in Support of the RED of the Tetrachlorvinphos Containing Products Clean Crop All Purpose Livestock and Poultry Dust with Rabon. Transmittal of 1 Study.
- 44356601 Dunlap III, J. (1997) Product Chemistry Data for Clean Crop All Purpose Livestock and Poultry Dust with Rabon: Lab Project Number: 97-03A. Unpublished study prepared by Platte Chemical Co. 11 p.

- 44357700 Boehringer Ingelheim Animal Health, Inc. (1997) Submission of Toxicity Data in Support of the Tetrachlorvinphos RED Batch #8 Products. Transmittal of 1 Study.
- 44357701 Wnorowski, G. (1997) Primary Eye Irritation (in Rabbits): Vigortone Bovotone FC "008" with Rabon Oral Larvicide: (Final Report): Lab Project Number: 5317: P324. Unpublished study prepared by Product Safety Labs. 21 p.
- 44358500 The Hartz Mountain Corp. (1997) Submission of Product Chemistry and Toxicity Data in Support of the RED for Tetrachlorvinphos Containing Products Hartz 2 in 1 Collar Formulations. Transmittal of 2 Studies.
- 44358501 Wnorowski, G. (1997) Dermal Sensitization Test--Buehler Method (in Guinea Pigs): Collar--Formulated Consumer Product, Hartz Test Sample #10838: (Final Report): Lab Project Number: 4929: P328. Unpublished study prepared by Product Safety Labs. 25 p.
- 44358502 Perlberg, W. (1997) Product Chemistry Data Requirements: Hartz Rabon Collars for Dogs and Cats: Lab Project Number: 0202-10. Unpublished study prepared by The Hartz Mountain Corp. 13 p.
- 44362800 Boehringer Ingelheim Animal Health, Inc. (1997) Submission of Product Chemistry and Toxicity Data in Support of the Reregistration of the Tetrachlorvinphos Containing Product Rabon 7.76 Oral Larvicide. Transmittal of 2 Studies.
- 44362801 Vasquez, K. (1997) Study for the Product Chemistry Evaluation of Rabon 7.76 Oral Larvicide Premix: Lab Project Number: B134S03: B134F03A.DOC: B134R03A. Unpublished study prepared by Boehringer Ingelheim Animal Health, Inc. 24 p.
- 44362802 Wnorowski, G. (1997) Primary Eye Irritation (in Rabbits): Fly Curb 7.76%: Lab Project Number: 5269: P324. Unpublished study prepared by Product Safety Labs. 21 p.
- 44362900 Boehringer Ingelheim Animal Health, Inc. (1997) Submission of Product Chemistry and Toxicity Data in Support of the RED of Tetrachlorvinphos and Reregistration for Rabon 3 Insecticide Dust. Transmittal of 2 Studies.
- 44362901 Vasquez, K. (1997) Study for the Product Chemistry Evaluation of Rabon 3 Insecticide Dust: Lab Project Number: B131S03: B131F03A.DOC-1: B131R03A. Unpublished study prepared by Boehringer Ingelheim Animal Health, Inc. 18 p.
- 44362902 Wnorowski, G. (1997) Primary Eye Irritation (in Rabbits): RL-2

- Rabon Livestock Dust: Lab Project Number: 5268: P324.
Unpublished study prepared by Product Safety Labs. 21 p.
- 44363000 Boehringer Ingelheim Animal Health, Inc. (1997) Submission of Product Chemistry and Toxicity Data in Support of the Reregistration of the Tetrachlorvinphos Containing Product Rabon EC Livestock, Poultry and Premise Insecticide. Transmittal of 6 Studies.
- 44363001 Vasquez, K. (1997) Study for the Product Chemistry Evaluation of Rabon EC Livestock, Poultry & Premise Insecticide: Lab Project Number: B132S03: B132F03A.DOC. Unpublished study prepared by Boehringer Ingelheim Animal Health, Inc. 20 p.
- 44363002 Wnorowski, G. (1997) Acute Oral Toxicity Test (in Rats): Residual Livestock: Lab Project Number: P320: 5275. Unpublished study prepared by Product Safety Labs. 20 p.
- 44363003 Wnorowski, G. (1997) Acute Dermal Toxicity Limit Test (in Rats): Residual Livestock: Lab Project Number: 5276: P322. Unpublished study prepared by Product Safety Labs. 15 p.
- 44363004 Wnorowski, G. (1997) Primary Eye Irritation (in Rabbits): Residual Livestock: Lab Project Number: 5277: P324. Unpublished study prepared by Product Safety Labs. 22 p.
- 44363005 Wnorowski, G. (1997) Primary Skin Irritation (in Rabbits): Residual Livestock: Lab Project Number: 5278: P326. Unpublished study prepared by Product Safety Labs. 16 p.
- 44363006 Wnorowski, G. (1997) Dermal Sensitization Test--Buehler Method (in Guinea Pigs): Residual Livestock: Lab Project Number: 5279: P328. Unpublished study prepared by Product Safety Labs. 23 p.
- 44363200 Boehringer Ingelheim Animal Health, Inc. (1997) Submission of Product Chemistry and Toxicity Data in Support of the Reregistration for Rabon 50 WP Insecticide and RED for Tetrachlorvinphos. Transmittal of 2 Studies.
- 44363201 Vasquez, K. (1997) Study for the Product Chemistry Evaluation of Rabon 50 WP Insecticide: Lab Project Number: B128S03: B128F03A.DOC: B128R03A. Unpublished study prepared by Boehringer Ingelheim Animal Health, Inc. 18 p.
- 44363202 Wnorowski, G. (1997) Primary Eye Irritation (in Rabbits): Rabon 50 WP Insecticide: Lab Project Number: 5267: P324. Unpublished study prepared by Product Safety Labs. 21 p.

- 44363300 Boehringer Ingelheim Animal Health, Inc. (1997) Submission of Product Chemistry Data in Support of Application for the Registration of Kennel and Yard Spray Concentrate. Transmittal of 1 Study.
- 44363301 Vasquez, K. (1997) Study for the Product Chemistry Evaluation of Kennel and Yard Spray Concentrate: Lab Project Number: B137S03. Unpublished study prepared by Boehringer Ingelheim Animal Health, Inc. 18 p.
- 44363600 Boehringer Ingelheim Animal Health, Inc. (1997) Submission of Product Chemistry and Toxicity Data in Support of the Reregistration for Ravap EC Livestock, Poultry & Premise Insecticide Spray and RED for Tetrachlorvinphos. Transmittal of 5 Studies.
- 44363601 Vasquez, K. (1997) Study for the Product Chemistry Evaluation of Ravap EC Livestock, Poultry & Premise Insecticide Spray: Lab Project Number: B136S03: B136F03A.DOC: B136. Unpublished study prepared by Boehringer Ingelheim Animal Health, Inc. 22 p.
- 44363602 Wnorowski, G. (1997) Acute Oral Toxicity Test (in Rats): Ravap E.C: Final Report: Lab Project Number: 5270: P320. Unpublished study prepared by Product Safety Labs. 20 p.
- 44363603 Wnorowski, G. (1997) Acute Dermal Toxicity Limit Test (in Rats): Ravap E.C.: (Final Report): Lab Project Number: 5271: P322. Unpublished study prepared by Product Safety Labs. 21 p.
- 44363604 Wnorowski, G. (1997) Acute Inhalation Toxicity Limit Test (in Rats): Ravap E.C.: (Final Report): Lab Project Number: 5274: P330. Unpublished study prepared by Product Safety Labs. 23 p.
- 44363605 Wnorowski, G. (1997) Primary Skin Irritation (in Rabbits): Ravap E.C.: (Final Report): Lab Project Number: 5273: P326. Unpublished study prepared by Product Safety Labs. 16 p.
- 44363700 Boehringer Ingelheim Animal Health, Inc. (1997) Submission of Product Chemistry Data in Support of the Reregistration for Tick and Flea Sponge-on for Dogs and Cats and RED for Tetrachlorvinphos. Transmittal of 1 Study.
- 44363701 Vasquez, K. (1997) Study for the Product Chemistry Evaluation of Tick and Flea Sponge-on for Dogs and Cats: Lab Project Number: B139S03: B139F03A.DOC: B139R03A. Unpublished study prepared by Boehringer Ingelheim Animal Health, Inc. 18 p.

- 44364100 Boehringer Ingelheim Animal Health, Inc. (1997) Submission of Toxicity Data in Support of the RED of the Tetrachlorvinphos Containing Products McNess Rabon 7.76 Oral Larvicide Premix. Transmittal of 1 Study.
- 44364101 Wnorowski, G. (1997) Primary Eye Irritation (in Rabbits): #1495 McNess Rabon 7.76 Oral Larvicide Premix: Lab Project Number: 5423: P324. Unpublished study prepared by Product Safety Labs. 21 p.
- 44365100 PM Ag Products, Inc. (1997) Submission of Product Chemistry Data in Support of the Reregistration for Sweelix Fly Control Rabon Mineral/Vitamin Molasses Block, Sweetlix R.O.L. Rabon Molasses Block, Sweetlix 16:8 Free Choice Mineral with Rabon Oral Larvicide, VMS Rabon 7.76 Oral Larvicide Premix, VMS Pest-A-Side Block with Rabon and Enproal Fly Control with Rabon Oral Larvicide and RED for Tetrachlorvinphos. Transmittal of 1 Study.
- 44365101 Bomgarden, W. (1997) Product Chemistry Data: Enproal Fly Control Block with Rabon Oral Larvicide. Unpublished study prepared by PM Ag Products, Inc. 5 p.
- 44367600 PM Ag Products, Inc. (1997) Submission of Product Chemistry Data in Support of the RED Tetrachlorvinphos Contained in Sweetlix Fly Control Rabon Mineral/Vitamin Molasses Block. Transmittal of 1 Study.
- 44367601 Bomgarden, W. (1997) Product Chemistry Data: Sweetlix Fly Control Rabon Mineral/Vitamin Molasses Block. Unpublished study prepared by PM Ag Products, Inc. 5 p.
- 44367700 PM Ag Products, Inc. (1997) Submission of Product Chemistry Data in Support of the Reregistration of the Tetrachlorvinphos Containing Product Sweetlix R.O.L. Rabon Molasses Block. Transmittal of 1 Study.
- 44367701 Bomgarden, W. (1997) Product Chemistry Data: Sweetlix R.O.L. Rabon Molasses Block. Unpublished study prepared by PM Ag Products, Inc. 5 p.
- 44367800 PM Ag Product Inc. (1997) Submission of Product Chemistry Data in Support of the RED for Tetrachlorvinphos Contained in Sweetlix 16:8 Free Choice Mineral with Rabon Oral Larvicide. Transmittal of 1 Study.
- 44367801 Bomgarden, W. (1997) Product Chemistry Data: Sweetlix 16:8

- Free Choice Mineral with Rabon Oral Larvicide. Unpublished study prepared by PM Ag Products, Inc. 5 p.
- 44367900 PM Ag Products, Inc. (1997) Submission of Product Chemistry Data in Support of the RED for Tetrachlorvinphos Contained in VMS Rabon 7.76 Oral Larvicide Premix. Transmittal of 1 Study.
- 44367901 Bomgarden, W. (1997) Product Chemistry Data: VMS Rabon 7.76 Oral Larvicide Premix. Unpublished study prepared by PM Ag Products, Inc. 5 p.
- 44368000 PM Ag Product, Inc. (1997) Submission of Product Chemistry Data in Support of the RED for Tetrachlorvinphos Contained in VMS Pest-A-Side Block with Rabon. Transmittal of 1 Study.
- 44368001 Bomgarden, W. (1997) Product Chemistry Data: VMS Pest-A-Side Block with Rabon. Unpublished study prepared by PM Ag Product, Inc. 5 p.
- 44369500 The Hartz Mountain Corp. (1997) Submission of Product Chemistry Data in Support of the Reregistration for Tetrachlorvinphos Containing Products Hartz 2 in 1 Flea and Tick Pump for Dogs II, Cats II and Hartz 2 in 1 Flea and Tick Spray for Cats and Dogs. Transmittal of 1 Study.
- 44369501 Perlberg, W. (1997) Product Chemistry Data Requirements: Tetrachlorvinphos: Lab Project Number: TM #301-1. Unpublished study prepared by The Hartz Mountain Corp. 15 p.
- 44369700 The Hartz Mountain Co. (1997) Submission of Product Chemistry Data to Support the Reregistration for Tetrachlorvinphos Containing Products Hartz 2 in 1 Flea and Tick Spray with Deodorant for Dogs III and Cats III. Transmittal of 1 Study.
- 44369701 Perlberg, W. (1997) Product Chemistry Data Requirements: Tetrachlorvinphos: Lab Project Number: TM #301-1. Unpublished study prepared by The Hartz Mountain Corp. 15 p.
- 44408600 PM Resources, Inc. (1997) Submission of Product Chemistry Data in Support of Application for Reregistration (RED) of Tetrachlorvinphos Containing Rabon Dust. Transmittal of 1 Study.
- 44408601 Rose, J. (1997) Report for the Chemistry Evaluation of "3 % Rabon Dust": Lab Project Number: PMR-PC-0008: PMR-MV-0005: P040R03A. Unpublished study prepared by PM Resources, Inc. 35 p.

- 44411400 PM Resources, Inc. (1997) Submission of Toxicity Data in Support of the Reregistration of the Tetrachlorvinphos Containing Product Rabon Dust 288:129. Transmittal of 1 Study.
- 44411401 Cerven, D. (1997) Primary Eye Irritation/Corrosion in Rabbits: Rabon 3% Dust 288:129: Lab Project Number: 236-04: MB 97-6113.04. Unpublished study prepared by MB Research Labs., Inc. 12 p.
- 44412300 The Hartz Mountain Corp. (1997) Submission of Product Chemistry Data in Support of the RED for Tetrachlorvinphos Containing Product Hartz Rabon Collar with Methoprene. Transmittal of 1 Study.
- 44412301 Perlberg, W. (1997) Product Chemistry Data Requirements: Hartz Rabon Collar with Methoprene: Lab Project Number: TM 0337-0: HARTZ RABON COLLAR WITH METHOPRENE. Unpublished study prepared by The Hartz Mountain Corp. 14 p.
- 44459200 PM Resources, Inc. (1997) Submission of Product Chemistry Data in Support of the Application for Registration of Fly Larvicide (Feed Premix). Transmittal of 1 Study.
- 44459201 Rose, J. (1997) Study for the Product Chemistry Evaluation of "Fly Larvicide (Feed Premix)": Lab Project Number: PMR-PC-0009: FM-MV-19-1: P026R03A. Unpublished study prepared by PM Resources, Inc. 41 p.
- 44465900 The Hartz Mountain Corp. (1997) Submission of Product Chemistry Data in Support of the Reregistration of the Tetrachlorvinphos Containing Product Hartz Rabon Spray with Methoprene Aerosol Formulation. Transmittal of 1 Study.
- 44465901 Perlberg, W. (1997) Product Chemistry Data Requirements: Hartz Rabon Spray with Methoprene Pump Formulation: Lab Project Number: 332-02. Unpublished study prepared by The Hartz Mountain Corp. 18 p.
- 44474300 PM Resources, Inc. (1997) Submission of Product Chemistry Data in Support of the Reregistration of the Tetrachlorvinphos Containing Product Fly Larvicide (Feed Premix). Transmittal of 1 Study.
- 44474301 Rose, J. (1997) Study for the Product Chemistry Evaluation of "Fly Larvicide (Feed Premix)": Lab Project Number: PMR-PC-0009: FM-MV-19-1: P026R03A. Unpublished study prepared by PM Resources, Inc. 39 p.
- 44483300 Boehringer Ingelheim Animal Health, Inc. (1997) Submission of

Product Chemistry Data in Support of the Reregistration of Tetrachlorvinphos Containing Product Rabon Oral Larvicide. Transmittal of 1 Study.

- 44483301 Vasquez, K. (1997) Rabon Oral Larvicide Manufacturing Base: Analysis & Certification of Product Ingredients--Supplemental: Lab Project Number: 27-044-00. Unpublished study prepared by Boehringer Ingelheim Animal Health, Inc. 15 p.
- 44575600 Platte Chemical Co. (1998) Submission of Product Chemistry Data in Support of the Registration of Agri-Bon Aqua 50. Transmittal of 1 Study.
- 44575601 Irving, J. (1996) Product Chemistry: Agri-Bon Aqua 50, a 50% WP with Rabon: Supplemental Report: Lab Project Number: PLT-157. Unpublished study prepared by Dartec, Inc. 21 p.
- 44575700 Platte Chemical Company (1998) Submission of Product Chemistry Data in Support of the RED Registration of RL-2 Rabon Livestock Dust. Transmittal of 1 study.
- 44575701 Irving, J. (1998) RL-2 Rabon Livestock Dust: Product Chemistry: Supplemental Report: Lab Project Number: PLT-156. Unpublished study prepared by DARTEC, Inc. 21 p.
- 44618800 The Hartz Mountain Corporation (1998) Submission of Product Chemistry Data in Support of the Reregistration of the Tetrachlorvinphos Containing Products Hartz 2 in 1 Fast Acting Flea and Tick Spray for Dogs, and Hartz 2 in 1 Fast Acting Flea and Tick Spray for Cats. Transmittal of 1 Study.
- 44618801 Glass, R. (1998) Product Chemistry Data Requirements: Viscosity: Hartz Rabon Fast Acting Flea & Tick Spray for Dogs, and Hartz Rabon Fast Acting Flea & Tick Spray for Cats. Unpublished study prepared by The Hartz Mountain Corporation. 9 p.
- 44618900 The Hartz Mountain Corporation (1998) Submission of Product Chemistry Data in Support of the Reregistration of Tetrachlorvinphos Containing Product Hartz Rabon Flea and Tick Dip for Dogs and Cats. Transmittal of 1 Study.
- 44618901 Glass, R. (1998) Product Chemistry Data Requirements: Hartz Rabon Flea & Tick Dip for Dogs and Cats: Lab Project Number: 1644/1/1. Unpublished study prepared by The Hartz Mountain Corporation. 9 p.
- 44727300 The Hartz Mountain Corporation (1999) Submission of Spray

Drift Evaluation Data in Support of the Reregistration of the Tetrachlorvinphos Containing Product Hartz Rabon Flea and Tick Dip for Dogs and Cats. Transmittal of 1 Study.

- 44727301 Perlberg, W. (1998) Particle Size Analysis for the Hartz Rabon Flea and Tick Dip for Dogs and Cats. Unpublished study prepared by The Hartz Mountain Corporation. 12 p.
- 44727400 The Hartz Mountain Corporation (1998) Submission of Toxicity Data in Support of the Reregistration of the Tetrachlorvinphos Containing Product Hartz Rabon Flea & Tick Dip for Dogs & Cats.
Transmittal of 4 Studies.
- 44727401 Moore, G. (1998) Acute Oral Toxicity Limit Test (in Rats): Insecticide Dip: Lab Project Number: 6388: P320. Unpublished study prepared by Product Safety Labs. 19 p.
- 44727402 Moore, G. (1998) Primary Eye Irritation (in Rabbits): Insecticide Dip: Lab Project Number: 6389: P324. Unpublished study prepared by Product Safety Labs. 25 p.
- 44727403 Moore, G. (1998) Primary Skin Irritation (in Rabbits): Insecticide Dip: Lab Project Number: 6390: P326. Unpublished study prepared by Product Safety Labs. 20 p.
- 44727404 Moore, G. (1998) Dermal Sensitization Test--Buehler Method(in Guinea Pigs): Insecticide Dip: Lab Project Number: 6391: P328. Unpublished study prepared by Product Safety Labs. 27 p.
- 44732500 Hartz Mountain Corporation (1999) Submission of Toxicity Data in Support of the Reregistration of the Tetrachlorvinphos Containing Products Hartz 2 in 1 Fast Acting Flea and Tick Spray for Cats and Dogs, Hartz 2 in 1 Flea and Tick Pump II for Dogs and Cats, and Hartz 2 in 1 Flea and Tick Spray for Cats and Dogs. Transmittal of 1 Study.
- 44732501 Moore, G. (1998) Dermal Sensitization Test--Buehler Method (in Guinea Pig): Insecticide Spray, Hartz Test Sample # 11242: Lab Project Number: 6366: P328. Unpublished study prepared by Product Safety Labs. 23 p.
- 44762300 The Hartz Mountain Corporation (1999) Submission of Product Chemistry Data in Support of the Reregistration of the Tetrachlorvinphos Containing Product of the Hartz Rabon Spray with Methoprene--Aerosol Formulation. Transmittal of 1 Study.
- 44762301 Glass, R. (1999) Product Chemistry Data Requirements: (Hartz Rabon Spray with Methoprene--Aerosol Formulation). Unpublished study prepared by Hartz Mountain Corporation. 9 p.

- 44780400 The Hartz Mountain Corporation (1999) Submission of Risk Assessment and Exposure Data in Support of the Registration of Hartz 2 in 1 Flea and Tick Pump for Dogs II and Hartz 2 in 1 Flea and Tick Pump for Cats II. Transmittal of 1 Study.
- 44780401 Glass, R. (1999) Hartz Mountain In Use Risk Assessment of an Insecticide Pump Spray Total Dislodgable Fraction from Treated Dogs Test No. 1481--Sample No. 11385, Protocol 99-5 Interim Report (Through Day +7): Lab Project Number: 99-5: 1481: TM 400-0. Unpublished study prepared by Sharp Veterinary Research. 28 p.
- 44780500 The Hartz Mountain Corporation (1999) Submission of Risk Assessment, Exposure and Product Chemistry Data in Support of the Reregistration of the Tetrachlorvinphos Containing Products Hartz 2 in 1 Collar for Cats and for Dogs, Hartz 2 in 1 Plus Long Lasting Collar for Cats and for Dogs, Hartz 2 in 1 Plus Seven Month Collar for Cats and for Dogs. Transmittal of 2 Studies.
- 44780501 Glass, R. (1999) Hartz Mountain in use Risk Assessment of a Flea Collar Dermal Exposure: Lab Project Number: 1475: 99-1. Unpublished study prepared by Sharp Veterinary Research. 29 p.
- 44780502 Glass, R. (1999) Hartz Mountain in use Risk Assesment of a Flea Collar Dermal Exposure: Lab Project Number: 1478: 99-4. Unpublished study prepared by Sharp Veterinary Research. 29 p.
- 44780600 The Hartz Mountain Corporation (1999) Submission of Risk Assessment and Exposure Data in Support of the Registration of Hartz Rabon Flea and Tick Dip for Dogs and Cats. Transmittal of 2 Studies.
- 44780601 Glass, R. (1999) Hartz Mountain in use Risk Assessment of a Simulated Dip Product Dermal Exposure: Lab Project Number: 99-2: 1476. Unpublished study prepared by Sharp Veterinary Research. 16 p.
- 44780602 Glass, R. (1999) Hartz Mountain in use Risk Assessment of a Simulated Dip Product Dermal Exposure: Lab Project Number: 99-3: 1477. Unpublished study prepared by Sharp Veterinary Research. 17 p.
- 44859400 The Hartz Mountain Corporation (1999) Submission of Risk Assessment and Exposure Data in Support of the Reregistration of Tetrachlorvinphos. Transmittal of 9 Studies.
- 44859401 Sharp, M.; Price, P.; Bieler, P. et al. (1999) Revised Exposure and Risk Assessment of Tetrachlorvinphos from Residential Uses.

- Unpublished study prepared by Sharp Veterinary Research and CF Chaisson Scientific Advisors. 79 p.
- 44859402 Glass, R. (1999) Revised Hartz Mountain in Use Risk Assessment of a Flea Collar, Dermal Exposure: Lab Project Number: 99-1. Unpublished study prepared by Sharp Veterinary Research. 31 p.
- 44859403 Glass, R. (1999) Revised Hartz Mountain in use Risk Assessment of a Simulated Dip Product, Dermal Exposure: Lab Project Number: 99-2. Unpublished study prepared by Sharp Veterinary Research. 20 p.
- 44859404 Glass, R. (1999) Revised Hartz Mountain in use Risk Assessment of a Simulated Dip Product, Dermal Exposure: Lab Project Number: 99-3. Unpublished study prepared by Sharp Veterinary Research. 22 p.
- 44859405 Glass, R. (1999) Revised Hartz Mountain in use Risk Assessment of a Flea Collar, Dermal Exposure: Lab Project Number: 99-4. Unpublished study prepared by Sharp Veterinary Research. 31 p.
- 44859406 Glass, R. (1999) Hartz Mountain in use Risk Assessment of an Insecticide Pump Spray. Total Dislodgable (sic) Fraction of Active Ingredient from Treated Dogs: Lab Project Number: 99-5. Unpublished study prepared by Sharp Veterinary Research. 39 p.
- 44859407 Glass, R. (1999) Hartz Mountain in use Risk Assessment of an Insecticide Aerosol Spray. Total Dislodgable (sic) Fraction of Active Ingredient from Treated Dogs: Lab Project Number: 99-6. Unpublished study prepared by Sharp Veterinary Research. 39 p.
- 44859408 Glass, R. (1999) Hartz Mountain in use Risk Assessment of an Insecticide Dip. Total Dislodgable (sic) Fraction of Active Ingredient from Treated Dogs: Lab Project Number: 99-7. Unpublished study prepared by Sharp Veterinary Research. 39 p.
- 44859409 Glass, R. (1999) Hartz Mountain in use Risk Assessment of an Insecticide Powder. Total Dislodgable (sic) Fraction of Active Ingredient from Treated Dogs: Lab Project Number: 99-8. Unpublished study prepared by Sharp Veterinary Research. 39 p.
- 44966700 US EPA (1999) Submission of Administrative Record for Tetrachlorvinphos (Case 0321). Transmittal of 1 Study.
- 44966701 US EPA (1999) Administrative Record of the RED for Tetrachlorvinphos (Case 0321). Unpublished compilation. 1370 p.
- 45183300 The Hartz Mountain Corporation (2000) Submission of Efficacy

Data in Support of the Registration of Hartz 2 in 1 Flea and Tick Powder for Cats and Hartz 2 in 1 Flea and Tick Powder for Dogs. Transmittal of 2 Studies.

- 45183301 Perlberg, W. (1981) Evaluation of a 3% Tetrachlorvinphos Powder Versus Fleas on Cats. Unpublished study prepared by Stanford Research Institute International. 13 p.
- 45183302 Perlberg, W. (1982) 85-Day Flea Powder Test (on Cats). Unpublished study prepared by Stanford Research Institute International. 14 p.
- 45186200 Hartz Mountain Corp. (2000) Submission of Product Performance Data in Support of the Registration of Hartz 2 in 1 Flea and Tick Pump for Dogs II and Hartz 2 in 1 Flea and Tick Pump for Cats II. Transmittal of 2 Studies.
- 45186201 Sharp, M. (1992) Hartz Mountain Short Term Efficacy Study on Cats Test No. 1174-Pump Spray Sample No. 9373. Unpublished study prepared by Sharp Veterinary Research. 8 p.
- 45186202 Sharp, M. (1991) Hartz Mountain Short Term Efficacy Study Test No. 1165-Pump Spray Sample No. 9373. Unpublished study prepared by Sharp Veterinary Research. 8 p.
- 45276900 The Hartz Mountain Corporation (2000) Submission of Product Chemistry Data in Support of the Registration of Hartz 2 in 1 Flea and Tick Collar for Cats and Hartz 2 in 1 Flea and Tick Collar for Dogs. Transmittal of 1 Study.
- 45276901 Speer Products, Inc. (2000) Manufacturing Methods and Documentation (Hartz 2 in 1 Flea and Tick Powder for Cats and Dogs). Unpublished study. 47 p. {OPPTS 830.1600, 830.1650, 830.1670}
- 45421800 PM Resources, Inc. (2001) Submission of Product Chemistry Data in Support of the Registration of Residual Livestock and Poultry Insecticide. Transmittal of 1 Study.
- 45421801 Standley, S. (2001) Product Chemistry 63-17 and 63-20. Storage Stability and Corrosion of Livestock and Poultry Insecticide: Lab Project Number: PMR-PC-0015: 288:95. Unpublished study prepared by PM Resources, Inc. 11 p. {OPPTS 830.6317 and 830.6320}
- 45485500 Hartz Mountain Co (20001) Submission of Risk Assessment Data in Support of the Reregistration of Tetrachlorvinphos. Transmittal of 1 Study.

- 45485501 McKeown, K. (2001) Determination of the Dislodgeability of Tetrachlorvinphos (TCVP) from the Fur of Dogs Following the Application of an Insecticide Powder, Pump Spray or Aerosol: Lab Project Number: 2001-3: 1555. Unpublished study prepared by Hartz Mountain Corp. 137 p.
- 45519600 The Hartz Mountain Corp (2001) Submission of Risk and Exposure Data in Support of the Reregistration of Tetrachlorvinphos. Transmittal of 1 Study.
- 45519601 McKeown, K. (2001) Determination of Dermal and Inhalation Exposures to Tetrachlorvinphos (TCVP) During the Application of an Insecticide Powder to a Dog: Lab Project Number: 1556. Unpublished study prepared by The Hartz Mountain Corp. 215 p.
- 45528800 Hartz Mountain Corporation (2001) Submission of Exposure Data in Support of the Reregistration of Tetrachlorvinphos. Transmittal of 1 Study.
- 45528801 McKeown, K. (2001) Determination of Dermal and Inhalation Exposures to Tetrachlorvinphos (TCVP) During the Application of a Dipping Solution to a Dog: Lab Project Number: TX 76384: 1557: ML01-0925-HMT. Unpublished study prepared by The Hartz Mountain Corporation, Morse Laboratories, Inc. and Sharp Veterinary Research. 258 p.
- 45570600 The Hartz Mountain Corporation (2001) Submission of Toxicity Data in Support of the Registration of Hartz Technical RABON Insecticide. Transmittal of 1 Study.
- 45570601 Nemec, M. (2001) The Effect of Tetrachlorvinphos (TCVP) on Blood and Brain Cholinesterase over 21 Days of Dosing in Rats: Final Report: Lab Project Number: WIL-404001. Unpublished study prepared by WIL Research Laboratories, Inc. 447 p.